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**Abstract** LT GEN HANS H. DRIESSNACK DISCUSSED CHILDHOOD IN YONKERS, NY; PARENTS IMMIGRATED FROM GERMANY IN 1914 AND 1921; MOTHER'S MAIDEN NAME WAS DOHRMANN; PROBLEMS OF IMMIGRANTS IN UNITED STATES DURING WORLD WAR II (WW II); SERVED IN UNITED STATES NAVY FROM 1 SEP 1945 THROUGH AUG 1946; FIRST IN FAMILY TO ATTEND COLLEGE; JOINTED ROTC (RESERVE OFFICER TRAINING CORPS) IN 1950. COMMISSIONED IN AIR FORCE IN MAR 1951; CIVIL ENGINEERING TRAINING AT GOODFELLOW AIR FORCE BASE (AFB), TX; BECAME ASSISTANT BASE CIVIL ENGINEER AT GOODFELLOW; FIRST FLEW A T-6 AIRCRAFT WITH INSTRUCTOR PILOT (IP); ENJOYED FLYING; ENTERED PILOT TRAINING AT HONDO, TX; ATTENDED FIGHTER AND GUNNERY TRAINING AT PINECASTLE, FL; ASSIGNED TO KOREA; FLEW 25 MISSIONS IN F-84 AIRCRAFT WITH 428 FIGHTER SQUADRON IN KOREA; BASED AT K-2 (TAEGU, SOUTH KOREA); GOT HIT ON ONE MISSION IN KOREA; LAST MISSION TO YALU RIVER AND FLAMEOUT ON RETURN; NAPALM MISSIONS; CLOSE AIR SUPPORT IN KOREA; MENTIONED TARGET FIXATION; RADAR CONTROL OVER PYONGYANG; SELECTED AS LEAD PATHFINDER; FEELINGS ON KOREAN TRUCE TALKS; STALEMATE IN KOREA; BEDCHECK CHARLIE (NORTH KOREAN PILOT); USE OF B-29 AIRCRAFT IN KOREA; GOOD MAINTENANCE PERSONNEL; SERVED WITH WW II VETERAN PILOTS IN KOREA; FLEW AIRCRAFT TO JAPAN FOR HEAVY MAINTENANCE AND PERIODICS; SHORTAGE OF FUEL TANKS; BOMBING SUBMERGED BRIDGES; SERVED ON NEUTRAL NATIONS INSPECTION TEAM (NNIT) AFTER ARMISTICE SIGNED WITH NORTH KOREA. RETURNED FROM KOREA; ASSIGNED TO STRATEGIC AIR COMMAND (SAC) FLYING FIGHTER AIRCRAFT; DESCRIBED SAC AS A DIFFERENT WORLD WITH A SENSE OF MISSION; SAC PIONEERED IN-FLIGHT REFUELING; ASSIGNED AS MAINTENANCE OFFICER AS A LIEUTENANT; SAW F-84 AIRCRAFT AS MAINTENANCE NIGHTMARE; CHANGED TO 100 HOUR PERIODIC INSPECTIONS; PROBLEM WITH C-133 AIRCRAFT ENGINE; DESCRIBED C-141 AIRCRAFT AS WORKHORSE; FLYOFF BETWEEN F-16 AND F-17 AIRCRAFT; INVOLVED WITH PERT PROJECT; DEPARTMENT OF DEFENSE (DOD) REGULATION 7000.2; DISCUSSED BID FOR C-5 AIRCRAFT; BLUE LINE REPORTING OF F-15 AND B-1 AIRCRAFT; MENTIONED PROJECT REFLEX; CONTROVERSY OF ESTABLISHING AIR FORCE TEST AND EVALUATION CENTER (AFTEC) IN NEW MEXICO; MINUTEMAN MISSILES DEVELOPED CRACKS IN PROPELLANT AFTER EXTENDED SHELF LIFE; GATLING GUN ON A-10 AIRCRAFT IN SOUTHEAST ASIA WAS IMPRESSIVE; SAM PHILLIPS AS MANAGER OF APOLLO PROGRAM; A-7 AIRCRAFT CAPABILITY. ASSIGNED TO AIR FORCE SYSTEMS COMMAND (AFSC) AS

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COMPTROLLER IN MANAGEMENT SYSTEMS DEVELOPMENT DIVISION IN 1963. WORKED FOR ASSISTANT SECRETARY OF THE AIR FORCE FROM 1964 THROUGH 1968. DESCRIBED IMPACT OF 1973 OIL EMBARGO ON BUDGET; INFLATION AND NEW AIRCRAFT; MENTIONED B-1 AIRCRAFT PROBLEMS; AD HOC GROUP (PROJECT CORONA QUEST) EVALUATED B-1 AIRCRAFT; F-16 AIRCRAFT FUNDING. ACQUISITION MANAGEMENT INFORMATION SYSTEM (AMIS) BECAME SELECTED ACQUISITION INFORMATION MANAGEMENT SYSTEMS (SAIMS) AND WORKED ON COMPUTER DEVELOPMENT. WORKED WITH LT GEN IRA C. EAKER. THOUGHT ON LAW CONCERNING PURCHASING NEW ITEMS FOR AIR FORCE. DISCUSSED HAROLD BROWN. SPOKE OF AIRBORNE WARNING AND CONTROL SYSTEM (AWACS) CONTROVERSY. DISCUSSED INFLATION FACTORS. GRADUATED FROM NAVY WAR COLLEGE IN 1970; WROTE PAPER FOR NAVY WAR COLLEGE ON ALL-VOLUNTEER FORCE; RECOMMENDATIONS MADE TO INCREASE ROTC PARTICIPATION. MENTIONED CARTER ADMINISTRATION AND ZERO-BASED BUDGETING; INCREASED USE OF COMPUTERS IN AIR FORCE; AUDIT AGENCY BECAME PART OF SECRETARY OF THE AIR FORCE OFFICE; AUDIT OF BLACK PROGRAMS. SERVED AS COMPTROLLER FOR AERONAUTICAL SYSTEMS DIVISION (ASD) FROM 1972 THROUGH 1974. DISCUSSED BX SYSTEM IN THE MILITARY; AIR FORCE AID SOCIETY; SOLDIERS' AND AIRMEN'S HOME. DISCUSSED LAW SUIT BROUGHT AGAINST HIM AND OTHER GOVERNMENT OFFICIALS BY ERNEST FITZGERALD WHO ALLEGED CONSPIRACY CONCERNING C-5 COST OVER RUNS; CASE THROWN OUT OF COURT; FAMILY ENDURED BAD PUBLICITY; SENATOR PATRICK J. LEAHY AND WHISTLE-BLOWER LEGISLATION. DESCRIBED SECRETARY OF THE AIR FORCE HANS MARK AS SPACE ORIENTED. PRESIDENT JIMMY CARTER REVEALED EXISTENCE OF STEALTH BOMBER. CUBAN REFUGEES BROUGHT TO EGLIN AFB, FL IN 1980s. IMPRESSION OF AMBASSADOR JEANE KIRKPATRICK. DISCUSSED OFFICIAL FUNCTIONS ATTENDED BY FOREIGN OFFICIALS. DISCUSSED SELLING F-16 AIRCRAFT AND AIM-9 MISSILES TO PAKISTAN. SELECTION OF THE AIR FORCE CHIEF OF STAFF. DISCUSSED SALE OF AWACS TO SAUDI ARABIA. IN DEC 1981, APPOINTED ASSISTANT VICE CHIEF OF STAFF, HEADQUARTERS USAF, WASHINGTON D. C. MEMORIES OF 1983 CASE CONCERNING COMPETENCE OF DR. WILLIAM STANFORD WHILE WORKING IN MILWAUKEE, MN; CASE INVOLVED GEN PAUL MYERS, COMMANDER OF WILFORD HALL UNITED STATES AIR FORCE (USAF) MEDICAL CENTER, TX, BY ASSOCIATION. CASE OF FOUR THUNDERBIRDS THAT CRASHED IN JAN 1982. MENTIONED KOREAN AIRLINER SHOT DOWN IN SEP 1983 AND KOREAN AIRLINER SHOT DOWN OVER RUSSIA. POLICY ON DRUG TESTING AND POSSIBILITY OF ERROR IN LABORATORY. CREATION OF AIR FORCE SPACE COMMAND (AFSC) IN 1983. THOUGHTS ON AIR FORCE PUTTING AIRCRAFT IN SPACE; PROGRAMS TO IMPROVE PILOT RETENTION; TOP SENIOR DEPARTMENT OF DEFENSE (DOD) OFFICIALS TOOK LIE DETECTOR TESTS IN JAN 1982; USING AIR FORCE RESOURCES TO STOP DRUG SMUGGLING; IMPROVED COMMUNICATIONS. GEN DRIESSNACK RETIRED ON 1 JUL 1983. DISCUSSED HIS FOUR CHILDREN: TRINA EAGER, MARTHA HILL, CHUCK DRIESSNACK AND JOHN DRIESSNACK.

**Descriptive Notes:** TRANSCRIPT OF ORAL HISTORY INTERVIEW WITH LT GEN HANS H. DRIESSNACK. INTERVIEW CONDUCTED BY HUGH N. AHMANN, AIR FORCE HISTORICAL RESEARCH AGENCY, AT VIENNA, VA. INTERVIEW IS CATEGORY 1 (OPEN).

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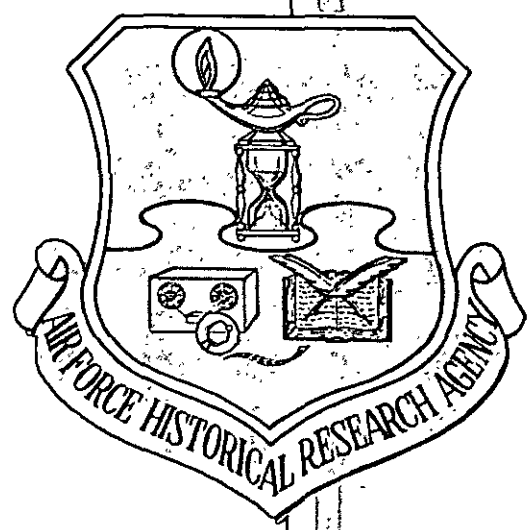
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# U.S. AIR FORCE ORAL HISTORY INTERVIEW

K239.0512-1769



*Lieutenant General  
Hans H. Driessnack*

UNITED STATES AIR FORCE  
HISTORICAL RESEARCH AGENCY

OFFICE OF AIR FORCE HISTORY  
HEADQUARTERS USAF

Maxwell Air Force Base, Alabama

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UNITED STATES AIR FORCE

ORAL HISTORY PROGRAM

Interview

of

LT GEN HANS H. DRIESSNACK

By

Hugh N. Ahmann

18-19 May/19-20 October 1987

Vienna, Virginia

Transcribed & Edited by Faye Davis

CATEGORY 1

## FOREWORD

One of the oldest and oft-used sources for reconstructing the past is the personal recollections of the individuals who were involved. While of great value, memoirs and oral interviews are primary source documents rather than finished history. The following pages are the personal remembrances of the interviewee and not the official opinion of the US Air Force Historical Program or of the Department of the Air Force. The Air Force has not verified the statements contained herein and does not assume any responsibility for their accuracy.

These pages are a transcript of an oral interview recorded on magnetic tape. Editorial notes and additions made by US Air Force historians have been enclosed in brackets. Only minor changes for the sake of clarity were made before the transcript was returned to the interviewee for final editing and approval. Readers must therefore remember that this is a transcript of the spoken, rather than the written, word.

**KNOW ALL MEN BY THESE PRESENTS:**

That I, Lt Gen Hans H. Driessnack,  
have on (date) 18-19 May/19-20 October 1987 participated in an  
oral magnetic-taped interview with Mr. Hugh N. Ahmann

covering my best recollections of events and experiences which may  
be of historical significance to the United States Air Force.

I understand that the tape(s) and the transcribed manuscript  
resulting therefrom will be accessioned into the United States Air  
Force Historical Research Center to be used as the security  
classification permits. It is further understood and agreed that  
any copy or copies of this oral history interview given to me by  
the United States Air Force and in my possession or that of my  
executors, administrators, heirs, and assigns, may be used in any  
manner and for any purpose by me or them, subject to security  
classification restrictions.

Subject to the license to use reserved above, I do hereby  
voluntarily give, transfer, convey, and assign all right, title,  
and interest in the memoirs and remembrances contained in the  
aforementioned magnetic tapes and manuscript to the Office of Air  
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Office of Air Force History by:

DATED

BIOGRAPHY  
of  
LIEUTENANT GENERAL HANS H. DRIESSNACK

General Driessnack was born 11 August 1927 in Yonkers NY, and graduated from Charles E. Gorton High School in 1945. He received a BS degree in civil engineering from Syracuse University (NY) in 1951 and a master's degree in business administration from the Air Force Institute of Technology [AFIT] in 1959. He graduated from Squadron Officer School in 1956, Air Command and Staff College in 1963, Naval War College in 1970, and the advanced management program of Harvard Graduate School of Business Administration in 1971.

He entered active duty through the Reserve Officers' Training Corps program and was commissioned a second lieutenant in 1951. He served as base civil engineering officer until October 1952, when he entered pilot training at Goodfellow AFB TX. After completion of pilot training, he left for South Korea, where he served as a fighter pilot and flight commander with the 428th Fighter-Bomber Squadron, flying 25 combat missions.

From 1954 to 1955 he was assigned to the 517th Strategic Fighter Squadron at Malmstrom AFB MT as a fighter pilot. He was reassigned on base to the 407th Strategic Fighter Wing as a pilot and wing maintenance control officer. While at Malmstrom, he performed two 3-month periods of temporary duty, the first with the Far East Air Forces and the other in Alaska. In 1959 he worked at Wright-Patterson AFB as a research and development staff officer and program control officer in the C-133 and C-141 System Program Offices at the Aeronautical Systems Division.

In 1963 General Driessnack was assigned to HQ Air Force Systems Command [AFSC], Andrews AFB, Office of the Deputy Chief of Staff, Comptroller, as a research and development officer in the Management Systems Development Division. From 1964-68, he was a management system specialist in the Office of the Assistant Secretary of the Air Force. He then returned to AFSC Headquarters as Chief, Cost Information and Management System Division, in the Office of the Deputy Chief of Staff, Comptroller.

After graduation from the Naval War College in 1970, he returned to the Office of the Deputy Chief of Staff, Comptroller, HQ AFSC, as Director of Cost Analysis. From 1972-74 he served a second tour of duty at Wright-Patterson AFB as Comptroller for the Aeronautical Systems Division.

The General was named Deputy Chief of Staff, Comptroller, for HQ AFSC in August 1974. In 1976 he became Deputy Chief of Staff, Procurement and Production, there. He was appointed Director of Budget, Office of the Comptroller of the Air Force, HQ USAF, in December 1976. In August 1978 he was appointed Comptroller of the Air Force. In 1981 he became Assistant Vice Chief of Staff, HQ USAF, Washington DC. He also served as senior Air Force representative, United States Delegation to the Military Staff Committee, United Nations.

His military decorations and awards include the Distinguished Service Medal, Legion of Merit w/2 OLCs, Meritorious Service Medal, Air Medal w/1 OLC, Air Force Commendation Medal w/2 OLCs, Presidential Unit Citation emblem, Air Force Outstanding Unit Award ribbon, Air Force Organizational Excellence Award ribbon, and the Republic of Korea Presidential Unit Citation emblem.

He was promoted to lieutenant general 22 August 1978, with same date of rank. He retired in 1983.

He is married to the former Gloria Mogel of Wyomissing PA. They have four children: Trina, Martha, Charles, and John. His hometown is Yonkers NY.



CONTENTS

	<u>Page</u>
Title Page . . . . .	i
Foreword . . . . .	iii
Interviewee's Agreement . . . . .	v
Biography . . . . .	vii
Contents . . . . .	ix
Early family life . . . . .	1
Problems as immigrants during World War II . . . . .	7
Served a year in Navy . . . . .	10
First in family to go to college . . . . .	11
Early education and ROTC . . . . .	12
Goes out to row/crew . . . . .	15
In charge of ship lower level at age 18 . . . . .	16
Gets into civil engineering . . . . .	18
Becomes Assistant Base CE at Goodfellow AFB . . . . .	20
First taste of flying leads to pilot training . . . . .	21
General O'Malley and wife are killed . . . . .	24
Flying at Taegu . . . . .	25
Last mission is to Yalu then runway flameout . . . . .	28
Flight rules change . . . . .	31
Rescue in North Korea . . . . .	33
Close-air support . . . . .	34
Rotation problems . . . . .	38
Leads Pathfinder . . . . .	39
Poor quality can lose lives . . . . .	40
Army happy with air support . . . . .	41
Had good enlisted and maintenance people in Korea . . . . .	43
World War II pilots in Korea . . . . .	47
Rockets were inaccurate . . . . .	49
Heavy maintenance done in Japan . . . . .	51
"Redding" out to get altitude . . . . .	52
Bombing underwater bridges . . . . .	54
Served as a member of NNIT team . . . . .	56
SAC is different world with sense of mission . . . . .	60
Becomes maintenance officer as lieutenant . . . . .	61
Scheduling in SAC . . . . .	62
Inspection requirements changed based on his records . . . . .	63
PME schools . . . . .	66

	<u>Page</u>
The -141 turned out to be work horse . . . . .	72
Schriever developed self-contained SPO concept . . . . .	73
PERT program . . . . .	75
ASD comes into being . . . . .	79
Well-managed -141 program . . . . .	80
Schriever set up career pattern for program managers . . .	83
Source selection board . . . . .	85
F-16 and F-17 have fly-off . . . . .	86
Specs could fill an airplane . . . . .	88
Workers of C-17 become part of review process . . . . .	91
Keeping costs on track . . . . .	92
Contractual relationship . . . . .	93
Attends ACSC; Allied friends . . . . .	97
Assigned to Systems Command . . . . .	99
Administratively grounds himself . . . . .	101
Writes USAF PERT series . . . . .	105
Monitors management information system for Secretary . . .	109
Backs Army major and walks out of PERT meeting . . . . .	115
Proposals are now DOD 7000.2 . . . . .	117
Works with Ernie Fitzgerald--situation develops with PTC contractors . . . . .	122
JLC is formed--Ernie's problems compounded . . . . .	133
People haven't a clue as to meaning and complexities of criteria . . . . .	141
C-5 bid under Air Force's estimate . . . . .	144
Story about Advanced Tactical Fighter . . . . .	146
Single crystal blades . . . . .	147
Life of a student at Navy War College . . . . .	151
Compares acquisition business of other services . . . . .	156
Discusses all-volunteer force . . . . .	158
Non-military Government leaders . . . . .	161
Implementation of cost schedule control system criteria .	163
Becomes comptroller at ASD . . . . .	164
Blue-line reporting . . . . .	167
Man-hours on projects . . . . .	170
Foresight of Air Force leaders . . . . .	171
Project Reflex . . . . .	172
Controversy over establishment of AFTEC in New Mexico . .	173
Use of RPVs . . . . .	175

	<u>Page</u>
Develop technology then the requirement . . . . .	178
Totally dedicated to George Brown . . . . .	180
Development of SAMSO . . . . .	181
Shelf life of Minuteman . . . . .	182
Reductions of 1973 budget . . . . .	183
TDY at ASD . . . . .	184
Stretching out a program costs money . . . . .	185
Gatling gun's power . . . . .	186
F-15 best ever designed . . . . .	189
Civilianization of comptroller business . . . . .	191
Prototype of weapon system . . . . .	192
Sam Phillips as manager of Apollo program . . . . .	194
Not-for-profit corporations . . . . .	195
The A-7 . . . . .	197
Jones got rid of prop planes . . . . .	199
Air Force develops--Navy just buys . . . . .	202
1973 impact of oil embargo . . . . .	204
Problems with inflation . . . . .	211
"Murder boards" . . . . .	212
B-1 troubles . . . . .	213
B-1 ad hoc group . . . . .	216
"Black" programs and their funding . . . . .	217
Audit of black programs . . . . .	221
White programs technically ahead of black programs . . . . .	223
Forward financing . . . . .	227
Involved with E-4 program . . . . .	228
Cost performance and internal audits . . . . .	229
Packard was best ever at OSD . . . . .	236
F-16 production and funding . . . . .	239
Discusses corporate memory . . . . .	243
Air Force cognizance over plants . . . . .	245
CMSEP, DCAS, AFPROs, NAFPROs, ICAM . . . . .	246
AMIS . . . . .	252
Wanted to be program manager . . . . .	254
Discusses General Eaker . . . . .	258
Becomes DCS/Comptroller at Systems Command, pioneers of management techniques . . . . .	261
Added charges for FMS sales . . . . .	263
Law does wrong by Air Force in purchasing new items . . . . .	264

	<u>Page</u>
Spare parts took airplane monies--law changed to get	
F-4s . . . . .	266
One of top three should have business background . . . . .	268
Tried to generate new thinking . . . . .	270
F-20 never had a chance . . . . .	272
FMS sales determined by Air Force testing . . . . .	274
Murder boards look at model contracts . . . . .	277
Moot inflation factors . . . . .	278
Project Corona Quest . . . . .	280
Kept running flight tests after Carter cancelled B-1 . . . . .	281
Jones took heat on B-1 . . . . .	282
Discusses Harold Brown . . . . .	284
Is an advocate for 2-year budgets . . . . .	286
<u>Profiles in Courage</u> . . . . .	288
Discusses forward financing . . . . .	289
Services' turf battle about testing . . . . .	290
Bob Anthony sets up industrial funding . . . . .	292
Walks out of DOD PERT Cost Group in support of Army . . . . .	293
Airplane weight determines cost . . . . .	298
"Should cost" areas . . . . .	300
Single crystal blades . . . . .	303
Able to challenge because of operations background . . . . .	306
SPOs picked with engineer background . . . . .	308
Worry about technology transfer . . . . .	309
Buying in . . . . .	312
Competitive bidding . . . . .	315
Manufacturing is part of procurement . . . . .	318
Discusses prototypes of A-9, A-10, F-15, F-16 . . . . .	320
TFX was political decision . . . . .	322
Value engineering . . . . .	323
Value of corporate memory . . . . .	325
Flexibility of notification reprogramming . . . . .	327
SPO-directors are crown princes . . . . .	329
Promotions in business side of career field . . . . .	331
Modernization in industrial facilities . . . . .	334
Target plus incentive fee . . . . .	336
Sharing of profit . . . . .	337
Packard is unique--gives incentive to succeed . . . . .	338
Computer-aided manufacturing . . . . .	339

	<u>Page</u>
AWACS controversy . . . . .	341
Copies of planes . . . . .	343
Foreign builders of planes . . . . .	344
C-133 design . . . . .	346
Cost Analysis Research Center; no authority to spend or allocate . . . . .	348
Inflation factors . . . . .	349
Problem of promotions in comptroller field; incentives to save money . . . . .	351
Controller OER system--worst thing that ever happened . .	352
How he was selected for Navy War College . . . . .	357
Involvement with Southeast Asia . . . . .	358
Officer recruitment and ROTC . . . . .	361
Not-requested money given by Congress . . . . .	363
Carter Administration and zero-base budgeting . . . . .	364
Discussions with Army and Navy comptrollers . . . . .	368
Retired people on service staffs . . . . .	371
Hard to get away from using pencil versus computer . . . .	372
Flash notification to Congress . . . . .	375
Political civilian appointments . . . . .	378
Security Systems Account Center . . . . .	380
Audit Agency becomes part of Secretary of Air Force's office . . . . .	383
Audit of black programs . . . . .	385
From Systems Command into Budget . . . . .	388
<u>Playboy/Penthouse</u> scandal with BX . . . . .	391
Air Force Aid Society . . . . .	393
Soldiers' and Airmen's Home . . . . .	395
Sued by Fitzgerald . . . . .	398
Case gets thrown out of court . . . . .	402
Accused of perjury . . . . .	403
Numerous magazines write about "bad guy" General . . . . .	404
Senator Leahy uses case as example against whistle blowers . . . . .	405
Family goes through bad time because of publicity . . . . .	406
Game is "get the General" . . . . .	408
Forced to work and make peace with Ernie . . . . .	410
Question of Mullenhoff's mental stability . . . . .	412
Hans Mark was space oriented . . . . .	413

	<u>Page</u>
Lehman molded Navy . . . . .	414
Carter revealed Stealth aircraft; handling of classified information on the Hill . . . . .	415
Handling of refugee currency and treasures . . . . .	417
Many Orientals around Washington . . . . .	418
Assistant Vice Chief equivalent to chief admin officer . .	419
Working relationship with Chiefs . . . . .	420
Upbeat feeling when Reagan came in; Air Force gets \$10 billion . . . . .	422
Wives get opportunity to fly in SAC planes . . . . .	426
A/Vice interfaces with Air Attaches in social functions .	427
Job as military advisor to Secretary General of UN and some incidents . . . . .	429
Very impressed with Ambassador Kirkpatrick . . . . .	434
Russian wife sad about returning to Russia . . . . .	438
Many Attaches remain in US . . . . .	439
Chief's job is a lonely job; a lot of business is conducted at lunch . . . . .	443
Interested in technology transfer . . . . .	445
Swedes wanted 404 engine . . . . .	447
Case of selling F-16s and AIM-9 missiles to Pakistanis . .	448
Compares Generals Gabriel and Allen . . . . .	452
Requested review of black and white programs . . . . .	453
How an Air Force Chief of Staff is chosen . . . . .	455
Hans Mark never flew in airplanes . . . . .	456
Secretary Verne Orr . . . . .	457
Blue-suiters used as air traffic controllers . . . . .	458
Involvement with South and Central America . . . . .	461
Israelis are security conscious . . . . .	464
Story of AWACS sale to Saudis . . . . .	465
Attaches not utilized fully . . . . .	470
Air Attaches work for DIA . . . . .	473
Attache attacked in Russia . . . . .	474
JCS Chairman as blue-suiter . . . . .	482
McDonnell Douglas cries foul . . . . .	483
Weinberger goes with 50 C-5s . . . . .	484
Physician's competence challenged at Wilford Hall; case falls on General Myers . . . . .	485

	<u>Page</u>
Korean airliner shot down . . . . .	487
Drug testing pros and cons . . . . .	489
Space Command created . . . . .	491
Problem of pilot retention . . . . .	494
Testing of uniform fabrics . . . . .	497
Drug smuggling . . . . .	499
Financing Vietnam War . . . . .	501
Retirement life . . . . .	504
Stops sale by Pakis to China of AIM-9 . . . . .	510
Never had overseas assignment . . . . .	512
Discusses his children . . . . .	517

Oral History Interview K239.0512-1769  
LT GEN HANS H. DRIESSNACK  
18-19 May/19-20 October 1987  
Vienna, Virginia  
Conducted By: Hugh N. Ahmann  
Transcribed & Edited: Faye Davis

A: I understand you are from Yonkers, New York. Is that where you grew up?

D: Right.

A: Had your parents lived in Yonkers quite a while, and was that their home, too?

D: That was their home, but both my parents were from Germany. They were immigrants.

A: When did they come to this country?

D: My father came in 1914 before World War I; my mother came in 1921.

A: How old was your father when he came over?

D: A young man in his twenties. He grew up in kind of poor means in Germany. My grandfather was in civil service. My father went to sea; he was the only boy. He had four sisters. He ended up as an assistant engineering officer in the North German Lloyd. In the old days they went through an apprenticeship, journeyman, masters program; and he went through that entire ritual over in Europe as a machinist, tool and die maker.

He was at sea for several years and in 1914 ended up in Hoboken, New Jersey, and made a decision to just sign off the ship. He took out his first papers when he signed off in New Jersey in 1914 before the war started.



DRIESSNACK

A: That was a quite a fortunate decision.

D: He said when he left Europe on that trip, and it was a long sail, that the winds of war were already beginning to blow in Europe. He had been back and forth to the USA, so he decided to stay here. He went to work in shipyards and places along the east coast.

A: Did you keep track of his family in Europe?

D: My parents married in 1924. My mother came over in 1921, and they met here. My father brought over his family around 1922. He saved his money. You wonder how they saved money in those days, but he brought over the family: mother, father, and three sisters. One sister was married, and she stayed in Germany. I got to know my grandfather pretty much.

On my mother's side, we never knew my grandparents. Grandfather died early. He was kind of an adventurer and went off with a partner to New Zealand in a sailboat. They were looking for gold. Here, everybody went in the early days. For the pioneers there, it was Australia, New Zealand, and what have you. He went to New Zealand, then he got word that his father, my great-grandfather, was dying, and he came home by himself in a sailboat. Years later his partner returned home a very wealthy man, my mother says, but her father didn't benefit from that at all. After he came home, he wasn't home too long, and he passed on, from I'm not sure what; but my mother was 9 years old at the time.

She was raised on a farm in northern Germany around the Bremerhaven area, a little village called Oldendorf, near Zeven. Relatives still live there. I have a cousin there who inherited the farm. The men in the family are all dead, World War I and II.

My cousin, a girl, inherited the farm. She and her husband also had a gasthaus in Zeven, but has now passed that on to her son. I visited there a while back when I was the Comptroller of the Air Force and traveling in Europe. In getting ready for testimony, I would go to Europe to see what was really happening with our facilities. I found myself in northern Germany one evening, and realizing how close I was, went to visit my cousin. Gloria and I went back in 1984, the spring after we retired.

A: Had she been able to keep track of the family here in the United States?

D: My mother always wrote, and she was familiar with us, and her children were familiar with us. I just went in and told them who I was, and they recognized me immediately.

A: Do you still keep in touch with the family over there?

D: Yes.

A: What was your mother's maiden name?

D: Dohrmann.

A: Did you speak German in your house as you grew up?

DRIESSNACK

D: Yes; my parents spoke German in the house. We lived in an area in Yonkers that was predominantly German/Irish. When you think back to the 1930s and 1940s, the churches, lodges, or clubs were the focal point for everybody. My parents belonged to a German lodge, so the friends and relatives were all part of that. The church was a German Lutheran church; in fact, in the early days one service was always in German.

A: How many brothers and sisters do you have?

D: I have two brothers and one sister. I have an older brother Richard. He works with Michigan Bell and lives up in Michigan. He went to school at Valparaiso University in Indiana, majored in engineering, and he stayed in the midwest. He liked it and married a girl that went to school there also. Strangely enough, she was from back home; Peekskill, New York, which is just 30 miles from Yonkers.

I have a younger brother Carl, who is now in Florida. He got into the personnel management business, and then went into business for himself; an out-placement kind of thing.

I have a younger sister Carolyn. She is back in Yonkers and lives in my parents' house. Both of my parents have passed on. She is the manager of Consumer Affairs with West Point Pepperell in New York.

A: In growing up, did you have a pretty "normal" childhood?

D: I think we had a normal childhood. I often say to our children: I don't think my father ever made more than \$50

or \$60 a week. In growing up it was generally around \$35. I remember him coming home sometime in the early 1940s and announcing he got a raise to \$40. We didn't know that we were poor. They owned their home that they paid \$4,500 for. It was a pretty big home; we all lived in it, and they rented an apartment downstairs. In the early days that is where my father brought his family, and that is where they lived. Actually, the house was found for them by my mother's uncle.

My mother came over after World War I because Germany was just devastated; there was tremendous inflation. Both my parents lived in fear of inflation because of that experience. I can understand a little bit of the European paranoia with that aspect of their life, the economics, in some of the things they still do today. They just completely worried about inflation.

- A: When your grandfather came over, was he still young enough to be employed?
- D: No. He was retired when he came over. My grandfather died when I was in the second grade; he was 74 years old. He had a big white handlebar moustache; a very gentle kind of person. We always remembered him as Opa. He was at the house a lot; then when they moved into their own apartment, he used to visit often. He came every day when I was small. My mother always said that he was a delight to have around because he was very good with the children, and we all liked him. The sisters eventually married and moved away, and my grandparents lived there in Yonkers until they passed on.

DRIESSNACK

A: Coming from Germany as adults, were your parents bothered when World War II started and we became involved?

D: My father became a citizen right away when he came over in 1914. He decided he was going to become a citizen, so he took out his first papers. The war was over 4 years later, and I think you get your second papers in 5 years, as part of the regulations. I'm not quite sure how that worked. In 5 years he was ready for citizenship. He took whatever exams he had to take and became a citizen, so he became a US citizen early.

When my mother came over--it is hard to think of those days today--women were relegated to the home, the nursery, and the garden. They provided for the kids and the husband. I remember discussions as a young person about my mother wanting to get her citizenship papers. She felt like she was somebody without a country. Everybody said, "What do you want to be a citizen for? You don't need it; women don't need it. Your husband owns the property."

My mother insisted that she get citizenship papers. It was around 1938-39 that she finally became a citizen. I was born in 1927 so I was like 11, 12, or 13 years old. I can remember some of the conversations. She was really proud of the fact that she finally became a citizen. Her problem was that she stayed with relatives when she came over. They had children and wanted to make sure they learned German, so my mother was always having to teach them German. As a result, she wasn't learning much English.

My father, as we grew older, lost his accent completely. He went to work every day and worked in the shop. He ended up with the subway system in New York as a machinist tool and die maker in the machine shops. We always chided him about not going west and staking out a claim, but he stayed on the east coast. He met my mother at one of these German lodges. They always had dances, and that is where they met. My mother became a citizen, then World War II came. We didn't have a problem, except they used to call my older brother "Hitler," as a nickname, which used to upset us. He took it and sort of accepted it. I think I'm the only one who ever got in a fight over the fact that I didn't like what they were doing.

We had relatives that were not citizens and friends in the area that were not citizens; one or the other of them was, but probably the wife was not a citizen. I remember them coming down the street and taking the shortwave radio out; they took their cameras and binoculars. That is hard to believe today when you look at all the rights people have. In those days that was not so. I remember some good friends just two doors down the street, and one day they came and took all their cameras and their shortwave radio.

We used to practice blackouts and things like that in World War II. It seems to me my father said, "Make sure everything is out!" You had to pull your shades down, but we turned lights out just to make sure that we couldn't be accused of something. I often tell this story to my boys.

In those days I never looked at my father as a kind of philosopher, but several friends came to him from the

## DRIESSNACK

German/American Bund. That was a group in New Jersey, and they were the equivalent of a kind of Hitler Youth where they took the young boys for training. They marched and had .22 [caliber] rifles. They showed them how to use the rifles. They wore brown uniforms and all this sort of stuff.

My brother and I wanted to go. We saw this as an adventure, and there were some friends who had sent their boys over there. They told us about their rifle practice and all this good stuff. As teenagers, we thought this would be terrific! Get your own rifle! My father said, "No."

I remember them coming to the house one time. My brother Richey and I were sitting there listening. He said, "Absolutely not! If the boys are going to join something, they are going to join the Boy Scouts. They are not going to join the German/American Bund. I came here and became a citizen of this country, and we are not going to do anything to jeopardize that; or put on some kind of show that says I'm still a citizen of Germany. I'm not."

I often thought about that later when I got commissioned. I would never have been able to have gotten commissioned. Every time I filled out one of those security forms, I looked at it and kept thinking of that incident. Relatives were saying, "Why don't you let the boys go?" They thought it would be good for the boys. But my dad put his foot down and said, "No, we will not participate in that." He had his own reasons, and they turned out to be exactly right.

A: Years ago a friend of mine had joined some Communications of America workers' union, and it turned out to be Communist dominated. Every time he put that down, the flag would come up and he would have to explain, "Hey, I was just down there among the peons."

D: Through the years as I filled out security forms and would see: Did you, your parents, or anybody belong to any organization? I always think, "Thank God for Pop's wisdom. He had enough sense not to let us go."

A: Did going to war in World War II upset him?

D: I don't think so. If it did, it didn't show much. My mother was concerned because her sister lost her husband in World War I and her son, mom's nephew, in Germany in World War II, who was about our age or a little older. He eventually got killed in the war in France, and he is buried in France. My older brother went first, and he went in the Navy. I think they just took the attitude that we were part of the country and were bound to serve.

One thing about Europeans and foreigners in general, they look at the military with a certain amount of honor. There is never any stigma attached to the military or to a uniform; not like it is here, necessarily.

I had one problem with World War II. I was always big and tall for my age. As a junior and senior in high school, my brother and all the people I played ball with on the street were gone. As I was delivering the newspapers on my newspaper route, they used to say to me, "Why aren't you in



DRIESSNACK

the war? You are big enough." I would say, "I'm not old enough." They would say, "You are big enough; you ought to be there. I've got two sons, or three sons, there"; and that used to bother me.

A: I noticed you joined up quite early; you enlisted in the Navy.

D: And it was part of that peer pressure; that, and the fact that in those days you thought, "Gosh, I better get in before the whole thing is over, and I won't get to be a part of it." So I joined when I was still in high school, and they wouldn't let me go until I graduated. Of course I graduated in 1945. Before I could go, the European thing had dwindled down; that was over; and we also ended up in August with V-J Day. Things got settled down a little bit, and finally I got called into the Navy. I spent a year in the Navy.

Amazingly enough, I joined a program called V-6 in the Navy. V-6 was "victory plus 6 months." As it turned out, I served just the year in the Navy because officially the war was over sometime later in 1946. I got out in August 1946; I went in the 1st of September 1945. When I got out in 1946, I had a scholarship at Syracuse University. I went to college jointly on the scholarship and GI Bill.

A: Where had you gotten the scholarship from?

D: It was a football scholarship. I played football in high school, and I had pretty good academics, so it was a combination of that. I was on the all-metropolitan football

team in the New York area. The Syracuse coach came down and interviewed me, and I got awarded a 4-year scholarship, which was kind of nice. My father didn't believe that. He would not believe that somebody offered me a 4-year scholarship just to play football. I said, "It's not just football. I had good grades."

Then he came to graduation, but he wouldn't believe it until after the graduation ceremony was over with, then it was in the newspaper, and my grandmother saw it. She called me up--she never spoke English--and wanted to know what I was going to do with all that money because 4 years was valued then at \$4,000. In 1945 that was more money than my father made.

I was the first one in our family that went to college. My brothers eventually went on the GI Bill. My older brother had spent a junior tour in the Navy, like 3 1/2 years. When he got out, he went up to Newport and took a course. He had been a quartermaster. A quartermaster in the Navy is on the bridge. He steers the ship and does the navigation, which is quite different than the quartermaster in the Army.

As a result of that navigation training, he took some exams, went through a short course, and got a commission in the Merchant Marine. He got his third-mate papers. With that came a commission in the Navy Reserve, so he was an ensign in the Navy Reserve. He maintained that and eventually retired as a commander in the Reserves.

He sailed for several years. He got to be a first-mate. I think when I was a junior in college, he decided there was

DRIESSNACK

more to life than just sailing and decided to go to college. I was 2 years younger than he was, but he ended up 2 years behind me in college.

A: As you were growing up, you say your school grades were pretty good?

D: Yes; I had good academics.

A: When you were in high school, what had you intended to do when you grew up?

D: I would be an engineer; my whole life I was going to be an engineer. I started out in mechanical, but I wanted to build bridges, buildings, and things like that, and actually leave something.

A: In college, what did you major in?

D: I started out in mechanical engineering, then I switched over to civil engineering. I have a degree in civil engineering. I graduated from college in 1951.

A: Did you get involved in ROTC or something like that?

D: Yes. We became a separate force in the Air Force in 1947, when I was at school. There was an Army ROTC at Syracuse. I would have joined ROTC had there been a Navy ROTC, having just come out of the Navy, but there wasn't one. When the Air Force came into being, they split off, and there was an Air Force ROTC set up. That got started about 1948, and they ended up with a separate Air Force ROTC. There was a

new program started also for engineers and scientists, a program geared for 2 years at the senior ROTC level for those people that had prior service.

A house mate of mine had been a sergeant in the Army. He came in one day--he was also in civil engineering--and said, "We ought to go sign up for this." He was several years older than I was. He was from the New York area--Mario Joseph Charles Locavara; I never forgot him. He is working in civil engineering today for Montgomery Ward. He does a lot of their site selection and new building development. He lives up along the Hudson somewhere, but I have seen Mario over the years. He was the one that convinced me we ought to go in and talk with the major in ROTC, so we went in and talked to him.

The thing that interested me was that they were using Corps of Engineer books, and in many respects I thought those textbooks were more advanced than the material we were using. They were the latest thing; lots of graphics and tables and charts. All of ours were computations that we had to figure out ourselves. It seemed to be complimentary or supportive.

We decided we would join; we were the last two. They had a quota of people that they were going to take. I joined that class, and I graduated in 1951. I got in ROTC in 1950; this was a 2-year course, and I was going to graduate, but I told them I was staying for graduate work, and they let me in on that.

DRIESSNACK

In fact, I did take one semester of graduate work in aerial photogrammetry, surveys from the air. I got very interested in that; using the aircraft to do triangulation mapping. It had come out of World War II. In fact, they were using B-17s as the platforms. They had triangulated and mapped most of South America from the air.

(END SIDE 1, TAPE 1)

A: General George Goddard, the father of aerial photography, was in the States. He was heavily involved. I don't know if he ever got that sophisticated. He did a lot of camera work.

D: I had one professor, Professor Church, who during World War I, went to France with Lambert, the French cartographer. Those are the folks that set up the coordinates that permitted the Allies, during World War I, to pinpoint artillery. They set up a coordinate structure. There were a lot of mathematics involved in those days. We did everything on a 10-piece calculator; now to think back and to see where we have come from and to see what the kids can use today!

That was a very interesting course, and there were some interesting folks in that course. They came from all over the world because Syracuse was noted for its photogrammetry department.

I go back to Syracuse frequently. Several years back they voted me a Letterman of Distinction. These are lettermen that lettered in a major varsity sport and have excelled in

their career since graduation. I was on the crew at Syracuse.

A: Not football?

D: No. I went up to play football, and I tore the cartilage in my knee; had an operation in my freshman year. In order to strengthen that knee--the doctor I had was a Syracuse graduate--the doctor told me to go over to the gym and get in the tanks with the crew machines and row, and that back-and-forth action would strengthen my knee because you move back and forth on the slide.

He asked me if I wanted to be a professional football player, and I said, "No; I am in engineering." Then he said, "What you want to do is strengthen your knee and stay away from football and basketball for a year; no side motion or quick motion." That was some very good advice because from that day to this I have never had a bit of trouble with that knee.

Then I went out for crew. When I was in there evenings working out, the crew coach came in and asked me to come out and work with the rest of the folks during the afternoon. I did, and then I got invited out to the lake, and I ended up stroking the crew. He was Ned Ten Eyke, a very famous crew coach. He was the first American to win the diamond skulls in England back at the turn of the century. Jim Ten Eyke, a legend in American rowing history, was his father. They both coached at Syracuse. It was a great sport.

DRIESSNACK

I met a lot of crew people around the country; a different kind of person. You meet a lot of professional people in rowing as opposed to the pure jocks in football and basketball. I got to know a whole different group of folks. Larry Skantze [General Lawrence A.] rowed at Navy, as an example. There are lots of professional people like that around whom I have met who rowed wherever they went to school.

A: There was not much water around Iowa.

D: Wisconsin has a crew. Army does not have a crew, and I'm surprised because they live on the Hudson.

A: With joining the ROTC, what did you anticipate doing with the commission?

D: I was in the engineering part. We are talking 1950, and in the summer of 1950 the Korean War started. When I got out of the Navy, I stayed in the Navy Reserve. A Chief advised me to. He said, "Do you want to join the Navy Reserve?" I was being discharged in the Brooklyn Navy Yard. I was on a carrier in the Navy; the CV-33, Kearsarge. I loved that ship; got to know everything about it. I was in the main engine room. I got to be in charge of the lower deck of the main engine room.

Some old Swedish fellow, "Big Swede," was the chief engineer in that area. He showed me every valve, relief tube, and emergency sort of stuff in case there were problems, everything there was to know about that lower deck in that

engine room. I methodically went home at night and would draw all that up. I wrote it up in a little book I had.

We were on a shakedown cruise, and I came down for my watch at midnight one time, and there was all kinds of activity. They were saying there was over-pressure on the pumps--this was a brand-new ship--and they were looking for a way to relieve the pressure.

I said, "Oh, that's over here under the floor plates below the bilge pumps." This warrant officer said, "Where?" I went over, lifted the thing up, went down there, and opened the valve, and that was it. It relieved the pressure. He said, "How did you know that?" I said, "I was here when they built it. It was in the yard, and they showed me all this stuff." So they put me in charge of the lower level of the ship, and I was 18 years old. But I really loved that mechanical kind of thing. As a result of that, I started out in mechanical engineering.

Part of the course in engineering school was a surveying camp, and everybody had to go to it. I spent a summer up at Lake Placid in the Saranac Lake area. Syracuse had summer camp up there for surveying. We went out in the woods and actually surveyed hydrographics on lakes and surveys on the roads. It was an outstanding course. I really enjoyed it, but unfortunately, it took the summer, so you couldn't work; but that was a course that had to be taken. That got me back to building bridges and roads.

I said, "This is really what I want to do." I got an "A" in the course and decided I wanted to get back to that. I came



DRIESSNACK

back the following year and transferred to civil engineering. In doing that, I had to make up some courses. That was going to keep me beyond my normal graduation, which would have been June 1950.

When I joined ROTC, I had to stay on anyway, and I was taking graduate work. I finished all my course work in photogrammetry; never wrote a thesis because I came in the service. I was ready to graduate. I had earned my degree in January 1951.

The PAS&T at Syracuse was a fellow named Colonel Halloran. I don't know what happened to him, but I thought he was just the right kind of guy to have in ROTC. Halloran put in for a waiver for me to come in with 18 months of ROTC. I had prior service, and I had a degree now in engineering. It was accepted.

As far as I know, I'm the only one to have 18 months of ROTC and still get commissioned. This was the first engineering class that graduated in that program, and I was the first one because I got out before June 1951. It was February 1951, and I got commissioned as of 1 March 1951. I was a Distinguished Graduate, so I got a Regular commission. There were seven of us.

A: What were you going to do in the Air Force?

D: I came into civil engineering, and I went down to Goodfellow AFB, Texas.

A: Wasn't the Army still doing most, if not all, of the Air Force engineering?

D: Yes, and that was a problem. We all visualized ourselves building runways and things overseas, but the Corps of Engineers got involved. We had an outfit at Wichita Falls, Texas, that was called SCARWAF [Special Category Army with Air Force]. It was sort of a combat engineer. These were Air Force people that would go out and do the kinds of things that the Corps of Engineers did. However, the politics in Washington killed that. Before we ever really got involved, the decision was made that the Corps of Engineers and the Navy Civil Engineers were going to take care of our problems. We never did build up our own Corps of Engineers in the Air Force, even to this day.

If you go on a base, part of the problem is, if you are building a runway or major construction, major facility, the Corps of Engineers have oversight. In some cases, the Navy has cognizance. The Navy built the DIA Building at Bolling [AFB DC]. It is in the eastern region and has to do with how close you are to the water, the docks, and so forth. Their civil engineers take care of the docks and everything along the shore.

A: The Air Force has a little more capability with those Red Horse teams. That is kind of a combat, let's-do-it-now type thing.

D: That's right. But it's not the major construction thing.

DRIESSNACK

A: I don't think I have talked to anybody who was ever in that Red Horse part of the Air Force. Did you find yourself disappointed in what the future held for Air Force engineers?

D: I was; but as a lieutenant, I wasn't looking down the road at too many things. I obviously wasn't involved with any of the policy then, but I was concerned with what I was going to do. I worked for Maj Fred May [Col Fred F.], whose son now has a squadron in Europe; a young fellow. We have come full cycle. Fred May was battlefield commissioned in World War II. He had always been in construction and taught me a lot about the business. I was a Regular officer and the only one in our whole group, so he took me under his wing. He said, "Okay, you are going to make this a career, and you ought to learn all aspects of it," so he let me do everything.

A: This is with the outfit at Sheppard?

D: No; I went to Goodfellow. I became the Assistant Base Civil Engineer. In those days we called them the Installations Officer. We had shops, roads, and grounds. I moved around and learned every phase of the business.

I helped put together the base construction budget that year. We were late getting ours in. It wasn't going to make it in the mail, so we were going to fly it up to Scott AFB, Training Command Headquarters. Goodfellow AFB, which was a training base, had T-6s.

Major May said to me, "You are the only one that can really defend this whole thing because you were tied in with putting the whole thing together. I would like you to fly up; we will fly you up there. If they have any questions on it, you can stay and answer the questions. That way we won't have a lot of back-and-forth correspondence."

I did that one Saturday morning. I got in the T-6 with an IP [Instructor Pilot]. That IP taught me a lesson that stuck with me my whole career. He said, "Have you ever flown?" I said, "No, I never have. I was in a commercial airplane once in my life and that was to get to Texas." He said, "Jump in the front seat. Would you like to fly?" "Sure, why not?" Red-blooded, 22-23 years old; there wasn't anything I couldn't do. (Laughter)

He said, "Okay, you follow me through. I will take off, but just put your feet lightly on the rudders, and hold your hand on the stick." We sat there for 15 minutes or so while he explained to me the principals of flying. He showed me how to use the parachute and what to do if we had to crash land; kind of a standard briefing. We took off--a beautiful day--and flew up to Illinois.

The T-6 has an open cockpit. It is either open or closed. We had on goggles, a leather helmet, and the whole bit. We got up in the air and he said, "Here is how you fly. The whole thing is on that stick." He moved it side to side, pulled it back and forth. "If you want to feel yourself uncomfortable, try popping it forward," which I did, "and you can put Gs on it by pulling it back, so you have to go smoothly." He taught me about that needle ball and trying

DRIESSNACK

to keep it straight and level. I did a little bit of that all the way up to Illinois.

We landed, and I followed him through on the landing. I went in and did my thing by delivering the budget, answered several questions. We went out and had a bite to eat, got in the airplane, and came back home. Monday morning I went in and put in for pilot training.

A: So you really got bit then!

D: Yes. Later on when I was giving rides to ROTC students, which I guess we still do, I was up in Montana; we went over to Fairchild [AFB WA]. Everybody had to provide two T-33s, and I was an instructor pilot in the T-33 then, so we went over, and I remember giving rides. I would never have gone to pilot training had I gotten sick on that first ride or had he tried to wring me out.

On those ROTC rides a lot of the young fighter pilots had just come back from Korea. I remember going up and showing them smoothly how things work, doing some chandelles, and even rolling the airplane--smoothly--with them on the controls. They came back exhilarated.

When we talked about it over at the bar with the other instructor pilots later on, a lot of them were bragging about the fact, "that I got this kid sick before we got to 5,000 feet," or "I really pulled his guts out." I said, "Yeah, what we are supposed to be doing here is trying to encourage them or stimulate some interest in flying. What you are doing is discouraging them! They are never going to

fly if you are doing that." For the people that I had with me, I made sure that we didn't do any of that kind of nonsense.

I often thought later of how many young people who would have been excellent pilots were discouraged because of that first association. That is true no matter what you do; whether you are in a car, water skiing, scuba diving, or whatever. It is that first experience that is going to set the tone and whether or not you are going to go back for more. That IP in the T-6 is the one who really got me interested in flying. I don't know his name, don't know who he is, but he happened to be standard issue Air Force IP.

A: That is a good point. This was a Saturday, and he could have been thoroughly disgusted that they got him out there to run you up to Scott on a Saturday. He could have been vile, unhappy, and sour about the whole thing.

Did you get any static from anybody because you were in engineering and wanted to put in for pilot training?

D: The major I worked for--again, very supportive--said, "If you are going to be a career officer, you probably should fly; you ought to have wings and all the more power to you." He was very encouraging. I went off to pilot training. I got accepted, took my physical and written exams, and was in Class 52-George. I went to Hondo, Texas. The other celebrity that came out of Hondo was Jerry O'Malley [General Jerome F.]. In fact, Jerry's wife was the secretary to the head of the academic section at Hondo, and that is where Jerry met Dianna, a great gal.

DRIESSNACK

A: She was killed in that crash, too, wasn't she?

D: Yes, she was; unfortunately. Dianna knew everybody that ever went to Hondo. We went to the Navy War College together, too.

There were 16 Air Force officers there at Newport in 1969. When we first got together, an attractive blonde walked up to me and said, "Didn't you go to pilot training at Hondo?" I said, "I sure did," and she introduced herself and Jerry. Jerry said, "She never forgets anybody that ever went through Hondo!" It was unbelievable. She had an amazing capacity for remembering faces and names. Of course I guess she had seen them day in and day out.

A: What kind of flying did you want to do once you got out of pilot training?

D: I wanted to be a fighter pilot, but when I finished basic, they told me that I was too tall because jets were now coming in. I was in Class 52-George, and the Air Force was just beginning to get jets. F-80s were around, T-33s; then the F-84s and F-86s were being introduced. The Korean War was on, and they needed fighter pilots, so we got into a discussion about sizes of the cockpit and whether you could survive in a cockpit, and they measured us--the knee length and torso--to see whether or not we would fit in a cockpit.

I was very uncomfortable in an F-80. In fact, if I sat on a dinghy, I had to bow my neck. I used to fly sort of looking out either side with a bowed neck. I remember going through gunnery in Florida, and that was a pretty uncomfortable

ride. Psychologically, I was geared to go to B-25s in multi-engine advanced training, but when the orders out, lo and behold, I was assigned to fighters.

I went to fighters and gunnery training at Pinecastle, Florida. That whole area is now Disney World; it is completely changed around. I went to Korea from there; flew 25 missions in Korea in F-84s with the 428th Fighter Squadron, 474th Wing. I actually got assigned to the 49th at Taegu (K-2).

By the time we got to K-2, they had changed the nomenclature because they had sent one squadron, the 9th Squadron, to Komaki [Air Base]. There was the 7th, 8th, and 9th. The 9th was training in the early days to carry a nuclear weapon. They then changed; just switched flags between what was at K-8 and K-2. We went to K-2 at Taegu, but they had just taken on the 474th flag with the three squadrons. Today the 474th is out at Nellis [AFB NV], and the 428th is out there also.

A: Did you get attached to the 58th Wing somewhere along the line?

D: That was the group. There were essentially two wings there. The 58th ran the base.

A: Was that where 5th Air Force Headquarters was?

D: They might have been there at one time, but when I was there, they were at Seoul.



DRIESSNACK

A: You are right. General Partridge [Earl E.] moved his 5th Air Force there right at the start of the Korean War.

D: At one time K-2 was the perimeter. K-2 was one of the last bases left. It was the Pusan perimeter, and the enemy was just over the Naktong River there. They used to fly two or three missions with one tank of fuel.

A: When you got over there, the war had really settled down. What did you find yourself doing?

D: We flew deep missions looking at ways to interdict or disrupt the bringing of supplies south. We went after bridges, roads; looked for rolling stock and things like that.

A: At this period of the war were you able to find any of that?

D: Yes; found bridges that we kept blowing up. In fact, on two missions I think we flew probably the longest missions of the war. We went after the bridges at Sinanju, which is up on the Yalu, and took out a span of bridges. That was kind of hair-raising because we did it on the deck with F-84s. It was sort of at the end of our line on fuel; it was the maximum radius of the airplane.

We went in with two 1,000-pound bombs. We were a flight deck of four. I was part of that flight that went in on the deck, flew right down the span, and dropped the bridges. We had three flights that were flying CAP [Combat Air Patrol] for us. They were supposed to keep the folks away from us and suppress the flak.

A: Would they have been F-84s?

D: Yes. The -84s had a good record against MIGs. In fact, they had the record until the -86s arrived. On one day the F-84s shot down 12 airplanes.

A: I must have been talking to F-86 pilots all this time.  
(Laughter)

D: The -84 was not that maneuverable at altitude, but below 15,000 feet you could hold your own with anybody.

A: Was this the straight wing?

D: Yes. We had -84Gs. There was good response from the airplane, and it was a good flying airplane; great gun platform and a good bombing airplane.

A: You say you came right up the span. Did you find yourself in Manchuria as you pulled off?

D: We came pretty close.

A: Were there times when pilots went across on their own to Manchuria?

D: Not where we were. Later on the idea was that all of the airplanes left on the last day of the war were to be counted. As they counted the airplanes, the peace talks had progressed to a point where you could always have that number of airplanes in-country, so we flew in everything

DRIESSNACK

from the carriers and from Japan. The runways and ramps were full.

On the last mission of the war we flew north with a flight of 24 airplanes, and I was leading "D" flight. We went all the way up to the bend of the Yalu, about the middle of the country. There supposedly were some dirt strips up there that we wanted to eliminate so they couldn't bring airplanes in and count those airplanes.

I had an airplane that had two problems: One, it was a smoker; it left a trail of smoke. I thought, "God, if they ever pick out anybody, I'm the first one." The second one was, it used more fuel than the others. You get to know your airplanes after a while, so I was very sensitive about this one. I had flown several Pathfinder missions while I was there; I was a flight commander, and I knew the country pretty well by then. As we were driving up north, I was very cognizant of exactly where we were. We had maintained radio silence. The Yalu is not very big up there. As we got up to the target area, I knew we were on the target.

(END SIDE 2, TAPE 1)

D: I knew we were at the Yalu. I could look down and see these air strips. I said, "Red One, I've got the target off my right wing, and I'm going in." They immediately turned around and came back. They were all over the river. I knew darn well that was the target. I don't know where the heck we would have been because there was no other river we were going to cross. We went in on that target and then came home. Coming home was kind of sporty in that there was also

another flight coming back. The 58th guys had been out, so they were coming in.

As we got back to K-2, we had airplanes all over the place, and people were low on fuel. I was on final, pitched out, came around, and made my turn; somebody was low on fuel and said, "I'm coming straight in"; called an emergency. The tower asked me to go around. I said, "Rog," and just bent the airplane round, and I remember him coming right over me. I bent around--and I was very casual about the whole thing for some reason--made a tight circle, came around again, came in and landed, and I flamed out at the end of the runway. I had run out of fuel, too; but everybody was in that state. I knew my airplane was burning more fuel than others, which was one of the reasons I was concerned about where that target was. I rolled down the end of the runway and said, "Send a tug out to pick me up." I rolled to the end of the runway and stopped past the turnoff because I couldn't make the turn.

A: Did you ever get into any trouble over there?

D: I got hit on my fourth or fifth mission going in on a target. I got a 37mm through the wing. I got hit in the aileron, and it was a large hole. It was about 1 inch from that piano hinge that holds the aileron on. Had it been 1 inch further into the wing, I would have lost that aileron and lost control of the airplane. That would have been all she wrote. I was rolling in on the target, which was a bridge in the hills, so I don't know whether I would have gotten out of there or not. I remember coming back up off that target. I joined up on the lead, and he said, "Boy,

DRIESSNACK

they got your number early." I looked out and was shocked to see this hole in my wing. I got the airplane home, and that was my baptism of fire.

A: That just illustrates how it can be a matter of inches. Did you ever run into any air-to-air over there?

D: We never got jumped by air-to-air on any of the missions that I was on. We flew quite a bit with -86 cover; they were above us. They had a higher ceiling than we did. On that last mission we flew we only had 500-pound conical fin bombs. We tried to figure out whether we could make it or not; whether -84s could actually get there. We configured an airplane to carry the bombs, and I flew it on a test mission all around the perimeters of southern Korea just to get the mileage check. I went out to the coast, flew up the coast across the 38th Parallel, back down by Pusan, and back up again. I dropped the bombs at our bomb dump and came back and landed. This took up the allotted time. There was a sufficient amount of fuel left so that we felt we could make that last mission.

A: Had there been a lot of expertise built up during the Korean War by the time you got over there as to how to fly the jets in a fighter-bomber role, or was there still a lot being learned about how the jet was to be used in this role?

D: One of the problems you have with rotation is that you learn some things, but then the experienced people leave. Earlier I don't think I would have let my folks roll in the way I was taught to roll in later on. I learned that because I got burned; I was hit. When you have 24 airplanes going

down a chute, and they come in one after the other rolling at 8,000 feet or 15,000 feet and pull up at 7,000 or 8,000-- which is what the rules were at one point--and drop their bombs, they can just zero in on you.

Toward the end of the war it got to the point where someone felt fighter bombers were expendable, so we went right on down on the deck. The rules then changed. At one point they said there was no target in Korea that was worth an F-84 or a pilot's life, so we pulled out at 7,000 feet, plus we had a lot of 37mm around the area.

A: What was the range on that AAA?

D: It could get to you all the way down the bomb run, but we actually were on one mission at Pyongyang where we went in a very heavily fortified area, and we were at 22,000 feet. There were red balls all over the place. They had radar-tracking anti-aircraft guns that they developed during World War II. You could see those red balls and white puffs all over. You kept telling people you could see them coming up, and you would tell the guy in front of you, "Break right, or break left."

That got to be the hairiest experience I was ever on because not only were there anti-aircraft bursts at our altitude, but there were airplanes all over the place breaking right and left, and people were having a hard time staying in formation. We broke formation and spread out because of the anti-aircraft, then we went in on the target.

DRIESSNACK

I had some gun camera film where I have my eyes on the target going in, and there is an airplane that cuts right across in front of me, and it is one of ours; it is an -84. He is coming from another direction. (Laughter) That was the biggest hassle I had ever seen in the air. We had a lot of airplanes. We had 24 or 36 airplanes; I forget.

A: This raises a question, General. Were there too many airplanes available and being used where they shouldn't have been used, or were there always targets?

D: I think there were targets, but there were some things we went after that probably weren't worth going after.

A: I have heard this complaint in South Vietnam where they were going out and bombing a bamboo foot bridge that really was not commensurate with the effort. Do you think the North Koreans and the Chinese responded as they should have to your air threat? Was it a good response, or could they have done better? How did you view their air defenses?

D: On a couple of napalm missions where we were flying wing abreast and dropping napalm, just burning a whole area, on that mission scenario we lost about an airplane a day. That didn't last too long. I had a good friend who was lost on one of those missions. He was from Georgia Tech, and he had just received notice that he had a little girl.

Another one of our people was shot down but got out of the airplane. He went to Cho-do on the west coast and bailed out. He got hit and chandelled up to his highest altitude as far as he could go. He was on the run coming down, so he

just used his air speed to get the altitude back, then tipped it over and coasted out as far as he could go and then bailed out. We flew a rescue CAP, and they went in and got him out. That was John Gaskell. He is a successful surgeon today down in North Carolina.

A: Was there much hope if you went down in North Korea? For example, the famous movie and book, Bridges of Tokori; was there much helicopter search and rescue in those days?

D: Our instructions were always to get to the coast. We had Cho-do and Yo-do, islands off the east and west coast that we could get to; and then the helicopters or SA-16s or somebody would come in and get you out of there. We could fly a CAP over there, and we could get Navy support. They fired at you from the shore. In John's case they kept firing at him from shore, but we went in and got him out of there.

A: Did you ever do any night missions?

D: No, we didn't with F-84s. We practiced some, but we never did them. They were done with triangulation. Occasionally we would go north, and the weather would sock in, then we would get a radar fix, and they would say, "Drop on count"; we would be at altitude. They would count it down: "5, 4, 3, 2, 1, now"; and we would drop.

A: How accurate were those?

D: We have no way of knowing.



DRIESSNACK

A: How did you get your bomb damage assessment?

D: Photo recon [reconnaissance]. There was a recce outfit of F-80s and some -86s.

A: How good was that?

D: I thought it was pretty good. I looked at pictures quite a few times of areas where we had gone in. We relied a lot on our own intelligence coming back; the gun camera film of somebody behind you. "Did you or didn't you get the bridge?" The fellow behind you could tell you whether you got it or not and what kind of damage there was.

A: Did you do any "close-air support" in the sense that our main line of resistance would be here and you would be----

D: We came in on the back side of the front lines. We were called in and worked a lot with the front lines. In fact, we took turns going up to the front lines for a visit with the troops. I remember going to Old Baldy [Hill 266] before it was run over one time.

The Greeks were there at that one particular sector. There was an American Army lieutenant who was in a bunker on top of this hill. He was in an outpost ahead of the trench lines. We were amazed. I visited there with another fellow, Lt John Shay. We had trained together and gone over to Korea together. The Army lieutenant had that place like an arsenal. He had all kinds of rifles with sniper scopes and all sorts of stuff.

This was built in the ground out of huge trees, literally out of logs. He had built these small slits to shoot through. The disconcerting fact about it was that huge rats ran around that place at night. You could hear them, while you were up on the bunk, running around down on the floor.

You would look out these slits, and he would say, "Now right down there is a Korean," and he would fire down there. "His cave is just to the left of that. He comes out there and builds a fire and cooks fish or whatever he is going to eat. He is the guy that is sort of their forward post."

John said, "Hey, the guy is out there," so John picks up his rifle. The Army lieutenant and I were talking about something else. John fires down at him. This lieutenant jumps at him and says, "My god! Don't do that!" John said, "What's the matter? He is the enemy, isn't he?" He said, "Don't kill this fellow!" We said, "Why not?" "The last guy they had out there was a sharpshooter. I didn't sleep for a month and a half because at night he could put a rifle ball inside this slit, and he kept me awake all night long." He had zeroed in on this bunker. "I didn't sleep for 6 weeks until I finally got him, and this guy can't hit the side of a barn. God! Don't kill this guy!"

A: Isn't that funny how that kind of normal situation becomes absurd after a while?

D: That outpost was overrun later on. We thought, "Gosh, that is the end of our friend up there."

DRIESSNACK

Later on I saw him in R&R [rest and recreation]. He had been there, and they just ran right over the top of him. It was closed up; he boarded it up, and they just ran right over the top in some kind of crazed mood. I think he spent a few days in that hole. Finally, he got out. Unbelievable!

A: When you flew this close-air-support type mission at the bomb line, would you be guided in by a guy on the ground, or would you have a T-6 up there?

D: In our case we had somebody on the ground. We also worked with the T-6 further in, but most of the time we had a ground controller. One of the reasons we went up there was to talk to the controller about the tactics and things that we were doing. We were given the option of doing that, and we decided, "Hey, let's go on up there and talk to these folks."

About four of us got in an airplane, flew up there, and then went up to the front lines. It was a great experience. After that, we kind of knew who that was on the ground. When there was a T-6 there, they would fire a smoke rocket. The pilot would say, "The target is 50 feet to the left of that, or to the north or to the south." If he was a ground controller, he would fire a grenade at the target. You would point out characteristics on the ground. "There is a knoll; there is a single tree, and it is 50 yards or 150 yards north of that."

Generally we came in on the back side. Our artillery would arch over, so part of that back side of the line was always

protected. The Army couldn't get to it, so we came in the back side.

On two occasions I remember just walking the trenches; just go right along the ridge line with 50 calibers firing and go through the trenches, especially if they were having a hard time or there was a buildup coming. We would go after supplies that were being built up, and we would actually go after people that were out there; keep their heads down.

A: Would you actually see people in daylight?

D: We could see people because we flew at low level.

A: How much damage do you think you could do against their dugouts with the bombs you could carry? Was it better than our artillery rounds were doing?

D: I think so because we used 1,000 pounders that could give you a tremendous crater. I remember railroad tunnels; you wouldn't see a train, but you would see smoke coming out of a tunnel, so we would seal both ends of the tunnel up with 1,000 pounders; just lob it in there.

A: I have heard the expression "target fixation," where a guy would fly right into it. Is there truly a problem?

D: I guess there is that. In practicing at the gunnery range before we went over there, I had a good friend, a cadet, who flew right into the ground. No known mechanical reason; he just never pulled out and went right straight into the target. It was somebody who, "By George, they were gonna

DRIESSNACK

get it!" Get the bull's eye or something, and just went right into the target. Overseas in training we also had people who flew into the target.

We used to take new people when they came over, show them the terrain, and show them how we broke up and then went in trail and bombed things. We did a lot of that and a lot of jinking maneuvers going on around the target.

In one case there we had a young fellow who just kept rolling and went into the ground. We kept saying, "Pull up! Pull up! Get out!" He just went right into the ground, and we never heard from him. I don't know whether he blacked out or whether there was something mechanically wrong or what. I never saw anybody fly into the target on an actual combat mission.

A: Earlier you had mentioned this rotation problem. Was the expertise passed along, or did some squadrons find themselves trying to relearn?

D: I think the expertise was passed along as best it could be. Toward the end, people, as a kind of natural thing, get so they don't take chances, so you never got the benefit of what the really experienced guys could do as they did in the middle of their program or earlier. I was told I went too low when I got hit, but I figured I was going to get that bridge! As I say, that was the baptism of fire. I flew Pathfinder missions after that, first as a wingman and then leading the whole thing. I had some experiences there that you only learn from doing. That is where I learned you

don't come down the chute the same way the second time.  
Nobody really told me that.

A: You mentioned apparently there was some radar control over  
Pyongyang, but most of this was just optically sighted?

D: Yes. What we came against was mostly 37mm.

A: You ended up leading Pathfinder. Was this based on your  
navigational skill, or how does one get selected to be a  
Pathfinder?

D: I'm not quite sure how they did it. I ended up as a flight  
commander. They would give it to a flight commander. You  
go in on the target and come back out and meet the rest of  
the group, the rest of the squadron, and then you lead them  
in. You drop one bomb the first time and see what reaction  
you get, whether you are on the right target or what is  
going on there.

One time--I think it was the second Pathfinder that I  
actually led--I went in, and the bomb didn't go off. When I  
came back in again--hopefully you can still see some of the  
crater or see the area you had damaged--with that second  
bomb, I got all kinds of flak because here I was coming back  
down again. Had that first bomb gone off, their heads would  
have been down, and they weren't.

I have always told people in industry that story. The  
quality of what they are building is very important because  
people's lives are at stake. I said, "I got back from that  
mission, and I was looking for the SOB who built that bomb.

DRIESSNACK

It was a fusing problem, or I'm not sure what it was. I really didn't care, but somebody didn't put out a quality product."

Quite frequently when I'm in a plant and I see poor quality, I say, "I've been looking for the guy, and you are it. You don't care about the quality of what you are doing, but somebody else's life is at stake. If you are building munitions, it is only going to be used in combat; and if it doesn't go off, somebody is going to shoot back at you." If it is navigation or an engine or something like that, then other people's lives are at stake if it malfunctions.

A: They just got some company for building bad circuit boards on navigation. How can people be so damned scabby to put somebody's life at risk on something like that?!!

D: They don't understand it.

A: Maybe they think it isn't that important.

D: When I went around the plants later on after I got in the weapons acquisition business, I would talk to them about quality and about my own experiences. That kind of brings it home to them. I said, "It could have been your son or brother or father."

A: Are you familiar with this "hail"? It was steel-shaped bullets. They looked like tiny steel bombs. These were dropped from about 10,000 feet, and the terminal velocity was like dropping nails on people.

D: We never dropped anything like that.

A: Another thing they did in Korea; they had these tetrahedrons, triangular pieces of steel tube. They would drop them on roadways. The steel was hollow. Regardless of how they landed, one of the prongs would be up so truck tires and such would be pierced.

D: No, we never dropped those. Most of the roads we looked at were dirt roads, so if you cratered them, they could smooth them out with plows. It wasn't like hitting concrete or reinforced steel.

A: You said you went up and talked to this lieutenant one time. Was the Army, to your understanding, pretty happy with their air support in Korea?

D: I thought so, especially when we went up and talked with them. You sort of established a rapport and understood what their problem was or what they were trying to do; then they could understand what we could do.

A: Were you involved in that reservoir dam?

D: That was before I got there in June 1953. I think that was the napalm area where we lost our people. All the people, all the hords of folks that they had; they ran very low-level napalm runs, and I never did get on that. I remember them running those later on, and we were losing an airplane a day.



DRIESSNACK

A: What about the training that you got in the States prior to coming over? Was the training an honest reflection of what you were going to find yourself doing over there?

D: I thought our training was good. I went to gunnery training in Pinecastle, Florida. The peninsula of Florida looked like the peninsula of Korea, so you saw the water on both sides. You had about the same distances, and we flew low level. We had some Korean veterans as instructors. We talked about flying abreast and the environment there. The only thing we missed, of course, were the mountains. We weren't prepared for the mountains. We had all flat terrain in Florida, and we saw mountains over there. It is quite different flying over that terrain. Everything looks exactly the same.

A: What did you know about guys who were shot down and were POWs in Manchuria or North Korea? Did you know how they were being treated at the time?

D: No.

A: By this time there had been some broadcasts by American pilots on this germ warfare thing. Do you remember that?

D: No.

A: How did you feel about the philosophy of the war that was being fought over there; the tremendous amount of time that had been spent on those truce talks at Panmunjom and the war being stalemated? Among your fellow flyers was this kind of an accepted state of war, or was there anybody who would

have liked to have seen the war brought up to World War II level? How did you feel about the war itself?

D: We talked about that some evenings. I don't think anybody cared for the stalemate. I didn't find too many of our folks who did. We wanted to somehow bring it to a successful victory. We had the airpower. We never got chased anywhere in any of the missions I was on. We had absolute control of the air.

The -86s were having a heyday up north. The -29s and B-26s were flying at night on missions. Clearly the Army could have marched north, I felt, but politically we were stopping at the 38th Parallel, and that is where we stayed. We came back to that.

In a country divided politically like that, you are going to have problems. You have the same language and same people but political division. You just can't have that. You are going to have this fermentation that goes on for a long time. It happened in Southeast Asia. Germany is another hot bed. You just can't split countries like that. It doesn't make any sense.

A: Did you ever fly any MIG CAP yourself?

D: No.

A: Were the B-26s mostly used at night?

D: They did a lot of night flying. They were used other ways but mostly at night.

DRIESSNACK

A: Was there ever any North Korean or Chinese air that came down over South Korea?

D: The only thing we had was Bedcheck Charlie. I remember Bedcheck Charlie on two occasions. I was at Seoul, and he came over there one time. Another time he came down almost as far as Taegu. We had an air raid warning.

A: You had mentioned that as far as air/sea rescue, the Navy was there to help out. Did you ever fly any missions with Navy air, or were they given part of the country, and you were given part?

D: They had their own. The Marines had an outfit up at K-3, but we never flew with them. They had their own targets, mostly in support of the ground Marines.

(END SIDE 1, TAPE 2)

D: Because of weather, we once diverted into K-55. I had a flight of eight. We went into K-55 and couldn't get back home. We were at the club one afternoon; you have nothing but your flight suit, so there is not much you can do. You sleep in bunks of people who are either on R&R or in Japan on training. My flying school roommate, Jim Gregg, was stationed there, but he was over in Japan at the time, however. This was an -86 base. The SAAFs [South African Air Force] were there flying -86s, and one was shot down.

When they came back, they all came to the bar and were talking about this. I remember them saying, "He will be all right; he's good in the woods. Don't worry about him."

Evidently he had made contact with them when he hit the ground. He parachuted out, and they figured he was going to get out. I don't know whether he ever came out or not, but they had a heck of an attitude. They were good pilots. We loaned them the airplanes, and they provided the pilots. They were a good group of guys and did a good job for us.

A: Did you feel that the B-29s were doing anything in Korea?

D: We would hear about the -29s on major targets, but I'm not sure whether they had a target to close a city or something like that, but we never got to that point.

A: Sometimes you get the impression they were being flown just to keep the Far East Bomber Command and SAC not necessarily in the headlines but to show they were doing something in a limited war. How were the enlisted people and enlisted maintenance crews in Korea?

D: We had a good group and good folks. The airplanes were maintained pretty well. When you are in combat--and the closest you get to it in the States was my tour in SAC later on--people have a mission; they understand the importance of it, the seriousness of it. When something went wrong with the airplane, they were excited.

When I got that first hole in the airplane, I came back, got out, and looked at the hole with the crew chief. They had it fixed by the next morning; had a new aileron on there. They were going to repair the aileron that they took off. I think the crew chiefs were really concerned.

DRIESSNACK

The Air Force is different than the Army or the Navy in that the officer is the combatant, and the enlisted man stays home. The guys sit there and wait for their airplanes to come home, and they count them. They look at them landing and count them, then they see their number rolling down the runway, and they know everything is okay. There is a concern on the part of the enlisted guys about their airplane; making sure theirs gets there and so forth.

If you come back and the bomb wires aren't there, as an example; there is a wire that should stay on the pylon. It comes out of the fuse and permits the fuse to rotate, spin up, and the bomb to go off. When you jettison, you jettison the whole thing, wires and all, and the bomb drops safe. If you drop something safe, you have got a problem, so they always looked for the bomb wires to make sure everything worked, and they are concerned. I found the whole time I was there that they were concerned about their airplanes.

A: Was this one-year tour of duty about right in Korea?

D: It is hard to say. You are young and have a young family, and you want to get back. I guess that's not bad. The problem is, they rotate out people sometimes en mass. All of a sudden you go in there with 40 or 50 pilots, and they are all new. We all came out of flying school and went over there brand-new. Luckily there are people who have been there a while and have some missions under their belt so you don't get an entirely new squadron. That is probably the best way to do it as opposed to taking over whole new squadrons. Just feather them into the squadron where you

have some combat experience with the people, and there are some people that can train and so forth.

A: Did you have any World War II pilots?

D: Yes, we did. The commander was World War II, and I think the ops officer was. Over 95 percent of them were young lieutenants, young pilots.

A: There was a Col Charles Reed, Maj Jack Webster.

D: They were World War II.

A: The 58th Wing CO was a Col Victor E. Warford. These were professional military by this time. They hadn't been called back, had they?

D: I think Webster was called back.

A: Did you ever notice any bitterness on the part of these guys?

D: No; they all liked it. I noticed that in flying school, too. I went through a contract civilian school, but these were people that were World War II pilots, and they had been out in all kinds of other businesses. They all loved coming back to fly; a lot of campfire stories. Webster really enjoyed his flying and liked getting back.

One thing I remember that was kind of strange to me, and I never heard anything more about it; we had a valley up north where there were lots of boxcars on a railroad. If you were

## DRIESSNACK

brand-new and flew over, you saw these railroad tracks. It was kind of a marshaling yard, and there were these trains, but it was down in a valley. Every once in a while somebody would go fly down. If you were coming back from up north and you saw this target of opportunity, you would go down and take a look. They would call in fire from both sides of the hills on you. It was like a shooting gallery. They always warned you about not going in that valley, Death Valley. We were not supposed to fly in that area.

On the other hand, we never knew what was in those cars. I don't know whether they were empties, decoys, or full of actual munitions. That was something the -29s could have wiped out, but I never heard of them doing that. One time the wing commander, Col John Loisele, and Webster went down in there. They were happy as a lark. You could hear them on the radio saying, "Hey, man! This is great sport!" They were firing up everything. The other guys were saying, "You better get your butt out of there!" A lot of fire; they could care less.

They had taken some pills; I don't know what they were. The best I could think of was that they were like tranquilizers. I'm not sure why they would let somebody fly with a tranquilizer, but they called them "couldn't care less" pills. The guys went on and flew these missions, but it was only the commander who did that. They never did give them to anybody else.

A: I have never heard of that. The only time I have heard of pills was in World War II in the Pacific when they used to give the equivalent of No-Doze, only stronger, to keep

pilots awake, especially on P-51 flights that used to go up to Japan from Okinawa. It was such long single-engine flying that they would take stay-awake pills. That would be a hell of a note to think you were bullet proof.

D: It happened just before the end of the war.

A: Did you ever use rockets?

D: Yes, we used rockets.

A: How did they fire?

D: Not very good. They were inaccurate, and there were lots of duds.

A: I have heard they would get cold soaked as they got up to altitude. Were there other problems?

D: I'm not sure what the real problem was, but we had 5-inch rockets, and they were duds. We used them for markers quite a few times, and then we used them in some other areas; but on some of the missions we went in with rockets on the wings with poor results. On one mission where we had rockets, everybody came back really disgusted because almost every other one was a bad rocket.

A: Were most of your strikes preplanned, or was there a lot of trolling?

D: We had mostly preplanned.



DRIESSNACK

A: Another thing I heard: Air and air/ground communications had not improved since World War II; that you only had four channels on your aircraft. Was that true?

D: That is probably true.

A: In fact, Partridge was so disgusted when we interviewed him years ago, the minute we said "Korea," he said, "Even from World War II the US has not changed. You had four push buttons on your radio." He was still upset about that.

D: We didn't have very good communications. One of the reasons I thought it was important to go talk to the folks on the front line was so that we had an understanding of what the mission was all about. They understood what our capabilities were, and we could talk to them. We worked out an arrangement with them. I think that it should have been mandatory that we have this exchange. We did this on our own.

A: My impression is that it has always been "on your own." There has been no program set up to do that--Vietnam or wherever.

D: One would think over the years we would have learned that the most effective way to do it is to integrate that group and get them talking to each other. You really have to understand what the other guy's problem is. He was down there, so we went down there. Let me tell you, when you spend a night in that bunker up forward, you begin to appreciate what that GI is going through.

A: What about the equipment over there? We talked about the rockets misfiring. Was the Air Force equipped to come over and correct that kind of thing? Was the Air Materiel Command responsive in that sense?

D: The heavy maintenance was done in Japan, so we flew airplanes to Japan for periodics and heavy maintenance. If you got in trouble and decided, "Let's get out of here," and we were told to jettison the tanks--"Blow the tanks and get out of here!"--we left. When you jettisoned the tanks, you had to buy your crew chief a case of beer. It was a big problem putting them back on. Also, they were sparse around the area.

Later I flew some airplanes to Kisarazu [Japan] at the end of the war where they were getting ready to bring them back home. They put them on top of carrier decks in cosmoline. We got over to Kisarazu and saw acres and acres of tip tanks! We thought, "Here we have been sweating this out all this time; my god, here they are! Never got to Korea!"

A: There was quite a story about fuel tanks at the start of the Korean War. They were not available, and they were airlifting them over. There was a big to-do. Even towards the end there was probably this atmosphere built up that they were still scarce. I thought that had been solved early on.

D: There were loads of them in Japan. We were very cautious about jettisoning them in Korea.

DRIESSNACK

- A: The year that you were there, did the air defenses of the North Koreans seem to get a little better, or did you find yourself getting in situations where their accuracy was better? You mentioned the radar-controlled guns. Did the danger increase as time went on from the ground fire?
- D: Based on my own experience, I got hit on the fourth mission, and I flew 21 more and didn't get hit. From a personal standpoint, their accuracy didn't get any better. We had pretty good intelligence. When we got target intelligence, we figured out how to approach the target and also an alternate of where to come in just in case something was wrong. We kind of knew where the placements of the guns were.

In fact, that one mission we flew on the bridges at Sinanju, there were strikes by other flights that went in on the gun emplacements. They actually went in on the gun emplacements that were protecting these bridges. They were busy keeping their heads down or being wiped out while we were working on the bridges. I was busy.

If you are coming in at 50 feet, which is where we were, there were automobiles, people, bicycles, and trucks; and you are coming lickety-split as fast as you can. We had that throttle bent. I remember pulling up from that target and "redding" out, not blacking out, but redding out where you are conscious, and I wanted to get as much altitude as fast as I could. I kept easing the stick forward a little bit so I wouldn't completely black out. You wake up; you get your eyes open, and I remember seeing the lead out there somewhere.

A: How fast could you get that F-84?

D: It was .8 mach.

A: Was that a pretty reliable airplane?

D: Yes. We had the "Gs," and they were good, reliable airplanes.

A: Was it the "D" that went to the swept wing?

D: The "F." We never had those in the war over there. They never showed up for the war.

A: Were they still using the F-80s for anything over there?

D: Just photo recces in RF-80s. When I was there, they were not in combat. We had F-84s and F-86s.

A: Did you tend to fly the same area in Korea?

D: No, we flew the whole peninsula.

A: There is a history of the Korean War that says: "In the face of unrelenting air attacks, the Communists managed to keep their front-line troops combat effective." Does that say that air interdiction works to prevent them from going on the offensive, or where does that put air interdiction if the Communists could maintain combat effectiveness, or am I saying that they really couldn't; that it was only our lack of aggressiveness on the ground?

DRIESSNACK

D: Yes, to the latter; the best defense is a good offense. Had we launched an offense, I think it would have been a different story. We chose not to go beyond the 38th Parallel, so the fact that they were there, that's no big deal. One of the things, as late as we were; we were there during the last part of the war, but we were actually looking at bridges that were submerged. I think it was during the period of time that I was there that we finally discovered that. Somebody looked down and saw the glint of light just as the sun was right, and they saw the bridge down under the water. You would see tracks coming down in the daytime; they would go to the water's edge; you would see them on the other side and say, "How did the guy get across the river?" It was a muddy, murky kind of river, but somebody actually saw in the sunlight that there was a bridge there, so we had bombed the water. You would see wood splinters and all kinds of stuff flying up out of the water.

A: Did you fly the whole year you were there?

D: Yes. We flew the whole time, and we trained.

A: When you say you flew 25 missions, what counted as a mission?

D: Going north and hitting a target.

A: You flew 25 missions in a year's time. Is that saying you only flew two a month?

- D: No. The war was over in June 1953. From June through the rest of the year, we were there, available, and sort of a deterrent. From June on, we flew; we just trained. We had competition among squadrons. We went up on the bombing range and had bombing competition or high-angle strafe competition. New people were coming in, and we were training them on the terrain and so forth.
- A: You flew your 25 missions in 3 months. How many missions would some of these guys get in a year's time?
- D: It was 100 or 1 year. It generally took them a year to get their 100 missions.
- A: What was the survivability of those 100 missions?
- D: I think it was pretty good. I didn't hear too much about folks that didn't make it all the way through.
- A: I saw a show the other night on PBS about the 8th Air Force in World War II. They made the statement--I don't know if it is accurate or not--that only 1 in 3 aircrews could make their 25 missions.
- D: They made it 15 at one point in Europe because of the survivability. Well, the Germans had a lot more air so you had fighter air opposing you. We actually did have command of the air. That was no problem.
- A: Were you ever told that there were Russian pilots flying North Korean aircraft?

DRIESSNACK

- D: No. I think we knew there were Chinese, but we didn't think much about it.
- A: Like you say, you never really run into any air-to-air problems. Was this kind of anticlimax now that the war was over? Did you find yourself getting bored over there?
- D: We had to find things to do to keep people from getting bored, so we had competitions between the squadrons. We did that within the wing; and we were training the folks that came over. On our training missions we would fly up towards the front, especially with the new people. We would show them where the front was and areas where they shouldn't wander over; but just to show them where the war was and what that line meant. You could see emplacements.
- A: Was there any photo reconnaissance being done over North Korea?
- D: Not by us. There was a separate photo recce outfit.
- A: In that time period that you were over there, the 9 months or so after the Armistice, was there ever a time when it looked like the war was going to get ginned up again?
- D: One of the things that kept me active immediately after the war was over was the Neutral Nations Inspection Team, a NNIT team they called it. It was made up of the Swiss and the Swedes from the west and the Poles and Czechs from the east. The common language they spoke was German, so they went through the records and found out that I understood and spoke German. I served as a member of that escort team.

The mission I had was to listen to the conversations and see what was happening. When they spoke together, they spoke German. If they were in any kind of pow-wow or conversation between both sides, sometimes they spoke native languages to each other; but the Czechs and the Poles spoke a different language, and they had to find a common language to speak to each other.

It was interesting taking them around. As we brought airplanes in, they wanted to see them, especially the -86F, which was a hard wing/swept wing. We had a slotted wing, and this was the hard wing. The NNIT representatives were not allowed to get in the cockpit. They could look at the airplane. We always had APs [Air Police] with us. They were in the jeep ahead of us and the jeep behind us.

I remember this one Czech colonel that wanted to see the F-86F airplane cockpit. I said, "It is unauthorized, and you can't get up in the airplane." He sort of brushed me aside and jumped up on the ladder. I said to one of the APs, "Shoot him!" The AP actually cocked his rifle, and he came back down. You could hear this click-click, and we dragged him right back down. He hollered something about "he had the right." I said, "You don't have any rights when you are on my base."

They had BX privileges and all that sort of stuff. They went there and bought all sorts of things. We showed them everything. The most fascinating part of that whole exercise to me was when some World War II Navy Corsairs came in. They had never seen Corsairs. Here was a gull-winged airplane with a huge engine and prop out front. Of course



DRIESSNACK

they were still flying props in Russia. They wanted to see this airplane. They thought it was a new kind of airplane, and I just let them believe it. I said, "I can't talk about that airplane." It got to be a game, and we just carried that on. Well, they took pictures like you wouldn't believe of this airplane. I'm sure they thought they had something.

A: You would think they would have been more sophisticated than that.

D: But they weren't. That got back, and I don't know whatever happened with that. Then we were doing a lot of work with JATO [Jet Assisted Takeoff]. They were actually out there clocking with a stop watch how long it took to take off an F-84 with JATO. They were in base operations, which was on one side of the field, and the fighters were all on the other side of the field, and there was a common runway. It was a real interesting exercise going through that.

The NNIT teams up north were never allowed out of the compound. They were kept in operations. They could look out the windows and so forth and see airplanes taking off and landing, but they were never allowed to wander around like they were supposed to have been, which is what our people did.

A: This strikes me as being familiar. They had the truce teams in Laos and Southeast Asia in the 1950s and 1960s. The Americans and the South Vietnamese and everybody else would adhere to the spirit and the letter of the agreement. They would go up north to Hanoi and not see anything. This BX

thing sounds familiar, too. That was the greatest benefit of getting on one of those teams.

D: That sort of kept me occupied, but the troops were having a hard time. It is kind of tough with no mission except just training. They came over to fight a war, and the war was now over, and they were still there. We had to innovate some things to instill competition. We even had ground fire competition. We went to target ranges and had rifle practice, 45s, grease guns; everything we could find. We tried to develop some sort of esprit or some sort of competition in what we were doing there. In training, we said, "Well, the thing may blow any day, so we have to be prepared." We practiced quite frequently.

A: Were there many line-crossers, guerrillas, in the south at that time?

D: We were always suspicious of some of our people. A lot of the indigenous people that worked on base came from the north. There were bankers and lawyers and so on, and they worked for us. There was one banker who did our art work. He painted the emblems on our helmets and things like that; sorry to see in some respects. We had some good carpenters; people that were skilled in their own way but had very primitive tools, but by god, they got the job done.

A: I heard that after World War II you would have some Luftwaffe colonel fixing trucks in the motor pool just to put butter on the table. Did you ever have to deal with the South Korean Air Force at all in training, orientation, etc?

DRIESSNACK

D: No.

A: When you left Korea, from 1954-58 you were flying SAC fighters. Was that much of a mission?

D: Yes, SAC fighters. SAC is a whole different world. SAC had a mission. This was when LeMay [General Curtis E.] was the commander. By George, we knew we had a mission. The -84s, the fighters, carried a Mark VII, a nuclear weapon. We had targets that we had to go to that took several in-flight refuelings. It was serious business. If you didn't think so, just bust an ORI [Operational Readiness Inspection] or something to let you know how serious things got.

I think everybody in SAC had a sense of mission. The bulk of the pilots that we had came out of Korea. In fact, a lot of my outfit came back to SAC fighters. When we got orders to come home, SAC had five fighter wings; and our folks came back to a new one being started, the 407th, at Great Falls, Montana.

A: Were you going to deliver these bombs with that LAB [Low-Altitude Bombing] maneuver?

D: Yes.

(END SIDE 2, TAPE 2)

D: To me, SAC was kind of a maturing ground for a peacetime operation because we trained with a sense of mission in mind, and everybody had a mission. I never saw anything like that or since. Maintenance had a mission; Operations

had a mission. No matter who you were, guys had a sense of mission about them. We were soon deployed to Misawa, Japan.

Six months after we got home from Korea, we went TDY overseas for 90 days. The mission over there was really patrol. We flew patrol up along the Sakhalins area. We had -84s overseas that were taken over earlier by in-flight refueling. SAC went across the Pacific and pioneered in-flight refueling. They did Fox-Peter-One going across the Atlantic the same way, and then they did the Pacific--earlier SAC fighter wings. The airplanes were left there, and then they rotated crews in and out and used those airplanes.

Our maintenance had deteriorated down to nothing. I had an engineering degree. The squadron commander called me in and said, "You are going to become the new maintenance officer." I was a lieutenant. Well, I took this over. There was a real problem between the crew chiefs, the line chiefs, and the officers; the maintenance officer in particular. I took this over, and I could just see them waiting for me in the maintenance shack. These guys were all master sergeants then; they had 20 years of service. The only thing I had going for me was that I did have a combat tour in Korea, so at least I looked like a fighter pilot to them. These guys had been in World War II also.

I went over and sort of made peace with them; told them what I thought the mission was, what we had to get done, and I needed their help. We set about doing it. We ended up on top of the heap. We came home, and I remember our squadron flew more than the other two squadrons together; so I got

## DRIESSNACK

appointed to be the wing Job Control Officer and took over the wing maintenance. That is when I got an appetite for management system things because everything in SAC gets scheduled.

You have to figure out: How do we use this bomber scheduling system and preplanned maintenance in a fighter environment where we fly several missions a day on the same airplane? It's not like flying a bomber once every 3 days. We used to fly two or three missions a day on the fighter; just kept turning them over. We figured it out, and we worked it in the system.

I worked out a system we used to call "Whitey's Ouija Boards" in maintenance where half of the flying time was left on the airplanes all the time. As we worked across that board and pulled airplanes to go to periodic or field maintenance inspection or TCTO [Time Compliance Technical Order] inspection or what have you, we always made sure that things were in this step function so that we always kept half of the flying time on the fleet because we might deploy at any time. If we deployed, we wanted to make sure everybody wasn't scheduled for a periodic inspection. We had to have airplanes with 100 hours on them so that we could get our deployment out. I thought that was a good assignment. We deployed to Alaska after the Misawa trip. From then on that was our mission.

We got new airplanes, -84Fs, really a maintenance nightmare; a J-65 engine. We started out with 25- and then 50-hour inspections on that engine. It was really in bad shape. It was a British engine that was built here by Curtis Wright.

It was loud; had terrible harmonics. I'm deaf in the left ear; about 90 percent gone, due I'm sure to that. We never wore headsets on the ramp. We just hollered at each other. The harmonics were such that you couldn't stand it out there. You had to run the engine up to 65 percent to get over that certain harmonic. It was a very tough flight line to work on, but we did well.

I kept records of everything. I remember going to a conference at Brookley Field in Mobile, Alabama, MOAMA, which was the depot for the -84. We were changing the Dash 6, the inspection requirements, and I was the only one who had kept any records. I said, "This engine should be able to go to 100 hours instead of 50. Here are the records that I have." In fact, I took those same records with me and wrote a paper at SOS [Squadron Officers School]; that was my staff study paper. We gave the records to MOAMA, and they called Middletown, which had the engine; and they didn't have any records. Based on this young lieutenant's records--mine--we all made a decision that we would go to 100 hours between periodic inspections.

Well, TAC [Tactical Air Command] picked it up and Training Command picked it up; and SAC Headquarters finally asked, "Who did all of this? Why was this being done?" It turned out that SAC had designated 15th Air Force as the representative, and 15th Air Force designated the 407th as the representative, and I was the designated guy to go down; so essentially I represented SAC.

I called my Director of Materiel, who was a colonel at the time, and told him what I was doing and why. He said, "Have

DRIESSNACK

at it," so we did. Later on SAC questioned this whole thing: What was the authority for doing this? I said, "The depot did it," but they did it based on SAC's recommendations. They couldn't quite catch up with who was really responsible. All of a sudden everybody's flying time doubled because now we had 100-hour periodic inspections. Well, it turned out to be the right thing to do.

A: Was everybody just reading the tech specs [Technical Specifications] and saying, "Well, every 24 hours you have got to do this"? Nobody had bothered to go ahead and track that thing out?

D: Yes. It was a new airplane and a new engine. One assumes the depot is going to keep records, but they did not, but I kept records. It turned out I had the only records that had been documented.

A: Would you simply let your engines go beyond that recommended time?

D: No. I kept them for the 50 hours, and I kept a record of what was wrong with the engines. We were breaking more things taking it apart than we were fixing. I was waiting for supplies. I kept waiting for bolts, washers, and things like that. When we got inside to take a look at it, nothing was wrong. We were running soap checks and all sorts of things. It turned out we didn't really have a problem. We took a look at all the blades and so forth internally and buttoned the engine back up again.

Well, if you do this so many times, you start keeping records of what you are doing, and that is what I did. There were some line chiefs there, master sergeants that had come to the meeting with their officers, and they said they had about the same experience but no one had any documentation. I had documented this. Based on that, Mobile decided to go with it.

A: You would think that kind of documentation would be done by the company. What was the glitch that Curtis Wright wasn't up to speed?

D: They eventually asked everybody, and they said, "Yes, we think it can go," but there was no documented records. It was my records that precipitated the action.

A: I'm of the old school that if the thing is working, you don't mess with that.

D: "If it ain't broke, don't fix it."

A: I'm very much in favor of that. I guess you can't do that with airplanes, but years ago I used to be in electronics, and boy, if that thing was sitting there cooking away and working nicely, the last thing I was going to do was pull those tubes out to make sure they were working.

D: We broke a lot of things just taking it apart, pulling them out, and so forth. We spent more time repairing that than we did working on the engines.

A: What finally drove the F-84 out of SAC?



DRIESSNACK

D: The B-47.

A: Even by this time, the middle and late 1950s, B-47s were already by the thousands in SAC!

D: We came into SAC in 1954-58. In 1957-58 they were getting -47s. We still had -84s, but we went to the -47 bases and flew the bomber pilots in the back seat of a T-bird and taught them LAB maneuvers. They were going to do the same thing with B-47s.

A: Was it 1956 when the first B-52 came in?

D: I think they came in about then, but those people had to get trained, and that takes a while. Meanwhile, we were still there with the overlap. SAC started phasing F-84s out. When I left there in 1958, SAC didn't have any more. I went to AFIT [Air Force Institute of Technology] from there, so I was one of the last ones to leave.

A: You were at SOS; what was the thrust of SOS in those days? Was that worthwhile?

D: I thought it was worthwhile. I got a lot out of SOS. I had taken SOS by correspondence in Korea. Going to school is so different from the correspondence. I don't even know why we have correspondence; it is completely different.

A: I took Air War College [AWC] by seminar, then it suddenly dawned on me a lot of the Air War College students I knew had taken AWC either by correspondence or seminar.

D: There is really a big difference. I enjoyed the competitive part of the athletics, the problem solving, the lectures, and so forth. I thought I learned a lot. It is good to get the mixture of folks. I have a son who just graduated from SOS. He is at Wright-Patterson [AFB OH] now doing program management.

A: Is he going to make a career out of it?

D: It looks that way. He was an industrial engineer out of Penn State, and he wants to go get his master's. He is really into it.

A: You went to AFIT in 1959. Was it business admin?

D: I got an MBA in engineering management. This was a course set up at AFIT by Schriever [General Bernard A.]. This was the beginning of the missile era and the formal beginning of the system program offices [SPOs]. He was looking for people with technical backgrounds, and he wanted to give them a business degree so that they would have a broader scope in the acquisition management business.

There were two courses set up; both were MBA courses at AFIT. You had to have an engineering degree or be an Academy graduate to get in it. I got accepted in that course earlier. SAC wouldn't release me. Finally when we got rid of the F-84s, then I went to AFIT in the Class of 1959. It was 18 months; two 9-month terms essentially back to back. I was in the one that dealt with engineering management. The other one had a lot of procurement courses in it.

DRIESSNACK

General Larry Skantze was in this same program at the same time. He was in the procurement side, and I was in the engineering management side. I went from there to the SPOs at Wright-Patterson. I was in the C-133 WSP0, Weapon System Program Office; and then the C-141 SPO.

A: That -133 wasn't in the inventory very long.

D: We built 50 airplanes. It was a huge airplane, turboprop, and it was an old turboprop that was directed to go on the airplane. McDonnell Douglas built the airplane, and it carried one heck of a load. We never had anything to compare to it until the C-5 came along. The C-141 was not as big as the C-133, and it didn't carry the load. It had a big box in the back. I was on the -141 program from the very beginning; helped write the statement at work that went out, worked on the source selection, was in the first cadre in the SPO. I was in the program control.

A: Going back to the -133, you say the problem was the engine?

D: It was an old engine. It was a J-57 turned into a turboprop. It was an old design that had been around a long time. When the airplane was built, the engine was directed by the Pentagon. They said, "That is the engine you will use." We never developed a turboprop engine for that airplane, unlike the -130 where they actually did develop an engine.

A: Was there any attempt to re-engine the aircraft?

D: Not then; we never did. We built 35 "As" and 15 "Bs." They carried one heck of a load. They pioneered some things on that program. I think it was the 262 system where one man could actually push on the whole back end that was on rollers, push it off; one man--82,000 pounds. That same system got incorporated in the -141s and C-5s later on.

A: You were on the -141 when it started out?

D: Right.

A: Who really pushed for that airplane to be developed?

D: MAC [Military Airlift Command] wanted and needed a new cargo airplane. General Holzapple [Joseph R.] was the commander at ASD. We designed two airplanes at Wright Field. One was a jet, and the other one was a turboprop. The turboprop outperformed the jet aircraft as far as fuel specifics, landings, and takeoff distances were concerned.

I remember Holzapple telling us, "This is going to be an all-jet Air Force, and we are not going to have any more props." That was a mistake, I felt, because we let the whole turboprop area get away from us. In fact, it is a much more efficient power plant than pure jets. We got into turbos; we eventually got into turbo-fans, which, from the fuel specific standpoint, was much more economical to operate.

The first turbo-fan was on the -141. That became the JT-3D commercial fan. That was developed by the Air Force. It was a lead-time development with both General Electric and

DRIESSNACK

Pratt & Whitney. It resulted in the first fans going commercial. The JT-3D and a JT-8 came out of that TF-33 development that was on the -141.

A: I have heard that General Momyer [William W.] wanted no more propeller driven airplanes in TAC.

D: Nobody in the Air Force leadership wanted anymore propellers.

A: Was it simply that they thought jet engines were easier to maintain or less expensive over the life of the engine, or they just thought jets were the wave of the future?

D: My guess it was the later. When Jones [General David C.] got to be the Chief, he got rid of all the props we had in the whole Air Force, and the Navy took them all. We still had some -121s, -118s, and -131s around; and he got rid of all of them. The Navy just took them. The leadership wanted an all-jet Air Force. That is the way we went. Now we are looking at unducted fans and new turboprops with different kinds of configurations, but where are we? Counter rotating props and turboprops have been used by the Russians for some time; the Big Bear is a very efficient machine.

A: Where does the Air Force sit while we are talking on the subject? They have developed that terribly radical propeller driven thing where the propeller looks like it is bent back. What is that?

D: That is the new turboprop that we have. There is another version that is called an unducted fan. It is big fan blades that don't have the ducting around them; GE has it. Pratt & Whitney has a new engine and Hamilton Standard has built a new propeller for it.

A: Did you work for a Colonel Hammond?

D: Max Hammond.

A: I have a note: "The procurement authorization on the -141 was 61AL13, dated March 1961." This note indicates you worked closely with MATS on that airplane. Did the Army have any input on the -141?

D: Theoretically, FAA [Federal Aviation Administration] had input. Of course we talked with the FAA people; they came out to Wright Field. We were supposed to take care of the Army airborne, but they were supposed to design equipment that could fit into a box like this. The -130 was 9x10x40 feet long. The -141 got to be 9x10x70 feet long. Since then we have put a 120-inch plug in the center of it, and it is much longer. It is still only a 9x10 opening to get into it. You have those peddle doors in the back so you can use the whole 9x10.

Well, the -133 was something like 12 feet wide and 90 feet long. You drive in. The C-5 goes up much bigger than that, but we are confined with that 9x10 feet box, so the pallets had to be designed to be that size, and vehicles supposedly were designed to be that size so that you could run things

DRIESSNACK

in side by side or they could fit inside the box.  
Unfortunately, sometimes that doesn't happen.

For instance, you could put two jeeps in side by side. The new Army jeep is an inch too wide. You can't get two of them in side by side, which is crazy. They say they are air transportable. The designers of anything that is going to be airborne should look at that box and say, "Here is what we have to work with. Now build it within that."

A: Jumping ahead just a second, someone once said that with the C-5 program one of the problems Lockheed had was that they thought it was just going to be a bigger -141, and it was an entirely different airplane. Was there any of that problem when you were working on the -141; that some thought it would be a bigger C-130 with jets?

D: No. It was a completely different design. We had a swept wing, and the -130 was designed out in California, and the -141 was designed in Lockheed, Georgia. It was the first design they really did on their own in Georgia. The -141 was designed to be a work horse, and it has turned out to be a work horse. We did a lot of things early in that program.

I remember calling the IG at Norton [AFB CA] and asking him to come in and give us a briefing on problems that they had with cargo airplanes. I was a fighter pilot; I didn't know much about cargo aircraft. I was assigned to program control early in the program so I was kind of taking the initiative in getting some things started. When the IG came in and talked to us about the cause of accidents and the greatest cause of in-flight fires, lo and behold, we had

some of these designed in our airplane, so we took it out. It helped a lot to do the homework up front. We developed a very good rapport between the SPO and the IG.

By the way, we were the first system program office under the new concept that General Schriever had developed, the self-contained SPO concept. The TFX [Tactical Fighter Experimental] was supposed to have been the first, but when Kennedy came in as President--he was inaugurated in January 1961--the C-141 was the first major program that he bought off on. It put a lot of jobs in Appalachia, and he was paying off some political promises that he had made. We got the go-ahead, and we went. We pioneered a lot of the management systems and techniques on that program because we were the first.

A: You mentioned that you had designed in there some of the problems that were known. When you say they were designed in, did Lockheed design that in?

D: Yes. For example, the greatest cause of in-flight fires, as I recall that briefing, was the difference in material in the wires and the terminals; that is, the metal was different; copper, aluminum, brass, iron. Given the right atmospheric conditions, you could get sort of an electrolytic setup that would cause sparks and cause fires. If you had any loose connections, you would have a problem. It turned out we had copper terminals in everything, and at one time there were copper wires, but when they were lightening the airplane, they went with aluminum wirings throughout the wings, but nobody ever changed the terminals.



DRIESSNACK

We said, "Hey, here is the biggest problem they have with in-flight fires," so we changed those things around.

A: Were you physically located at the factory?

D: I was at Wright-Patterson.

A: How close could you work with the company?

D: Very close.

A: Could you walk into the company and say, "This is wrong," and they would have to account to you, or did you have that authority?

D: In the program office you have as much authority as you want to take; you pay the bills. You are responsible for reviewing the design. We participated in the preliminary design reviews, critical design reviews. We were responsible for accepting the airplane. My particular job was in the Program Evaluation Division, and I was in charge of the schedule. For that I developed a network that had 8,000 activities on it that integrated the entire schedule for the airplane, engine, and everything that went into it; all the avionics and what have you. It was the first of its kind in the Air Force.

Minuteman had tried something like that, a PERT [Program Evaluation and Review Technique] network sort of thing, but theirs got so bogged down with minutiae that it wasn't workable. We actually used ours and updated every 2 weeks. We briefed Colonel Max Hammond, the program director, every

2 weeks on what was happening in the program. He didn't let anything go on in the program without putting it on that network. He said, "Take it in and let Whitey PERT it." We used that as a management tool for everything that went on in the SPO. Critical paths would change, and we always had what we called our 10 critical problems. They came off that network, and that was what the engineers or procurement people were working. Engineering problems would first manifest themselves in a schedule slip someplace.

Generally, as I have learned since then, if you have a technical problem someplace, or any kind of a problem, it will manifest itself; first, in the schedule slip. Something won't get done. Then it will eventually become a cost problem. If you wait to see the cost problem, something has already happened over which you have long since lost control. I always believed the old adage, "Time is money"; but if you could control the schedule, we could in fact control the cost ultimately in what was going on. It turned out that was the case. We brought that airplane in on schedule and on cost in the R&D program, and it just went smoothly. We did a lot of work with the contractors, with the suppliers, and everyone involved.

On integration we showed everyone what we were doing. We provided the integration for them, and we constantly worked the problem. I spent a lot of time at Lockheed on the factory floor and got to know that operation very, very intimately and learned just how that airplane was coming together.

DRIESSNACK

A: Was the Office of the Secretary of Defense, DDR&E, or the other systems analysis people in DOD involved with the system?

D: No. As far as I was aware, we didn't have any of that. We went to Systems Command Headquarters, and essentially we were left to run the program.

A: What about Congressmen? As things developed later on with the TFX and the C-5, it seemed like everybody and his brother got involved in it.

D: We ended up with a good program. There was support for the program, which is another thing. It was a cargo airplane. It was the first jet cargo airplane that we were going to have in this country or in the Free World, and everybody was interested in it. President Kennedy had started the program. He was still in his honeymoon stage with the Congress in the early days, so we moved out. We had the funding for it, and everybody was generally supportive of what we were doing.

A: Historically, prototyping and fly-before-buy go like this. At this time there was no prototyping of the -141 or any competition. How was the competition developed on this?

D: We had a competition. We sent out RFPs [Requirements for Production]; and Lockheed, Douglas, and Convair responded.

A: Why was Lockheed selected?

(END SIDE 1, TAPE 3)

D: Boeing came in with response to the RFP, and then they had an alternate, which was a much bigger airplane. They were going to build that airplane themselves, and eventually they did build a big airplane.

A: Was that the 747?

D: The 747 grew out of the C-5 competition. They lost the competition, but they committed to it anyway and built the 747; so from a commercial standpoint that was a boon to them. It was the right decision to make. They were convinced a cargo airplane should be a much bigger airplane, and I think the Air Force came to that conclusion later on themselves; although the C-141 has really been a work horse for the kinds of things it had to do. Ultimately it got down so anyone of those airplanes would have satisfied the requirement, but Lockheed had the lowest cost, and that is what we went with.

A: What kind of contract was the C-141 contract? Was it a fixed cost?

D: I think we ended up with a fixed-price incentive contract.

A: Is there such a thing in contracting as the "golden handshake" thing where the company knows full well they can't bring in these widgets at \$50 a piece but will get the contract and then come in with an engineering change or something later and justify bringing them up to \$75? Has that historically been a problem in procurement?

DRIESSNACK

D: I think in the development effort the companies buy in with the idea that once you go through development, then it is too late to change horses, and they will make their money in production. What they are doing is committing some of their own up-front money with the idea that they will get the return on the investment when they get their production.

A: That the Air Force will have to go sole-source type thing.

D: And we do. Generally, we don't tool twice, and we pay for the tooling, so you wouldn't go with another source in production. Having once developed the system with contractor A, you wouldn't go to contractor B to produce it, not on a major weapon system. Although we do have dual sources on components and even subsystems.

A: Contractor B couldn't buy in anyway.

D: At that point he would be so far behind that he couldn't do it.

A: It isn't like buying light bulbs. You mentioned that if you have a technical problem, some place down the road there is going to be a dollar problem. How do you deliver bad news like that? When you were the SPO for the -141, if there was a problem, was there a tendency to try and correct the problem before you tell somebody at the next level that there is a problem?

D: To me that was never a problem, and I had to give those briefings. We would brief the problems as they were. The idea was to get them resolved. In some cases you had to

have the boss's okay to get it resolved, so it would be dumb not to let the boss know what was going on.

A: We interviewed Secretary of the Air Force Seamans [Robert C., Jr.] years ago. He said one of his fears while sitting there in his office was of somebody standing outside his door with a problem that they had been trying to fix without bothering him. Either they don't want to make themselves look bad by bringing it to him; or for some reason they didn't want to tell him, and by the time he hears about it or gets involved, it has become a major problem; or everybody else knows about it but him.

D: Let me talk to you about that later when I talk about my secretarial experience.

A: Before I came up to see you, I went over and spent about 2 minutes with General Spangrud [Lt Gen Truman]. Of course he knew you in the comptroller office. He mentioned that you had experience with Mr. Fitzgerald, which was one of the prominent highlights in your career. As a SPO, who did your boss report to?

D: The commander at Wright Field, ASD [Aeronautical Systems Division] of AFSC [Air Force Systems Command], and then on up. Back in those days we were ARDC [Air Research and Development Command] Detachment 1; then Systems Command and Logistics Command came into being during this period; then ASD came into being, and ASD reported to General Schriever at AFSC.

DRIESSNACK

A: Did that make any difference whether it was ARDC or Log Command?

D: No, it didn't seem to. With the advent of the WSPO, we were a very heavily matrixed organization where we used the laboratories as the engineering arm. We used AMC [Air Materiel Command] as the logistics arm. When we put the C-141 SPO together, you had everything all in one place. We ended up with 125-150 people, whereas in the WSPO we had six people. It was a whole different setup. Now all of a sudden we had everything to ourself, and we were starting from scratch with preliminary designs right straight through; so we were responsible for everything.

As I was building the integrated schedule network, we were building the airplane, so to speak, and saying, "What is it we have to do to bring this system to fruition?" It worked out pretty good. We always dealt directly with our boss.

On a few occasions I had to make presentations at Systems Command Headquarters to justify a reliability program, for example. Things were new back in those days. I went with Max Hammond and did some of the briefing. What he had to do to get the budget approved was to prepare the briefings for him. I never noticed that we had any problems.

A: Why do you think the -141 went so well?

D: I would like to think it was a well-managed program. We were very open about everything. Colonel Hammond was never shy about telling people what his problems were because he felt if they knew what the problems were, they would support

him with money. If everything was going well, they didn't need anything so he couldn't get any support. Also, any time a general came by and even the chairman of the board of Lockheed, they all came in to see my control room; everybody came in to see it. MATS came in in those days; they were really involved. They had people actually in the SPO, and we went out there.

I remember pointing out to them that we were not in the business of getting military construction funds; that was something they had to do. We were on contract to put a simulator down at Charleston for them, and I said, "We have an incentive. You said you wanted it early, as soon as you could get it. We have an incentive for up to \$1,000 a day for 30 or 60 days, and that simulator is going to get here early. Where are you going to put it?" They said, "We are going to house it in the new simulator facility." I said, "The facility isn't built, and you can't build it in the time we are going to get the simulator." They challenged me. I said, "I've got it on the network." They came in and looked at it, and then they started backtracking. Lo and behold, we were right.

All of a sudden they went for emergency funds because the time frame to get military construction funds is different than it is for normal weapons acquisition. You have to get ahead of that game, because you have a separate appropriation for military construction. It comes out in its own bill. You can't even get into the POM [Program Objective Memorandum] or into the budget unless a certain percentage of the design drawing has been completed. I



DRIESSNACK

can't say, "I now want to build a building and go over and get a budget." They will say, "No way."

A certain amount of the design has to be completed before you can do that. There is even separate money that identifies the preliminary A&E [Architectural and Engineering] effort. We backtracked all that sort of stuff.

I remember the first time we discovered the problem; "Hey, we are going to get a simulator before MATS gets the building," so we went to Colonel Hammond with it. "Hey, where are we going to put this? We will be embarrassed to put it on a ramp or store it. We are paying them \$1,000 a day as a bonus." He went to MAC; lo and behold, they came in and we got something done about it.

It was that sort of service that we provided to everybody, and we always felt that was what the SPO was for. We were the integrator of the entire program, and we worked it that way, and it stood us in good stead. The -141 was a good program, a well-managed program; and the airplane turned out to be an excellent airplane.

A: Was there a problem of keeping SPO's personnel in a project? Was there a quick turnover of people?

D: No. I stayed in until I went to Command and Staff. Even then they didn't want to let me go but finally agreed that I probably ought to go.

A: Was there a problem of lack of promotions in this area of the Air Force?

D: No. I got promoted to major in the job below the zone, so I didn't have a problem.

A: As I understand it, there was a problem. At one time there would be a rapid turnover of SPOs. The expertise would continually leave. Whether they called them SPOs, this was one of the reasons Schriever tried to establish Systems Command, as this would give him more clout in getting people promoted, whereas AMC had not done that.

D: One of the things he did do was to set up a career pattern for program managers in the Air Force that the rest of the world is now copying. It started back in Schriever's day. They bring people through a certain education process, certain experience process; and by the time they are majors, they say, "This guy could be a good program director," so they monitor him and move him around. The personnel folks in Systems Command monitor the careers of people that have been earmarked for potential program managers.

A: You say the -141 general operating requirement came out of MAC?

D: Right.

A: Where would they have to go with that?

D: To the Air Staff.

A: Then if you convince them, they become the agency to convince the JCS, the Congress, the DOD, and everybody else that has to be convinced?

DRIESSNACK

D: Right. That is the same way it operates today. They used to have a General Operating Requirement [GOR], then a Specific Operating Requirement [SOR].

A: Could ARDC have pulled the plug on a request by MATS like that? Could they have told MATS, "What you want for an airplane is not technically feasible at this time"? Could they have negated something like that?

D: I suppose they would have had a technical input, but the way things work from a practical standpoint is that they understand what is available in the technology, so they build their requirement based on what they feel is available.

A: MATS is not going to pull a GOR out of thin air without having talked to Systems Command and the Air Staff.

D: Correct. The FAA got involved with the C-141 also. The FAA said they surveyed all of the fleets of commercial airliners. They went to everybody from a local airline to Pan Am that was flying worldwide. They developed a scatter diagram of requirements. They drew a best-fit line through it. It supposedly represented the configuration they should have.

It wasn't done very scientifically because Pan Am wanted a great big airplane, and the local puddle jumper wanted a small airplane. This resulted in a compromise; but if there was going to be civilian support for a cargo airplane in the beginning, there was a lot of thought given to the idea that we were going to have air freighters in the

civilian airlines. That never came to fruition. We never sold one commercial -141.

A: Now the -130 sold as a freighter a lot of times. Why do you think the -141 was never sold commercially?

D: They just went with the normal commercial airlines; took the seats out and used that. It was much cheaper.

A: Has this GOR or SOR ever been used as kind of a trial balloon to see if something has support in the Air Force?

D: The requirements process that is used begins with the operating commands. They say they really need something, and then it is up to the technical community to figure out how to provide it.

A: The using command wouldn't be sending this up in hopes that they may get something, a nice-to-have?

D: It gets pretty well coordinated.

A: Were you on the source selection board?

D: Yes, I was.

A: And the breaker, the reason Lockheed got it, was cost?

D: Technically they were acceptable, as was everybody, and they were the lowest cost.

A: How much of a political decision was something like that?

DRIESSNACK

D: I never got involved with the politics, and I don't think there was a political decision made. I have been on several source selection boards either at the working level or at the review level or at the advisory level, and in every single case within the blue-suit Air Force, I never saw anybody in 33 years say, "It is so-and-so's turn." I hear that comment all the time, but I personally never experienced it, and I spent a lot of years in Systems Command.

A: One example that comes to mind was when General Dynamics got the F-111 based on the fact that it was in Texas, and Lyndon Johnson was President at the time.

D: The F-16 and the F-17 had a fly-off. I was at Wright Field at the time. Before that we had the A-9 and the A-10, Northrup and Fairchild; then you also had what is now becoming the C-17. It was a -14 and -15.

A: One of them had the engines above the wing?

D: Right. Those were fly-offs where we actually flew airplanes we had the contractors propose on specific programs, but we actually flew the airplanes and looked at hardware. I was not on the -16 and -17, but I was on the A-9/A-10 review. I went out to Edwards [AFB CA] and talked with the flight crews and the maintenance crews to make our own assessment of where they came down on this. In none of that did we ever talk about the politics of things. We talked about the facilities, the ability to be able to produce in the quantities we were talking about, but we never got into

"it's so-and-so's turn" or what have you. I never saw any of those decisions overturned that I was a part of.

The only one I ever heard about was the TFX, and I understand McNamara got involved with that. I think that single case is pretty well documented. When we went forward with the -141, Lockheed was the recommended winner, and that was what the Air Force went with. When ASD went forward with the F-16, it was General Dynamics, and that was what the Air Force went with. The A-10 recommendation was Fairchild, and that was what the Air Force went with.

A: Several years ago I was at March AFB, and I saw A-9s sitting on the ramp out there. I guess there is only one or two of them in the world. If you are trying to preserve an airplane, I guess the worst thing you can do is let it sit outside, especially at a place like that.

Was this part of the Air Force System Procurement Council that Assistant Secretary of the Air Force, R&D, Financial Management, General Counsel, DCS/R&D, Systems and Logistics; was this the procedure you are talking about?

D: That got formalized later on, but we didn't have anything like that at the beginning. We would go up through the system and brief first Systems Command then over to the Air Staff and finally the Secretariat. Back in those days they would concur or nonconcur with what we did.

A: I was once told by General Waymond Davis [Lt Gen] that the paperwork--the plans--filled a DC-9 for a specific airplane.

DRIESSNACK

D: He was at ASD.

A: I forget the specific airplane he was talking about.

D: Probably the B-1. He went to work for North American.

A: In fact, that is where we interviewed him in 1972. He was in an office there, and they had the mockup of the B-1 in that big room.

D: The response to proposals gets to be ludicrous. We have specifications on top of specifications. You might have a first-tier spec that calls out references to 15 or 20 others. Those 15 or 20 others might call out hundreds of other specs. You compound that with every spec that you have. When you get down at the bottom of this thing, and you have specs that you can't believe. There is no way to read them or to clean them up. It is just unbelievable.

A: At that point what do you do; just go on faith?

D: There is somebody that understands that spec, and there is a guy at Wright Field that is responsible for it. He looks at that during the source selection. He wants to look at his own little piece of the world. He scores it; he has criteria for it. Whether it is useful or not in the total scheme of things is debatable. I think in some of the things we are doing today the paperwork is ridiculous. It has gotten completely out of hand. We build good commercial airplanes, and the cargo airplane is as close as you can get to a commercial airplane; yet, they load on all these specs.

When they built the C-17s, that grew out of an environment of fly-before-you-buy and very close to commercial applications. The engine on that particular airplane is contractor furnished, just like it is on a commercial airplane. In this case, Douglas is going to be responsible for integrating that whole system together. There are still a lot of people in the Air Force today that think that is wrong; we should be responsible for all that stuff; we should be doing the integration and so forth.

I think Packard, on his latest commission, has proven to a lot of folks that commercial specs for electronics are just as tough, or tougher, than what we use in the services. He has shown people that, and he is in the electronics business. He uses a lot of circuit boards and electronics in the kinds of things that he is involved with. We have a tendency to think everything has got to go through a shake, rattle, and roll test like it is going to combat; but in truth, it doesn't go to combat.

A: This goes ahead of the C-5 a little bit, but I had heard that the Army, for example, wanted this requirement for the ability of the plane to kneel so it could load and unload quicker. Did those kind of requirements come from the Army for the -141, or did they not get that deeply involved with it?

D: We had a very expensive automatic weight and balance system requirement on the -141. We didn't put it in. It was some lab engineer's pet project. There was a case where my practical maintenance experience helped us a lot. I said, "No gimmicks on this airplane." I operated a fighter



DRIESSNACK

squadron in Alaska, 35 degrees below zero. On the C-141 I remember asking, "How are you going to change a fuel pump in that position? Move it; let's get it to a place where a guy can handle it in freezing weather. We don't want to take plates off. We want to have quick-opening fasteners to do some things where you have to have constant maintenance." We did a lot of practical things based on my own personal maintenance experience in those 4 years in SAC.

The kneeling gear thing is like taking the mountain to Mohammed. You could take a wooden ramp and build it up there. I kept asking "why." "Why did you do this?" "You may have a depression in part of the runway or the ramp." I said, "Park it someplace else." It is crazy to just gimmick up the airplane, and at great expense. We don't use it any more for maintenance reasons; they are locked.

- A: I notice on the C-17 they are talking about they want the ability to lower the ramp on that airplane; or maybe I misread it.
- D: It is a mistake to do that.
- A: You mentioned you were in maintenance, so you could say, "Hell no, this isn't really the way it's done." I read some airlift studies done in the late 1950s, and they did all the studies that were done again in the middle 1970s for the C-17. It was all deja vu. What happens to all that expertise? Does that get lost as the bucket gets reinvented?

D: Yes. Experience moves on. It gets older; it gets promoted; it goes to other assignments, and then new people come in. Sometimes the bureaucrat who sits out there has a pet project in the laboratory. He didn't get it the first time; by god, he's going to get it the second. If he didn't get it the second, he's going to get it the third. He is still there. It is a great idea to him. Somewhere along the line somebody will say, "Hey, terrific! Let's put that on. I need it."

On the C-17 I think they got a little smarter in that they took crew chiefs, load masters, line chiefs, and when we had this fly-before-you-buy evaluation at Edwards, they actually had those people as part of the review process. I happen to know that the load master, the senior sergeant, helped design the back of that airplane. He designed the back end from a load master's standpoint; what's practical; what's ease of maintenance; what is efficient to do to operate. He now works for Douglas. They hired him away from the Air Force.

A: You don't see many NCOs going to industry. You always see the ranking officers.

D: The people are in the system. You can get line chiefs. Recently I got involved with the new engine that may be going into the advanced tactical fighter. Before that engine got designed, Pratt & Whitney sent some 72 design engineers to the ramp in TAC; talked to the flight chiefs; talked to the crew chiefs, the engine maintenance people, and so forth. They said, "What is it we can do to enhance the reliability and maintainability of this engine?" They

DRIESSNACK

showed them. It was just a simple matter of, "Oh, yeah; we can do that. Gosh, I didn't know that was a problem"; this kind of a dialogue.

As a result, that engine is a super design from a maintainability standpoint. It is a whole different approach to engine design based on the ramp's input; the practical maintenance man's input.

- A: Another area; how did you control the company from charging to the C-141 for another aircraft they were building on the other side of the factory? Was it easy to keep the cost of the C-141 on track versus what the company may have wanted to put on overhead for the whole company?
- D: Overhead is spread across the whole place. Direct charges go against your specific contract. The overhead is allocated based on the percentage of what your contract bears of the total factory. DCAA [Defense Contract Audit Agency] lives in plants. They do desk audits; they do worksheet audits. That is their job; to make sure that cost gets allocated and charged properly. Also, we have a plant rep that lives in the plant. Their function is to make sure people are not cheating or charging costs to something else. Eventually everybody that works in the plant has got to charge to something. If it is all Air Force work, you might say in the final analysis, "What difference does it make?"

Most frequently, however, it is not all Air Force work. We have always been very finite and attentive to where people charge their costs. You do have to charge costs by contract, by fiscal year, and that is done in a very

responsible way, and we do have the wherewithal to do the audits. People sit there day in and day out, look at the charges, track and audit the charges. Generally, I think they do a good job. On the few occasions they foul up, the world hears about it.

END SIDE 2, TAPE 3)

A: In dealing with a contractor, could you deal with the subcontractors with Lockheed, for example?

D: We did not deal with the subs. We dealt with Government-furnished equipment contractors and the primes.

A: Someone told me on the F-111 they had the Mark IV or Mark III radar system, and it was a terrible, terrible thing that never worked right. The Air Force could not get past General Dynamics to deal with this electronics contract.

D: Because of the contractual relationship.

A: Is that a good thing or a bad thing?

D: What you do is hold the prime contractor responsible for what the subs do. That is the way it should be; that is the contractual relationship. Otherwise, if you have all of the subs, and you want to be the integrator yourself, then you are ultimately responsible for the weapon system. That would just be another type of contract or whatever you want to call it. You can do that, but we generally don't have the capability or the manpower to do that. That takes a lot of folks to be the overall integrator and the overall

designer. What we haven't done in the past is to hold the prime responsible, ultimately, for the total design in a monetary way or in some other way; to make them perform.

In the past we have seen a lot of changes made; we financed the changes that were made; and that has been part of the problem. More and more we have gotten to the point where we do hold the prime responsible for what he is doing. Getting well through changes is something that has been around and talked about for a long time. Some contractors do get well with changes, but more times than not, the Government precipitates the changes. We have new things that need to be done, and we are constantly changing. Technology changes very rapidly. We want the latest technology, so we are trying to incorporate it while we are developing the system. All of that is very, very expensive.

A: What about this theory that the aerospace industry should be given more responsibility for driving the weapon systems; what should be available and what is available, rather than the Air Force saying, "We would like this," and then the aerospace industry responds by building it? Is it possible to let the aerospace industry build systems on their knowledge and pass them to the Air Force, or can it work that way?

D: Well, the Air Force has to lay out the requirement in the first place. What we can do, instead of being specific on things, is to provide a functional requirement. We need a weapon system to do A, B, C. What we generally did, though, in the past was to say, "We need a weapon system to do A, B, C; and we want you to do it this way." We hold them to very

detailed specs on how they are going to accomplish the work. In many cases the specs become an end in themselves and not the final function or the requirement of the weapon system.

I see that every day in the plants with quality specifications, as an example. The idea is to develop a quality system that insures you develop and deliver a quality end item. A lot of the people in the plant--and I have seen this recently--are concerned with whether the paperwork is filled out properly; whether you have used uppercase or lowercase letters, and things like that. It is ridiculous! I wouldn't have believed it except that I have looked at it myself.

Before I was always defending what we were doing and seeing if people were doing the right thing. "Well, the reg [Regulation] says that; the spec says that." The contractors sell a system, their system, and it is supposed to do certain things. What we do is evaluate to see whether they are doing it in accordance with what they said it would do. If they are not, then we are sort of giving them their licks, writing them up, and insisting that they do it that way because that was what was in the contract. In reality it is the hardware that we are buying, not their procedures. We want to make sure that the hardware works properly.

The Navy has taken a different approach recently by just checking the hardware. They are not interested in the management systems. How that is going to turn out, I'm not sure. For instance, the Air Force goes in and does a review of the internal management systems, control systems, and that sort of thing to see whether they are in place; then

DRIESSNACK

the system should produce a good product. The Navy doesn't care about the paperwork, they say. They go in and periodically tear down a piece of hardware and say, "Does it work or doesn't it work?" That is what they are interested in.

A: That is an interesting approach. You would think the Navy's approach is the more logical.

D: There is one office in the Navy, Will Willoughby, who sits up at the Secretary's staff. He is trying to press this, and he is having a hard time getting it through his own bureaucracy.

A: Did you get involved in Project Forecast in the middle 1960s? This was where General Schriever wanted to project out to the 1990s what the Air Force would be and how we would get there.

D: No. I was on the peripheries of it, but I didn't get involved with it.

A: You went down to Air Command and Staff in 1962. Was this by request, or did your name just come up?

D: It came up on the list.

A: Did you want to go?

D: I wanted to go. On the other hand, I wanted to stay in the SPO. There was a lieutenant colonel in the SPO that gave me some good advice. He said, "If your name is ever on a

school list, you ought to go because it probably won't appear again." He convinced Max Hammond that they should let me go to that school; career wise and Air Force wise I probably ought to go to that school at that time, so I went, and I enjoyed it. There were a couple of things that happened at Command and Staff. I learned some things. It turned out there again was a mixture of people in our seminar.

We had one person who came out of administration, a career field I didn't think contributed that much. Nevertheless, this guy was an expert on viewgraphs. You don't think that is much, but let me tell you, I learned so much about viewgraphs and presentations from him in the talks that he gave. We had to give talks constantly as we were going through these seminars, and I learned about color schemes, subject matter, how to present it, etc.; and I learned to make good viewgraphs. I took that with me and taught people how to make viewgraphs every place I went; to every exec I have had and to people that work with me. I have always prided myself on good viewgraphs. They were punchy, the right color, and the right projection. That is a lesson learned just from a friend I sat next to in the seminar.

A: And you have spent your career giving presentations.

D: Absolutely.

A: Have you been able to take that end result and bring it over to computer presentations?



DRIESSNACK

D: I haven't done that at all. When I went through Command and Staff in the 1962-63 time frame, we had foreign students in the class, and we had them in SOS. One of the things that bothers me now is this drying up of IMET [International Military Education and Training] money that is provided to provide education for foreign Allies and friends; and we charge them too much money.

Somewhere along the line Congress or the GAO [Government Accounting Office] wrote a report and said, "We have to charge them for everything, including the depreciation of the buildings and people's salaries," instead of the incremental costs; and that has priced us out of the market.

Our influence around the world is directly related to those foreign nationals who were educated with us in our school systems and then become leaders in their own armed services. A lot of them came here for pilot training. They have gone to our professional schools. If you ever have a problem worrying about things, they take back with them the same philosophy that we have: civilian control of the military. The country is preeminent, not the military establishment.

I have never run into anybody in our armed services that ever wanted to effect a coup; yet, South American friends I have had lived through changes in dictators between an uncle and a brother and a father and this sort of thing. They take turns at having coups. We had lots of dialogue about that when I was in school.

You play athletic games with them. They are great at soccer and developed other skills they learned from us in other

sports. They are great in a classroom, especially in a small seminar where they feel they can express themselves; not in a big lecture hall but in the small classroom. There is a lot of good give and take in our customs and the kind of people we are. I thought it was a great classroom atmosphere for those folks.

It was kind of a laboratory environment for all of that to develop and spawn into something; great relationships develop, but we eliminated that somewhere along the line when we cut back the IMET money. We are penny wise, pound foolish as a Nation. Again, it is that micro-management being put on the military budgets; staffers changing things and not understanding what they are doing.

A: From ACSC you came up here and worked at Systems Command.

D: Yes. When I was at Command and Staff, I got an assignment to Systems Command. Before I got the assignment I was called by somebody at the headquarters, and they said they were going to ask for me to come to the headquarters. I said, "Great!" I felt that I was going to use my background and experience now at another level, another echelon.

I should preface that by saying that while I was in Systems Command at ASD, I kept wanting to go back to the cockpit because I had about 1,700 hours of flying time--most of it was jet fighters--and I wanted to get at least my 2,000 hours; but I wasn't given the opportunity. Even in the SPO when I flew, there was a period of time when we had to fly C-45s instead of jets. Finally when General White [Thomas D.] became Chief, he changed that, and people went back to

DRIESSNACK

flying the airplanes that they were qualified in instead of flying the old stuff. The colonels and other people were flying the T-birds, and the fighter pilots were flying C-45s and C-47s; it was ridiculous.

I had no sooner gotten checked out again in the T-33 at Wright Field when I went to Command and Staff. That was great. At Command and Staff at Maxwell they said, "You have a ticket to fly; you are checked out in the Air Force; go take an airplane."

This was the only place I had run across something like that because SAC is very, very close hold on checking you out, giving you an area check, and all that stuff. I came back from combat, and they wanted to give me a flight check in Montana in the same airplane. We thought that was a little much.

We had a lot of good flying down there. I think it was a good way to get with some of the guys and go out on a cross-country and talk about things in the cockpit and get rid of the cobwebs. You flew with lots of different people. You didn't fly with people you knew every day in the squadron; they were all different kinds of folks you got teamed up with. I was thinking of going to Systems Command and getting back into this management systems business. Then I got orders to go back to the cockpit.

When I was at ASD, I had identified that I wanted to go back. They kept telling me, "The needs of the services are such that you have to decide whether you are going to be a pilot or an engineer." I remember General Holzapple telling

me that. I said, "I don't think I should have to make that choice at all." I was on a Junior Officer Council that Schriever had started at all AFSC bases. It was in that context that we were talking to Holzapple.

A: I have never heard that comment made before; I'm surprised.

D: I said to him, "Look. I know I'm a better engineer because I was a pilot; and I'm a better pilot, I think, because I was an engineer. There is no reason you can't be both an engineer and a pilot." I said, "Why would you want to have airplanes designed by nonpilots, or why would you want to have people overseeing development and testing of them that are nonpilots? There has got to be some blending in there." He said, "Career wise you are going to have to make a decision which way you want to go," so they decided for me that I was going to be in the acquisition business out there at ASD.

Now I go to Command and Staff, then they tell me they are going to take me to the headquarters, then all of a sudden I get notified that I'm probably going to fighters, F-4s at Tampa. This is preparation for going to Southeast Asia. I said, "Why am I going to do this? Years ago I tried to go back to the cockpit. I gave that up and established myself in the weapons acquisition business. Now we are changing gears again, and I'm going back to the cockpit. Baloney! I'm not going back. I'm going to continue the career that I've got."

So I wrote a letter and said essentially, "I tried to go back to the cockpit; you wouldn't let me, so I decided I

DRIESSNACK

would do the best for the Air Force at what I was doing. I have established a reputation for myself as having some expertise in the management of weapon systems, and now you are telling me to forget all that and go back to the cockpit. I don't believe that is in the best interest of the Air Force. Therefore, I'm going to administratively ground myself if necessary."

There was a provision that you could do that. Before it used to be medical or fear of flying; that was it. There was always a stigma attached to it, but that got changed. I don't know where it got changed. A lawyer in the class pointed that out to me; that you could get an administrative grounding if you felt strongly enough. Well, when you are in academia, you have a tendency to think along the philosophical lines, the purest, or the academic lines and sometimes not too practically. I said, "You don't know what the needs of the Air Force are, and this is the way I see it."

I got a letter back posthaste that said, "You are grounded." This was in the middle of the month; they wouldn't even let me fill out the month for flying. And I got assigned to Systems Command. When I went to Systems Command, I went with a hell of an investment. I gave up flying pay, and I gave up flying. I did not want to give up flying. I decided then that I was going to put in 20 years. If that was the way the Air Force was going to treat somebody, then they are going to get 20 years, and that's it! I had too much at stake at that time. I had just been promoted to major. The difference between a major's pay and a captain on flying status--and I no longer had to pay flight

insurance--kind of worked out, and I didn't have a big financial drain.

I did come to Washington, and that was a shock--financially and economically!!! I went to look for a house, and it was twice what I had sold a house for in Dayton, Ohio. We strapped ourselves financially to buy a house. I had two mortgages, a first and a second. The owner took another mortgage in order for me to even get invested here; so I made a big sacrifice coming to the Systems Command. I talked to people, and they told me, "Don't do it." I talked to a PEM [Program Element Monitor] in the building. He said, "God! Don't do it. That is the death knell. That is the end of your career."

- A: Why were they saying this? Was it just Systems Command and being a nonflyer in Systems Command.
- D: This was the Air Staff people telling me this. "You are a nonpilot in the Air Force." I hadn't even talked to anybody in Systems Command. The Air Staff people said that was a death knell if I grounded myself in the Air Force. Anyway, I was committed to the management side of things. I decided if they wanted to let me fly, fine; if they don't want to let me fly, and I have a choice to make, then I would take the management side of the thing, and that is what I did.
- A: Nowadays there wouldn't be any problem, would it? If you didn't want to fly, they would be more than happy to put you in a nonflying job.

DRIESSNACK

D: I really think that when people go through pilot training, they have to make a commitment; have to make certain gates now, and there is a commitment that they ought to fulfill. The personnel system got hold of me, and I wasn't able to fulfill it. Flying fighters in SAC, there was a limited number of hours you could fly. Later on when I got to be the Director of the Budget and we were fighting for flying hours for fighter pilots, I could relate to that very, very well because we weren't able to build up the 2,000 hours of flying time we should have at that stage of our careers.

All my multi-engine buddies had it because they were flying longer missions overseas, but in fighters you flew 2-hour missions. That was it. In combat it was 1 1/2 to 2-hour missions. That was what you flew. You don't build up a hell of a lot of time very quickly that way. Anyway, I made an investment in the business, and I stuck with it. I decided they would get 20 years, and that was it.

A: Were you able to pick the job you wanted when you came into Systems Command?

D: No. I came to a particular job. General Freidman [Lt Gen Robert J.] was the comptroller at Systems Command. I got a call from them; Col Jack Bennett at the time. He is in town here as a local consultant and has his own consulting firm. Jack Bennett wrote or called me; he worked for Friedman. Friedman was looking to build up a management systems group of people within the comptroller at Systems Command. He wanted five people out of the SPOs. My name was one of

those five people. I got selected because of the work on the -141. I was now at Command and Staff and was available.

When he went forward to the Pentagon with a name request, that got to personnel and the personnel system. The personnel system saw that I had been out of the cockpit for 4 years, so that sort of precipitated, "Okay; now back to the cockpit" kind of thing. Had I stayed at Wright Field and never gone to Command and Staff, the issue probably would never have come up; but it came up because of the name request.

I came to AFSC and worked for Jack Bennett, and we did some pretty good things there. One thing was, we wrote the USAF PERT series of five documents. I think I have one of the only sets left upstairs. It was the result of the experience on the -141 program. It was a technique they wanted to apply across the board in a lot of the other places.

A: What directorate did you work in?

D: It was ACM, Management Analysis, to start with.

A: Were you looking over specific weapon systems?

D: We were looking at the development of management information systems for use by program offices and the headquarters in evaluating, managing, and monitoring the weapon systems. We were in the management information systems development business. They had a new group of guys that were assigned throughout that whole directorate. I got involved with the



DRIESSNACK

PERT project because I was the only one of the five that had any PERT background, so I got directly involved with writing that new set of documents. I then managed and worked directly with the contractor that was doing it, the Management Systems Corporation out of Cambridge.

Jay Sterling Livingston was the head of it. His vice president was J. Ronald Fox. Fox had the job that Ernie [A. Ernest] Fitzgerald had later on, and he later became the Assistant Secretary of the Army for I&L. Dr. Fox is now back at the Harvard Business School where he has written a couple of books; Arming America was one of them.

A: When you say you were writing up this PERT, things had not taken an organized track; that the system project office had not grown on its own, and there were differences between different systems?

D: Yes. There were differences between different systems. Every program office sort of ran differently. There was the advent of the 375-series regs in Systems Command in order to bring about some standardization. SPOs were something new. We had WSPOs before we had SPOs, and that was a very tightly matrixed deal. Now we had everything in the SPO, all self-contained. It had limited outside assistance, where the WSPO had primarily outside assistance. You were the coordinator of a lot of things, but it was a true matrix, very heavy matrix.

The SPO, while it was matrixed, was also self-contained to a large extent with its own capabilities. Regulations were being written on how that was going to operate. They were

taking advantage of the experience gained in the missile program that Schriever directly ran on the West Coast. He had what was the closest thing to a pre-SPO. Everything was self-contained.

It all worked for him. He had them all under him, whether it was the Atlas, the Titan, or the Minuteman. It all worked directly for him. Then when he came in and took over the command, he wanted to have that SPO kind of arrangement as the norm for doing things. That was really the advent of it.

Freidman, as the comptroller, recognized the comptroller's responsibility for developing and insuring that management systems are in place. That is what the comptroller does. He doesn't necessarily operate them, but he has to make sure that there are, in fact, control systems that control; whether it is the fiduciary side, or the non-financial side. It is also the scheduling and the technical side. You have to make sure people have systems to be able to do what they are supposed to do. That is the whole idea of comptrollership. That is one of the functions of the job of comptrollers in government and out of government, and he took that role.

Now Crow [Lt Gen Duward L. (Pete)] came in, and his strong point was budget. He was a real budget officer. He later went back to the Air Staff and became the Director of Budget at Headquarters USAF and then Comptroller. I got to know General Crow early as I joined them at AFSC as a young major right out of Command and Staff. Crow was very supportive of what we were doing. I think he recognized the necessity of

DRIESSNACK

it. He didn't have that expertise himself, but he recognized and supported the kinds of things we were doing.

A: Was Friedman the one who decided he wanted these regs written, or was this something Schriever wanted?

D: I have got to believe that the direction came from Schriever. In other words, he wanted the command organized under the system program office concept, so the regulations all had to be changed to accommodate that. We had to now shift gears. Friedman, as the comptroller, picked up his area of the responsibility and said, "These are the kinds of things that I now need to get involved with." The other thing that he recognized was that he wanted somebody in the comptroller that could talk to the engineering and the systems side of the house, so that is where we came into the comptroller shop.

I had gone to the SPO with an engineering degree and an MBA, and there were several of us who were picked up that had MBAs.

(END SIDE 1, TAPE 4)

D: Bob Johnson came up. He is now retired in Tennessee, but he was in the SPOs. He came up as one of the people in management analysis, he was also in my MBA class.

While we were there at Systems Command, Schriever signed a contract with McKenzie and Company to look at the whole management information system in weapons acquisition in the Systems Command; a large contract. I think it eventually

cost a million dollars or better before they were finished. They were there for over a year. The people that monitored that contract from the Air Staff were from the Secretariat level. Ron Fox had come in as the Deputy for Management Systems in the Secretary's office. Zuckert [Sec of AF Eugene M.] was the Secretary, and Zuckert was very supportive of this whole effort.

Ron Fox came over one day to have lunch with me. I remember going over to the club at Andrews. We talked a little bit about my background. He became aware of what I had been doing through this Management Systems Corporation that I had been working with in writing that PERT series of documents. I had never met him when he was a part of the organization, but obviously his people had talked to him about my work. Fox requested that I come over and work for him. The Secretary sent over a name request, and I then got transferred to SAF/FM. That is how I got over to the Secretary's office. The object there was to monitor this whole area of management information systems for the Secretary with Ron Fox. We became very actively engaged in that whole business of management information systems.

A: What was Fox's title?

D: He was the Deputy Assistant Secretary for Management Systems. He was in FM, Financial Management. Ted Marks [Leonard, Jr.] came in as the new FM. I remember going out to Stanford campus to meet him for the first time; Fox and I went out there. The three of us were kind of a new team. Zuckert knew Fox and Ted Marks very well. Snipes [Col James C.] was the exec. That was the group.

DRIESSNACK

A: What was the atmosphere over there versus Systems Command?

D: Business oriented, commercial oriented. They were looking at some practical ways of controlling costs and flows of information. For me, it was a good environment in which to work. I found it stimulating to work with these two people, Ted Marks and Ron Fox. Both were people oriented; both bordered on the intellectual in the sense that they were sort of bookish. Whatever they were short on in the practical sense, they made up on in their ability to get along with and associate with people. I didn't have the formal education that they had.

Ted Marks was a Ph.D. out of Harvard Business School. Bob Anthony [Dr. Robert N.] was a classmate of his at the same time, who later came in as the comptroller of OSD. He went back up to Harvard. Fox later left that job and went back up to Harvard and got his doctorate and came back to the Pentagon and did a stint as the Assistant Secretary of the Army. He is an overseer at Defense Systems Management College [DSMC].

He was very influential in getting DSMC under the cognizance of the Army down at Belvoir, and he has had a continuing interest in that and in the weapons acquisition business. He consults and writes books and conducts classes at Harvard in all of this. He got some practical experience along the way. The two of them were excellent people to work with and to let you bring forth ideas, throw out ideas, work the ideas, and so forth.

A: You were working primarily with systems, with R&D, developed and procured; this was the thrust of the Financial Management Office?

D: Right. What I was doing was working with the acquisition business, and I was not working with the budget, accounting and finance, or the normal comptroller functions. I was in the information flow for the acquisition business, trying to get better visibility into what was happening in the acquisition business.

A: Outside of your office, who would you be talking to; the contractors, Systems Command?

D: Systems Command, primarily. The folks on the Air Staff that were monitoring that piece of the action; OSD, Comptroller, Management Information System people in the Comptroller. One of the things we had to try to do was to make sure that the management systems being developed at OSD at the time, and the new ideas that were being brought forth, were going to fit in the total scheme of things so we wouldn't duplicate a lot of things.

McKenzie and Company had a lot of bright young folks, but again, short on practical aspects. What they had in practical aspects was in the commercial environment and not at all within the weapons acquisition business. People look at what we do in Government as, "It is a lot of paper"; "Why do you do this, why do you do that?" questions all the time. "We don't do this in industry." One reason they don't do it in industry is because they don't have the Congress as the board of directors.

DRIESSNACK

If they want to go out and buy a computer, the decision is made, and they go buy a computer. We cannot just go buy a computer. There is a source selection process that has to be accomplished; an RFP has to go out; and you have to make sure it is competed. Once you compete and select the winner, then you have to put up with the GAO protests, and you have to go to the Congress and explain why "his" constituent didn't get the award. There is no other business in the world that goes through that kind of caldron; so it is a completely different business. It is the most complicated management job in the world.

A: When you had been back in the C-141 program, you were obviously at a lower level compared to where you are now; were you aware of a lot of Congressional oversight or DOD oversight?

D: No.

A: Now you have been at Systems Command for a short time, and you are now at the Secretary of the Air Force office, right in the middle of the "McNamara era" with all his Whiz Kids. Was this indeed true? Were you faced with that atmosphere I often hear about; that the military expertise was just not expertise? They had these young Harvard guys over there in DDR&E coming in and telling you, "No, on the C-141 you don't need five engines; you need 25 engines," and that kind of stuff, based on some slide rule projection. Was that really happening?

D: I didn't see it. I was in the business of trying to effect some change. In that sense, they were supportive because

they were looking at trying to effect some change, too; otherwise, why are they there? In the business that I was in, I didn't have anything but support. In fact, they were coming to me for ideas, so it worked in just the opposite vein. I worked with Dr. Anthony and with the people that he brought down from Harvard with him; young people who didn't know anything about the acquisition business; didn't know anything about Government. They came in, looked at it, and it kind of didn't lend itself to a particular case that they had; but the young people that I worked with, new master's out of Harvard, were supportive of what Anthony was trying to do.

I would have to sit down and tell them why we couldn't do it--because there was the Congress, and there was a series of regulations. There were more ASPRs, the Armed Services Procurement Regs, in those days than they had time to read that governed all of that. Like you say, if you wanted to go out and buy a computer or go buy any particular piece of hardware, you couldn't just go do it. You just could not do it because it was the right thing to do. It may take a year before you get to that point in preparation; like St Vincent Benet's poem, "The mills of God grind slowly, but they grind exceedingly small." We just ground it out.

A couple of things that I got involved with are still around today; one, the development of what has now become DOD Directive 7,000.2, Cost and Schedule Control System Criteria. I went to a meeting as the Air Force representative on what was the OSD PERT Coordinating Group at the time. The three services were involved, and they were mostly people specifically enamored with PERT-Cost. I



never did care for PERT-Cost because some people thought PERT-Cost meant costing networks, and that is not what those folks that wrote PERT-Cost had in mind at all.

It is impractical to cost a network in our kind of business. You can do it in civil engineering construction projects, but there was already a system for that built by Catalytic Construction. It was called Critical Path Method. It had been out for a long time. It is still used effectively today.

It is computerized, and folks use it for scheduling very complicated civil engineering jobs and projects. My experience on the -141 led me to believe that the scheduling--integration of the total schedule--was the most important thing you could do because it required laying out the plan. One hour of up-front planning is worth 10 to 15 hours of downstream execution. It is very important that you lay out that plan, integrate that plan, and schedule that plan; then the rest follows. You have to constantly monitor that plan to see where the critical paths are and where the potential problems are.

I went to a particularly interesting PERT-Cost Coordinating Group meeting. I had gone to a meeting with one of the colonels at Systems Command before and had been introduced, so I knew them over there. Now all of a sudden as a young major I was going to be the Air Force representative at the meeting. Well, at this meeting a major from the Army came in, if you can believe it, on a main battle tank. That is how far back that goes. We are now talking like 1964-65;

over 20 years ago they were starting to talk about the main battle thing.

This major had gotten together with the Germans and had developed a work breakdown structure, which was the way they were going to execute this program, and had agreed to nomenclature, responsibilities, and so forth. He laid that out for them on how they were going to control the program. He then was asked by the DOD chairman of this group whether he would agree to print across his Army document: This complies with the DOD PERT Coordinating Group document of such-and-such day. He said, "I'm not sure whether it does or not." The chairman said, "Well, then you don't have PERT-Cost." The major sort of looked at him with kind of a blank stare. He was brought in there to tell us what he was doing, and then they told him, "Sorry, friend; you don't comply. Next case."

I raised my hand and said, "I don't think the Army really cares whether they comply with a DOD PERT Coordinating Group document. What they have come up with, I think, is a pretty innovative scheme for tying together two different nationalities in what is a rather unique arrangement, and they have done it very well. It looks to me like it has a potential for working. What we ought to do is support them and applaud them for the innovative approach they have taken in getting this thing done."

They said, "Well, we are not interested in his innovative approach. We are interested in whether he can comply with this document." I said, "If that is the purpose of this PERT Coordinating Group, then the Air Force is no longer

DRIESSNACK

interested in being a member." This GS-15 chairman said to me, "You are in no position, nor do you have any authority, to say that." I said, "I'm leaving. I don't want to partake in any kind of discussion like this because it is completely contrary to my own experience and where I think the Air Force is headed." He said, "You can't leave." I said, "There isn't anybody in this room big enough to prevent me from leaving," and I walked out. I never went back, and the PERT Coordinating Group dissolved shortly thereafter.

No matter what it is, any time you get to the point where it has to be in your mold only, and there is no room for innovation or deviation from anything, you bring down your own house of cards.

I was really ticked off. I went home, sat down--up in the fifth floor of the Pentagon--and wrote 10 criteria for complying with PERT-Cost requirements. I showed them to Ron Fox and told him the story. He was completely sympathetic. He said, "You did the right thing." I said, "I tell you this because you or the Secretary are going to get a phone call." Sure enough, they did. They said they thought Driessnack did the right thing. They were concerned with the way the whole PERT Coordinating Group was going, and they would talk about it after I had a chance to collect my thoughts.

I spent that afternoon, that evening, and the next day refining these criteria. I talked to Fox, then I said, "Why does it have to be PERT-Cost? What we are looking for are effective cost and schedule control systems in a

contractor's plant. These should just be criteria for cost and schedule control systems." He agreed with that, even though he was one of the originators of PERT-Cost; so that is the way it went down.

He looked at them, made some comments, and we went down and talked with the Secretary. We decided this was the philosophical approach that we were going to take: Provide a set of criteria that we expected contractors' systems to comply with and not a cookbook approach of how to do it. We were then going to evaluate their system against these criteria: Did they do these things? It was a new, innovative approach, a performance specification.

Long story short, that has become DOD 7000.2. It was finally published about 1967 and has been on the books ever since. I just went to a meeting last week where we have people still talking about the implementation and the problems, but nobody wants to change the criteria. The criteria, as we laid them down initially, are accepted as the right thing to do. They fit in with all of the requirements today and the philosophy of streamlining today. The problem has always been, and still is today, in the implementation.

People's interpretation of things, getting too rigid; saying, "This is the way you do that; this is the way you do this," and it is the implementation that has gotten us in trouble; but the criteria are as they were essentially written back in the mid-1960s.

PERT-Cost Coordinating Group was in the I&L side of the house at OSD; and now Bob Anthony comes in as the DOD Comptroller. Dr. Anthony takes over Management Systems, and we lay this on Anthony, and he likes it. We began to pursue that.

While in that same job, one of the things I noted; when the Secretary went to meetings, we provided him with some background information for whatever the briefing was going to be. If it was in a weapon system of some sort, we tried to give him a little bit of background. That was all done by Management Analysis on the Air Staff. They had a formal briefing room set up. There was a series of books--a red book, a green book, a blue book--and every place you looked, if you wanted to look up the F-111 or C-141 or Minuteman, you could look it up in any one of those books. They all had different financial figures. The reason they had different numbers, they were published at different times, so you got whatever the latest time was. The headings were different; definitions were also different in some of them.

I suggested to the Secretary, "What you ought to do is have one set of documents that starts from a program office and gets briefed all the way up through the Secretary, and do away with all these books." By the time you published the books, they were a fiscal quarter out of date anyway, and these were hard-bound books. I'm not talking viewgraphs or ring binder; I'm talking hard-bound book. Why they went to all that trouble is beyond me. They looked nice on the shelf, but as soon as they published them, they essentially were out of date. They were well done, but it didn't make

any sense from a management tool standpoint. That is what we were interested in changing.

I put together three pieces of paper: one for cost performance, one for schedule performance, and one for technical performance. I took the TFX, the F-111, as an example. I took the information out of the books and said, "Here is what this should look like," and laid it out. Ted Marks liked the format. He sent it down to Bob Anthony; said, "This is the kind of thing that we are working on. I think you might be interested." Well, Anthony was interested. In fact, he sent up one of his bright people, Bill George, one of the new MBAs from Harvard that he brought down with him, and he came up to see me.

Bill George said, "Anthony wants this document made standard across DOD." I said, "Bill, you can't do that yet. The problem is, there is no underlying system to support it; so if you lay on the DOD directive right now, we have to put out an Air Force Reg, and the Army and Navy have to do the same thing, but there is no system to draw the information from. You can't be sure you are getting valid information. One of the reasons we wrote this specification for costs and schedule control systems is that we would be able to get some cost and schedule performance information to feed a system like this with some validity. It is that single system that we want to have in the Air Force for major acquisition reporting."

George said Anthony was adamant about it. He wanted to standardize it. An appointee is only there for a short period of time, a couple of years, and he wants to change

DRIESSNACK

something while in office. We sat down and wrote out essentially what a system like this should look like and who should provide the information. We imposed it on major weapon systems, and this was before we had anything like a DSARC [Defense Systems Acquisition Review Council], so we defined a major weapon system as "X" millions in R&D and "X" plus million in production. He did put out DOD 5000.1 series of documents that laid out what the overall responsibility was for the OSD Comptroller and the kind of information systems that were expected to be generated within DOD. Then he started fitting into it some regulations.

DODI 7000.3 became the Selected Acquisition Report [SAR]. It was essentially those three sheets of paper that I had originally put together for Dr. Marks. Strangely enough, that particular report got implemented very quickly. It came in on a quarterly basis. It did get to provide the standard that came through the Air Force to the Secretary. The formats were reduced to viewgraph form and got embellished with some other technical things and other program management things, but the cost schedule and technical performance got to be the standard format that people used.

When Laird [Melvin R.] came in to be Secretary of Defense, at his confirmation hearings there was a complaint registered with him that the Congress gets very little information between budget cycles. They get a lot of information in defense of the budget and so forth, and then until the next year, they don't know how the weapon systems are doing and can not effectively track them from year to

year. Laird said, "Well, I get a quarterly report sent to me on all the major system acquisitions. I will be glad to share it with you." So the SAR then went to the Congress.

Today the Congress thinks they own the SAR; it's their report. Now it is a big, thick reg; it gets into all sorts of things. It started out with three pieces of paper-- schedule, cost, and technical performance--that I sent down to the Secretary and said, "Here is the kind of information we ought to be getting so everybody has exactly the same information from the program manager right on through the Secretariat."

A: Did technical problems show up faster than the cost problem?

D: Probably the schedule problems show up first. It depends on what it is. If there was a technical problem, you might not see it for a while. You had to track trends pretty closely. You begin to track cost schedules and technical trends. The program office wasn't out of money yet because he had a reserve, so you look at trends. You say, "Well, if you keep going this way, we are going to be out of money pretty soon."

A: Could you get the information to make that work? Was it possible to get the information?

D: Yes.

A: Does the computer enable you to track that even better, or do you have too much information?



DRIESSNACK

D: No. The computers help us do it better. You live under the problem of too much information getting to the wrong people, and then they meddle. They get involved; they ask detailed questions, and you spend all your time answering the detailed questions instead of fixing the detailed problems.

But anyway, that document is still in being today, and it goes on. Eventually Fox went back to Harvard. His replacement was Ernie Fitzgerald. I worked for Ernie for a period of time.

A: Two different type of people?

D: Completely different. Fox took a lot of input and consulted with folks. He took into consideration individuals, depending on where they were in the scheme of things. Fitzgerald was completely opposite. He had his own ideas; and to the extent that they married with yours, you were in great shape. If they didn't, then you could have a hard time getting your point across.

(END SIDE 2, TAPE 4)

A: Where did Fitzgerald come from?

D: Ernie ran a company called PTC, Performance Technology Council. Originally he worked for one of the consultant houses that had done some work at Lockheed on the Electra in troubleshooting kind of things. In that capacity, he ran into some internal people working for Lockheed that worked with him on the project. I'm not sure who he worked with.

I want to say Arthur Anderson, but I'm not sure that is right. But it was one of the big eight consulting houses.

A: He was originally from Alabama.

D: He came out of the University of Alabama as an industrial engineer. I believe he worked for Hays Aircraft and a few places as an industrial engineer. That industrial engineering background is the thing that he continually plays on as the only way of controlling costs or monitoring costs at a low level. A lot of things have changed since then. They used to use stop watches back in those days. Today we use video cameras to look at people, go home, then analyze what they are doing. The computers have made a lot of things so much easier; the ability to handle a lot more data and analyze it much quicker. Ernie was big on time-motion studies.

Ernie left after this stint with Lockheed, as I understand it, and formed his own company. He had about six or seven people working with him. That was the Performance Technology Company. Ron Fox, Vice President with Management Systems Corporation [MSC], was looking for some people to handle a contract on Minuteman that MSC had won, a management information systems contract. He went to the West Coast and hired Ernie and his folks. They became the Performance Technology Council of Management Systems Corporation, so they kept their letters essentially, and changed that last word. They worked for J. Sterling Livingston, President of MSC, on the Minuteman program as a part of Management Systems Corporation.

Having worked the Minuteman for a while under that contract, a year or two later Ernie bid that contract himself with his people and won the contract away from Sterling Livingston. I think Livingston sued him. I don't know what that was all about but I remember all that happening about that time. Anyway, when the Secretary was looking for someone to replace Ron Fox, they interviewed six or seven people. Some of the McKenzie people were asked to come in; some others from industry were asked; and finally Ernie was asked to come in. Ernie accepted the job. He came in and was my boss. He took Ron Fox's place.

Ernie was into about the same things we were doing. I mean, he was supportive of what we were doing. His company was working the same problem. Fox obviously knew him and had recommended him. Meanwhile, the Systems Command was refining the cost schedule planning and control specification and the approach and building other documents they were going to use to build it into a total system. McKenzie and Company was involved.

We had given the cost and schedule criteria to them, and they were involved in trying to incorporate this into a total management information system. We were looking at cost information reports for gathering information to do better cost estimating. That was part of a DOD-driven requirement and also an AFSC requirement. McKenzie was working both of those contracts in coordination. We wanted to tie the whole financial requirements together so that funds information for budget, cost information for cost estimating, and cost performance information for managing

the contract at the program office level could all be integrated.

We did that using a work breakdown structure. We built a standardized work breakdown structure and said, "For an airplane there are standard things you always have. There is always an airframe, a propulsion system, AGE, training, data; and those things that get to be the line items of the contract."

That was how we began to control the standard set of input data. It didn't make any difference what the airframe was; it was an airframe. It didn't make any difference what the propulsion was; it was always propulsion. They also matched the coding system that we had; what we then called the material program codes in the Pentagon.

It looked like we were now beginning to put together a common, integrated framework, the essence of a good management information system where things could be related to each other. There was no "how to do it" in it. It was all "what we wanted or needed." That approach prevailed. As we built the criteria, it turned out that we had to have a guide that standardized the interpretation for the three services, so we started writing the guide. At that stage of the game Systems Command and Ernie and industry clashed. There were some things that were perfectly acceptable to everybody but Ernie.

A: What was bringing things together?

D: Wordsmanship. People interpret words in different ways.

DRIESSNACK

We finally built what we called the essence of a guide, and the specification did get developed. We finally got it formalized. Systems Command began implementing what they called CSPCS, Cost Schedule Planning and Control Systems Specifications. That was put on contracts. It substituted for all the other things that were out there. All of a sudden we were in business with a new approach.

I got selected to go to ICAF [Industrial College of the Armed Forces]. Ernie asked me to stay on so that we could finish up the things that we were doing. We were fairly well along and were now in the implementation stage. I felt I probably should. When you give birth to something, you feel like you ought to be there for nurturing it along for a period of time. I allowed that maybe I really ought to do that. I was a lieutenant colonel.

I went down and talked with the Secretary, Ted Marks. He gave me the same advice that the colonel gave me years before: "If you are on the school list, go"; advice that I have given to hundreds of young people but wasn't taking myself. He said, "If you are on the school list, you only get selected once, and you ought to take this opportunity to go."

At that stage I had been there 3 years or so. He thought I ought to get off to school then get back and do something else, which was probably sound advice. I elected, however, to listen to Ernie and stayed on. He said, "I don't agree with it, but if that is what you want to do, we will get you postponed." So he had Secretary Zuckert sign a letter and

took me off the list and recommended that I go to the National War College the following year.

Meanwhile, they changed the selection criteria; that only full colonels go, and I was not yet a full colonel. I didn't get to go, and right after this happened--like September, when I should have been off in college, the world started to come apart. [tracking dates] From September on through Christmas it was just terrible.

A: What happened?

D: Well, everything that the Air Force was doing was apparently wrong. Ernie was accusing people of lying to him, of hiding things from him, of not working properly, incompetence, what have you.

A: Did it happen overnight?

D: Just sort of evolved. All of a sudden it was there, and I couldn't believe it! What happened was, we began to send teams out to evaluate contractors. Systems Command had some teams that went out to contractors to evaluate compliance with the CSCS specifications. Ernie's old company, PTC, had been working in a similar capacity with Minuteman. When the Air Force decided that it was going to have a single specification and everybody was going to have the same spec, then all these other requirements went by the boards. All of a sudden PTC was without a work requirement contract for doing reviews.

DRIESSNACK

They also had a training requirement in their contract, so Systems Command picked up that training requirement and said, "We will use that contract and use you, PTC, to assist us in developing the training requirement command wide instead of just for Minuteman."

In order to do that, one of the things they wanted to do was to get out and review programs. While they were providing training, they also had people out assisting the Systems Command folks in conducting reviews and showing them how PTC had been conducting reviews.

I went to visit them on a review to GE in Philadelphia just to see how they were doing, or the kind of thing they had gotten into. I wasn't that impressed. They were competent enough, but there was this great animosity with the contractors; kind of "our guys are in one room while the contractor is in another room." You can never get any information that way. Every time they found something, it was like having a "got cha," instead of looking at a potential problem to be resolved. It was that kind of attitude that was very bothersome.

Anyway, they had the chore of training the Systems Command folks, and they were out there. In one case, AFSC went to RCA at Moorestown [NJ] for an evaluation. RCA wouldn't show them anything unless the PTC people left the plant. They said, "We will give it to the Air Force people, but we are not giving our information to the PTC people." Well, Colonel Roy Secum, who was in charge of Systems Command said, "Okay, we are not leaving the plant. We are going to

run this review." He dismissed the PTC people and said, "Okay, the Air Force people are going to do this."

Well, Fitzgerald was livid. He really got upset because those folks came back to him immediately and told him what had happened. I called the colonel to find out what happened. He told me his version and said, "We are not going to let them roll us over. The Air Force is going to stick in there, and we are going to run the review. They won't show PTC the information, but we are going to stay and get the information."

A: Why was RCA saying this?

D: They just didn't want to give it to another contractor; didn't want somebody else looking at the information. I don't know what the real reason was, but ostensibly that is what they said. Colonel Roy Secum was responsible for the overall implementation of CSPCS at Systems Command. That got bad. Ernie got on Roy. I guess the PTC people thought the Air Force should not have done that; they should have all walked out or stayed in there together. Roy wasn't about to do that, so they became really bad guys around there.

I took the brunt of all that because they were blue-suiters. It was like I was there giving directions or something. Well, I couldn't stand all that. I would try and explain to him what had happened and why they were doing it, and he wasn't having any of it. So things just deteriorated. Nothing that they could write on the subject or nothing that the Air Staff wrote could get through him. He wasn't buying



DRIESSNACK

anything, and he wasn't writing it himself. He was just criticizing everything that everybody was doing.

A: What about his boss, Ted Marks?

D: At some point Ted Marks left, and Tom Nielsen [Thomas H.] came in. Marks left Government and went back to California. Tom Nielsen was completely unfamiliar with defense contractors and the manufacturing facility environment. He was receptive to anything we were doing. If we went to visit somebody, you could show him essentially anything, and it was new to him. He was in a learning mode. When somebody comes in like that, it is important to make sure he gets a good grounding, which you try to do.

I was with him on a trip to GE one time with Ernie. Ernie was trying to convince him that they all kept two sets of books. Most companies have a cross-control system where people check in the work. In the system they had there, they punched a clock when they started the job. They finished the job, and they punched a clock. That is the way their hours were broken down for that particular task. They also punch a time clock; in other words, 8 hours a day for their payroll. The cost accounting determined how that work time was broken out. Ernie convinced him there were two sets of books.

Well, I don't think we ever convinced the Secretary that there weren't two sets of books. Part of the cost accounting was to shred out where that 8 hours went that the guy worked, or to somehow keep track of the work time. They were also punching a time clock for payroll purposes. If

you didn't understand that, you could easily confuse people or lead them to the wrong conclusions.

A: Was Fitzgerald civil service?

D: Yes. He was a GS-17 when he came into Government. He came in at the Deputy Assistant Secretary level as a GS-17.

A: Was he a political appointee?

D: Oh, yes. That level is, but he serves at the pleasure of the Secretary.

I left then and went to Systems Command for the specific purpose of implementing all of these new cost control systems and techniques that had been developed. I took charge of that over at Systems Command. That got to be an interesting period of time in that we developed the evaluation techniques and the guides that the evaluation review teams used when they went out and evaluated contractors' internal control systems.

In doing this, after we had some experience under our belt, we began to talk with the Army and the Navy about what they were doing. OSD was concerned with the three services doing three different things, which was a justifiable concern. They wanted to have a single system.

The draft of DODI 7000.2 was out, and people were commenting on it. Well, it fit right in with what we were doing. Industry didn't understand what was happening. They thought this was just another requirement coming out that was going

DRIESSNACK

to be very detailed. I spent a lot of time giving speeches, going to seminars, AMA [American Management Association] and AIA [Aerospace Industries Association] and NSIA [National Security Industrial Association] things, and explaining to them what the requirement really meant and how we were going to evaluate them. The concern was that the teams would all be different.

If you come out, that is one thing; but if you send a team out that doesn't know anything about this, how are they going to interpret our systems; so we essentially put out an AFSC implementation guide. About that time OSD decided they were going to sign a contract with one of the consultant firms on developing a DOD guide.

The Joint Logistics Commanders [JLC] was formed shortly before that. This was Army, Navy, Air Force Materiel Commands. We had Systems Command and Log Command; there was the Navy Materiel Command and the Army Materiel Command. We put this item in as an agenda item on the JLC meeting, and I briefed it. The JLCs decided they would take it on. They got a meeting with Packard [David], who was then the Deputy Secretary of Defense.

I briefed Packard on what we were doing, what the criteria were, the approach that we were taking, and the things that we had done up to that point in time. He said at the end of that meeting, "It looks like you all know where you are headed. You should continue on with this and report back to me"--I think he gave us about 6 months--"and let me know what the status is, and we will see where we go from there."

We did that. We went back and briefed him again in 6 months. I again was the briefer.

Meanwhile, we had briefings with the JLCs on status reports and what have you. At this point in time we had a couple of joint reviews under our belt that the services did together where we had the same contractor. We had developed a JLC guide at that stage of the game, and we were in coordination with the industry on interpretation of the data, the information, and the requirements. Packard was very pleased with what he heard at the second briefing, so he said, "So be it. That is essentially what will be implemented."

DOD never did put out a guide, so it became the JLC guide. A Joint Logistics Commanders' Guide was published, and it was signed by those four commanders. That stood for many, many years. In the past 10 years it has become the DOD Guide. By default they have taken it over, and it is now run out of OSD, but it is the same thing.

They still meet with industry on a regular basis. Once a year they meet with industry groups. They just met here a week ago, and I went to that meeting for the first time in many, many years. The discussion centers mostly on the implementation and people's interpretation, but the criteria nobody wants to change; so the criteria has remained essentially intact. I think back to those early days on what we were trying to do. We did it; it is still in being; and it has stood the test of time.

For the first 6 or 7 years of that effort I was either directly involved or responsible for it through people that

DRIESSNACK

worked for me. We tried our hardest to keep it from getting to be a cult. The criteria were the standard that we evaluated contractor systems against. I felt the more flexibility you had, the better off we were. We put out a series of reports, cost performance reports, different kinds of shred-outs; they are still the same. They have added some additional reports where you don't have the full-blown criteria, but you are just looking for status reports. They have a little different kind of reporting format that has evolved over the years. Essentially, it is basically the way it was developed 20 years ago.

A: You were over in Systems Command, but what happened when Ernie Fitzgerald went before Congress and in effect said Air Force had been withholding information from Congress, and the C-5 is a financial disaster? Did you get personally involved in all that?

D: I was at the Navy War College, and I read all that stuff, but I was never involved. Earlier we ran a review of Lockheed. It was a demonstration review of their Cost Schedule Control System. It was run out of Wright Field; the team came out of Wright-Patterson. I went down to get them started, to help lead that first team on the R&D phase. On that phase we collected a lot of information. The team was in a learning process at this stage; whether to evaluate functionally; whether to do it hardware-wise. We decided we would end up with a matrix. We did it both ways so that we could reconcile back to the hardware contract.

We came out of that meeting, as I recall, in the R&D phase saying--and we were only into this program now 6 or 9

months--"On the R&D contract it was a potential overrun here of \$80 million." That got briefed to the Secretary and the Air Staff. There was some analysis made, and Colonel Larry Killpack, who later became a major general, was a colonel on the Air Staff. He was the guy on the Air Staff that was working this particular problem. He did an analysis from the data that we provided and said it looked to him like it could be as much as \$120 million in the R&D phase. Ernie got all of these briefings. It was run up to his level. The question always was: Did he pass it on to anybody? What did he tell the Secretary? I gave it to him; he was my boss. I went off to Systems Command and then to the Navy War College.

Then it got into the production phase, and I think Ernie's projection was that it could be a \$2 billion overrun. Well, if you extrapolate what we did and put it into production, you could get out to some big numbers, but in that first review we were only looking at the R&D because that was the only contract they had at the time. Well, they had an option; they had the R&D and production as a single contract, total package.

(END SIDE 1, TAPE 5)

D: By and large the system was available. The system gave you visibility to be able to run those extrapolations on where the potential problems were if you didn't take some action. What happened to them or why they didn't, I don't know. I was gone; I was out of pocket that year, so I never got involved directly with his original war--with his testimony--over on the Hill.

DRIESSNACK

A: Was it making sense to you in what they were doing to build the C-5 as far as size and capability? Could it do what everybody said it was going to do?

D: Size and capability always made sense to me. The fact that it ought to land on a swamp was ridiculous, I thought, and the fact that it ought to land on the battlefield next to the trenches was a little ridiculous. The airplane is so big it becomes a national asset all by itself. To have this aluminum cloud come in over the front lines and land on the front edge of the battle area didn't make any sense at all. That was the kind of things it was supposed to do--be all and end all for cargo airplanes; and it was not a combat assault airplane. You cannot make this an assault airplane.

A: Aren't they talking about the C-17 doing that now? Talking about landing there on the front lines, and as you take the mortar rounds off, they can drop them right in the tube. I get a sense of deja vu here.

D: The C-17 is a smaller airplane, for one thing.

A: But it is to do what the C-5 was supposed to do.

D: They have different technologies. The propulsion system permits the C-17 to take off and land in much shorter distances. The plan for them is much smaller. You can turn it around on a ramp. You cannot turn the C-5 around on a normal ramp in Europe. You can only go into certain fields because it takes up the entire ramp. It is the only airplane that can handle some of the equipment that we take overseas. In the case of Israel bringing in the tanks, it

saved them; the quick response and things like that. Nobody else has an airplane that can do that kind of thing.

A: Being in the financial management side and this cost analysis side of building this airplane, could you stand up and say, "The added cost to make this thing possible to land on a swamp is not commensurate with its role as an aircraft"?

D: At that stage of the game, I was in the Secretariat. When we looked at the review of that airplane, there was a Secretary scrub team in the Pentagon that actually reviewed the C-5 source selection data. Dr. Alexander Flak [Asst Secretary for R&D] was in charge. We worked sometimes all night on some of that stuff in order to get it out in time to give the Secretary a briefing. I looked at the costs, the management systems and things; this was the area I had. People were assigned to different aspects of the review. Others looked at the contract; others looked at requirements, but we all kind of had a feel for what was going on. I remember looking at the bases around the world where this theoretically was supposed to land. It could land with a footprint, but you couldn't have anything else on the ramp if you wanted to turn it around. We kind of lose sight of that.

People today talk about deploying a B-52 to Europe; and I think to myself, "They have forgotten that this thing has outriggers when it takes off, and they don't roll on grass too well." They don't have very many fields over there where you can take off a fully loaded B-52, so people make



DRIESSNACK

statements for which they have absolutely no background or rationale for making them; they are just making statements.

A: There used to be a big argument to bring back the B-58. That was going on in the Air Force Association Magazine until somebody pointed out that the last one had been creamed and put in the smelter years before. The whole thing was academic; there was no B-58.

D: Well, I did go down after I came back from school to talk to the Lockheed people because I knew a lot of them. "Say, what happened? Why did you miss the estimate so badly?" They took the approach that a C-5 was a C-141 blown up. They thought it was just a bigger job of the same thing. It turned out that not only was it a bigger job, but it was a unique, completely different job. One of the problems that gave them fits was the titanium fasteners that they had in the wings.

I think we might have had half a dozen on the -141. They had 115, or some number like that, on the C-5. The fellow that was putting them in, the industrial engineer, said they had estimated 15 minutes per fastener. It took them 1 hour and 15 minutes. You can't miss estimates for standard hours by a factor of 4 or 5 and expect to come out with any reasonable cost; so it was that kind of thing.

How many places they did that, I don't know exactly, but there was one place where I was standing up on the wing with them looking at the job itself, the complexity of putting this tapered titanium fastener in there. They completely

underestimated the time and the magnitude of that job. That was where they got in trouble in production.

When they put the airplane together, they had a hard time meeting the final mates as they were putting together front section, aft section, midbody, and so forth. I remember going out and looking at the Boeing 747 being put together when they had their first major mate. That was really beautiful to behold! It was just like a hand in a glove. There was a lot of computer-aided design, a lot of automated machine tools that were being used on that airplane. They pioneered a lot of manufacturing techniques on the 747. They didn't have that kind of tooling down at Marietta when they were putting the C-5 together. All of those things just compounded [the problem].

A: Was that total package procurement contract basically an error; to try to encompass a whole weapon system from birth to roll-out at one price with all of the unknowns down the road?

D: A lot of people looked at that contract when it was being put in. It was touted as an innovative idea. They were going to hold the contractor's feet to the fire right through production. This was theoretically going to prevent him from buying in at the beginning and then making it up with ECPS [Engineering Change Proposed] and changes in a production mode. It didn't turn out that way.

One of the reasons it didn't turn out that way was because of inflation. There was an EPA [economic price adjustment] clause in the contract. As the EPAs were made against the

DRIESSNACK

CPIs [Cost Production Increase] as they went up, the price of the contract automatically went up whether the labor rates or material costs went up or not. Back in those days material costs lagged labor rates quite a bit. It was a long time until we actually saw material costs catching up with the inflation rate. The inflation rate was ahead of material costs. They could very easily have gotten well, but the EPA on that contract just assured it.

It is easy sitting here now looking back, but many of the same people that are complaining also had an opportunity to review the contract back in those days.

- A: Do you think they really didn't believe the contract was going to be held, then it became a political thing after a while? They threatened bankruptcy. I never did believe somebody like Lockheed could go bankrupt. This Henry Durham, a Lockheed employee, went public with supposedly all of these problems within the company. They even had him on "60 Minutes." Do you remember that?
- D: I vaguely remember him. I guess there is a modicum of truth to some of that. They see certain things in their areas that cause them some concern, but they don't know how to interpret them in the broad overview of the whole company or the whole process. It looks really bad to them, so they get concerned and report it. It is an understandable kind of thing. I always thought the hierarchy, the people in charge of Lockheed, were pretty straightforward folks. In any organization you have folks that don't want to tell you the bad news. They want to fix it. They can do it on their watch, and they don't want the boss to know about it.

A: Another question which can encompass your experience in budgeting; where did the General Accounting Office fit into Air Force budgeting and financial management of systems and acquisition? What is their role in all of this? Did you ever interface with them in the 1960-70 time frame at all?

D: I had an interesting interface with the GAO when we were in the process of implementing CSPCS. I was the Director of Costs at Systems Command at the time. We were training and writing a lot of the early documentation on the CSC criteria. We were training the three services' people. GAO hired a group of young folks to look at this particular area. There was no place in the world to get the training except our place. We were the only ones that had it, so they came over and talked to us.

I remember sitting down around a table talking with four or five of them and explaining the background of the criteria; why we did it, what it meant, what we were trying to accomplish with it, and how we were going about that. Six months later they wrote me up. In other words, it was their interpretation that we weren't doing this, or we weren't doing that, and it was just unbelievable. The student was writing up the teacher on the smattering of knowledge that they thought they had. Then they began to interpret what all of this meant. That is still the problem you have today, 20-some-odd years later. Many people think they understand what this is supposed to mean, and they haven't a clue.

Part of the problem you have with criteria that are very general; essentially it says that there will be a control

system. You will be able to add numbers. You have to plan from top down. You plan it in increments of work that you can measure performance against. This is all going to be done on what we call an integrated work breakdown structure. It will be hardware oriented and also functionally oriented, so you get down to where the work is being done.

You measure performance at the level of where the work is accomplished. You do this in a very straightforward, pragmatic way; not a subjective way. If there are standard hours or a standard cost system, you use standard hours earned, or you use earned value systems at the lowest levels for direct labor, at any rate. All those numbers have to add up. You have to go from top to bottom. There has to be an audit trail. It is a straightforward set of criteria that you lay on, and then you test that; actually go in and run an audit and test that.

When a review team goes in, the contractor wants to know, "Now wait a minute. You said there ought to be short-work packages. Well, what is short?" If the contract is a year, obviously we don't want one-year work packages. That ought to be maybe 30 days or something. If it is a 5-year contract, maybe there are 3 months.

Once a quarter we ought to at least measure some things. So then they said, "Okay, there can be 3 months' work package." There is nothing hard about 3 months. It is just that at least once a quarter we have got to take a quantitative measurement. Actually, they should be much shorter than that. They ought to be a matter of weeks, but it depends on the job you are doing. If testing takes longer than that,

etc., it depends on what the job is. Some jobs take a day or two, then that is what the size ought to be. You can quantitatively measure things every day; others you can't. Some are on a weekly basis; some are on a monthly basis.

But industry wants to know specifically what that means, so whoever comes in to evaluate them won't be straying off with his own subjective judgment on something. I have told industry groups that industry prevents the Government from having generalized criteria. You can't streamline. "You guys want to be very, very specific; and you kind of bring it on yourself. Then you get all this useless detail because you forced the specific definitions."

A: There is always a subparagraph to every specification.

D: It is very, very difficult to do that unless you stay on top of it all the time.

A: Did you ever have to deal with Ernie Fitzgerald later on down the road?

D: Indirectly. That office had the job, as the Secretary does, of providing guidance and direction; so he had kind of an oversight review of what we were doing in those earlier days, and also the reviews. We sent the reviews up to the Secretary. Ernie was the guy that looked at them.

A: When they let the contract for the C-5, was that before your time and in being before you got up to Systems Command and Secretary of the Air Force level?

DRIESSNACK

D: Oh, no. I was in the Secretary of the Air Force's office.

A: Would you have reviewed that contract?

D: No, I would not. It came through the procurement side of the house.

A: Do you think there were any lessons learned from that C-5 program?

D: Oh, yes; I'm sure there were. Scrubbing the requirements to start with in that kind of contract where you start something new, you never know what is going to happen. Had we been in a deflationary or recessionary type of a spiral instead of an inflationary one, they might have all turned out to be heroes.

A: I have a note here that says the Lockheed bid for the C-5 actually came in under what the Air Force estimate was to build that thing, and they accepted the bid. To me that would have been a red flag that either I was wrong and they were right, or they were wrong and I was right, or we were both wrong.

D: Given the advancing technology, we don't make good estimates because we don't have the data base on which to base the estimates.

A: In an airplane like the C-5, are you so far ahead of the state of the art that you are really talking about invention when you try to cost this thing out?

D: I think the magnitude of the C-5 and some of the complexity probably overwhelmed them somewhat. There is nothing complicated, though, about a C-5. It is a straightforward kind of airplane; it's just very big. The information that we have to make cost estimates on airplanes has to do with the weight. The more it weighs, the more it is going to cost. It has to do with the AMPR [Aircraft Manufacturer Planning Report] weight of the airplane and all of the data that we have had in the past. All of the data base is built up based on weight, and we have that in the system. The Air Force just had in front of it the -130 and the -141, so the C-141 data they had they extrapolated; of course this was the same thing that Lockheed did. Lockheed knew what we were doing, and if they decided they could cut that down a little bit more, they bid under.

A: Historically, has historic costs basis proven to be pretty accurate when it comes to systems purchase?

D: Let me say this: We very rarely underestimate a bid. On the other hand, a lot of those estimates get to be self-fulfilling prophecies. We make the changes during the course of the contract that make it come out that way. We add requirements to it, and it doesn't reflect the original intent or the original requirement of the airplane at all. It is a whole different thing.

My thesis is that technology should bring the cost of the basic aircraft or weapon system down; otherwise, we are investing in the wrong technology.



DRIESSNACK

A: Yes; somebody said eventually we would have one airplane. That is all we will be able to afford.

D: We just can't let that happen. Take a look at your home. Look at what we are playing with here [interview equipment]. What did this apparatus cost years ago--5 years, 10 years? It didn't exist 20 years ago. Now it is something you can carry around with you. We might have had a studio before. Look at a computer. We had a room the size of this living room full of vacuum tubes. Now you can have it on your desk.

Look at your TV; the imagery, the fidelity of stereophonics; your kitchens, with all its electronic equipment; everything you do; your car. The technology has brought the absolute cost of things down. This same thing should be happening to us in the weapons acquisition business. I have been preaching that for about the last 7 or 8 years.

A: I have never heard that brought forward like you are saying it.

D: Let me tell you a little story on the ATF [Advanced Tactical Fighter]. Truman Spangrud [Lt Gen, AF Comptroller] and I were talking at a social function one time here in Washington. In a conversation of how things were going, he said he was really concerned about the cost of the ATF; that Congress will never buy a \$55 million fighter aircraft. I said, "I agree with you. That is pretty high, but what makes you think it is going to cost \$55 million?" He said, "That is what our estimates show." I said, "Well, that is what the estimates show based on what is in the data base,

but you don't have the new technology in the data base." He said, "We have the F-15, F-16." I said, "But you have a lot of old junk in there, too. You don't have any of the new things coming down line. What about single crystal blades and some of those innovations in propulsion? A lot of people haven't even heard about them, but we are actually flying them. There is no data on them."

A: What are single crystal blades?

D: Just that: single crystal blades in the hot section of an engine.

A: Rather than those little metal fins?

D: They are fins, but it is a single crystal. They are formed out of powder metallurgy under pressure. When you have a single crystal, it means you don't have any stress lines, so it is not going to fail any particular place. That is in the latest 220 engine that is now going in the F-15. It will go in the ATF. So I said to him, "What do you have in the estimate for propulsion?" As I recall, he said, "It is 1.7 times the F-15, F-16 engine." I said, "Suppose I told you that it was going to be one or less times the F-15 engine in constant dollars?" He said, "Can you prove that?" I said, "Let me send you over some folks to brief you."

I asked Pratt & Whitney to send over a design engineer, a manufacturing engineer, and a cost estimator, the guy that did the pricing. They briefed him, and he spent a lot of time with them. Truman grew up in that environment, so he understands learning curves and all of the estimating

relationships. In fact, he gave them a little bit of a hard time in the beginning when they started, from the report I got back, because they were briefing some of the obvious kinds of things. Then they got into the actual metallurgy and the manufacturing process and the fact that they are already being manufactured and are flying.

The 2037 on the 757 airplane is flying with this technology, and now the Air Force has it in the new engine on the F-15. So they convinced him that this technology can be produced at lower costs, and the operating costs are much lower because this engine hot section can last for 7 or 8 years in the field. Instead of 1,800 hours, it is going to last for 3,000 tac cycles; that is like 8 years.

A: You raise a good point. I have never thought about that. I bought my TV set 12 years ago for \$500, 25-inch RCA. I can buy that same--better--25-inch set for \$400 today, which in real dollars is \$200, so you raise a good point: Why do we have this constant----

D: I have been asking people to look at that. If you make a cost estimate that is 1.7 times, we will make it 1.7 times. We are going to do something else to it. Anyway, Truman took that to the Assistant Secretary, Tom Cooper. As a result of that and some other things he did, I assume they concluded that the unit cost of the airplane was \$35 million per unit cost, not \$55 million. The promise of technology and actually what is in the inventory today is going to bring the cost of that down; new manufacturing processes, new materials, new engineering designs. All of that should

going to result in lower costs with higher efficiency and more durable, more reliable weapon systems.

A: That is funny because everything else, the high technology we have, is really cheaper and better today for either the same or less money; yet, the weapon systems keep going up. There is something wrong here some place. Are the manufacturers simply looking for a greater return on their money?

D: No, no. In fact, the return is lower than it was years ago. It is not any better.

A: And it is not more labor intensive.

D: In an engine, 15 percent of the cost input is hands-on labor. The rest of it is bought. It is material, processes, and things like that that are done with machines.

A: When you figure the engine that powered the B-29, the tooling, the hands-on that went on it must have been in the thousands of hours. That is really an interesting point.

D: I have a lot of people chasing that these days. I'm telling the cost community, "You need to do that." I have been giving speeches to Log Command and others, and I have been talking it. I'm still active in the Institute of Cost Analysis, in the National Estimating Society, the Performance Management Association, and some others. I keep bringing up these things to people. They say they need to challenge and look at that.

DRIESSNACK

That is what industry needs to do in the technology. The technology brings the cost down. Look at composites. We can build things cheaper with composites, and we are getting further and further ahead with composites now and plastic forms of things. We are going to use them in structural shapes. There is no way they can get a space station in orbit that is going to be made out of steel. It has got to be a lightweight material. Years ago we used to talk about magnesium, but it is going to end up being composites. It is inert; we don't have to worry about lightening or electrical conductivity or what have you with it; and it is very lightweight. We can make it into structural shapes so that you can take it up and assemble it. That is the kind of thing that has to be done. We need to continue to chase this and challenge those sorts of things. If you make an estimate that says the contractor came in under the estimate, I would say that is not a surprise.

- A: The implication in those days was, "Ah-ha, you bought in." That was the whole crux of the thing.
- D: I don't know where that estimate was made. It was probably with the EPA clause put on there, too, because they adjusted it for inflation; and we were into double-digit inflation in those days. The CPI was in double digit, and that just added to the contract.
- A: You mentioned the size and cost of the C-5 and clearing the ramp because there isn't room to move it around. Somebody was talking about the B-1 and said it should be treated as a national resource; and when they come in to land or take off, all air flying within 40 miles should quit, and the

ramp should be clear. They should be treated like battleships, like beautiful babies. What are they worth?

D: Over \$100 million.

A: How did you get selected to go to the Naval War College?

D: As I understand it, they changed the criteria for the National War College, and the Navy War College complained to the Air Force that they weren't getting the best students from the Army and Air Force. They wanted some below-the-zone colonels to come up there.

(END SIDE 2, TAPE 5)

D: Jerry O'Malley and I were in that class; we went up together.

A: Did I understand you to say you were in the same class down at Hondo?

D: No. He came behind me. I was in 52-George, and I think he was in 53-Easy, which was 6 months behind. We ended up at the Navy War College together, both pinned on our eagles when we were there in 1969-70. That was an interesting stint. I liked Newport, and it was run a little differently than the other schools. For one thing, we wore civilian clothes. I don't think they do that now, but in those days they wore civilian clothes. That was a shock because we don't do that anywhere. Although the Air Staff, at one time, wore civilian clothes.

DRIESSNACK

A: It used to be that Wednesday was uniform day.

D: That was something else, and I couldn't quite understand that. I forget who changed it to where we wore uniforms; maybe George Brown.

A: When I came to work for the Air Force in the early 1970s, Wednesday was still uniform day in DC. Was it coat and tie?

D: Yes, jacket and tie. I bought clothes up there. Fortunately, there were some outlet stores all over New England so that wasn't too bad. I bought a couple of suits and sport jackets that sustained me for the year. I thought that was an interesting assignment.

We had to write a paper at the end of the year. There were several topics, subject matter, that the Pentagon wanted people in the war colleges to look at. That is a good resource. You have a lot of folks in academia; you can do a lot of research, surveys, and a number of things. You are not interrupted by the phone or by the pressures of the day and can really work the problem. With that kind of talent around, almost any problem can be resolved in a year. At least you can do a reasonable study on it.

This is 1969, and you remember that era. We are looking at the all-volunteer force. Nixon had promised an all-volunteer force. The Gates Commission was in being, and they were looking at some way to implement this. We took this on. It was an assigned kind of thing. I already had a master's degree so I wasn't working extra on that.

A: Was there a local school to give that?

D: George Washington University. They had professors in-residence. We could talk about that a little bit, because I'm not sure that is the right thing to do. You detract from what you are really there for.

A: They did away with that at Maxwell in the middle 1970s. General Ray Furlong [Lt Gen Raymond B.] said, "The reason you are here is to go to Air War College and Air Command and Staff College," and he pulled the switch on guys coming down to get degrees; but now it's back the way it was.

D: The Navy War College pulled it for a while, too.

A: Do you personally think that would have distracted and pulled guys away from the Navy War College?

D: Some of the people that go there can't handle two schools at once; probably 50 percent. You can't be working on two degrees at the same time. If they are related and you are writing a paper for one that satisfies the other, sometimes that can be worked out. That's fine; you can do double duty with the same paper. There is no reason why you can't do that because you should get college credit for going through the War College.

A: But they were having to go to class at night.

D: And then they had homework and reading to do. When you go to the War College, we had a lot of reading to do. I found in the class in the morning that those of us that were not



DRIESSNACK

working on a degree were leading the class. We were leading the discussion. I read every piece of paper they handed out. I don't often do that, but I found that I had the time to do it. The four kids were up there with us, and they were in school, but I just went to the library and went through that stuff every day and found it somewhat interesting. While there, we went out on a ship. We watched the Marines graduate down at Camp Lejeune. They have a real amphibious landing, and that is their graduation, so we went down to take a look at that, which was interesting. We did some things that were different; went out on a carrier and came back to shore in a helicopter off the carrier.

A: Did you find yourself facing Navy airpower doctrine? For example, the single manager of air concept; the Navy and the Marines reject that wholeheartedly, even if they were put in charge of the air. They are against doing that for fear they would lose their assets. Did that ever come up in seminar?

D: Not that much. We found mostly there was a big difference between the battleship Navy and the air Navy. We sort of adjudicated some of those arguments.

A: Even in those days?

D: Yes.

A: Of course, they had just resurrected the New Jersey and sent it off.

D: For instance, the "brown water Navy," as Zumwalt [Adm Donald] called it; he brought the destroyers of the small ships back again as a result of Southeast Asia. He was part of that group. The submariners were in a class by themselves, so you had this big difference between strategies and who should be running the Navy or calling the shots. It was interesting to watch the whole thing.

A: You see them from afar as an undifferentiated group.

D: And the discussion that went on in the classroom or in the seminar as a result of that. A lot of it didn't have a lot to do with strategy. It had to do with management kinds of things that we were getting into in academics, and those were all common.

A: Did you meet any contemporaries that had been in the same comptroller, financial management, and cost analysis type thing?

D: I met a budget Marine lieutenant colonel who was in the budget business in the Pentagon.

A: Did you sit and talk with him about those things?

D: Well, when those topics were discussed, he and I kind of had the dialogue because nobody else was familiar with what happened in the Pentagon. When you read it in the book, it had this PPBS [Planning, Programming, and Budgeting System] on what was really going on, the way it was described to be run, and how you defend in Congress; so we told them how it really was and what really happened. We were mutually

DRIESSNACK

supportive, so his experience was similar to mine in the budget process. He was not at all in the weapons acquisition business, though. I think I was the only one around that was in that business. That was not a career field in the Army and Navy. It is now being made a career field.

A: How did they handle it?

D: Line officers, a lot of civilians, and a lot of consultants come in and write RFPs, evaluate proposals, actually run out and look at systems. They depend a lot more on the contractor than we do. We do a lot in-house with laboratories and test facilities. They have contractors, consultants, and so forth to do a lot of their work.

A: That may be why they got in trouble with the DIVAD [Division Air Defense], the Bradley, and everything else.

D: Could be. They bring line officers in to look at things, and they are more requirements oriented than they were business oriented; now they are changing a lot of that. They send a lot of their people down to Defense Systems Management College. It is now a requirement for program managers. They are trying to set up a career field of people to work that problem.

A: I was not aware of that. Historically, I thought they would be more into acquisition, R&D, and everything else more than anybody else.

D: The only service that really has a career field for program managers is the Air Force.

A: I wonder if that is because the Army was not a high-tech force until just a few years ago.

D: It wasn't a branch; where do you put it? I don't know who bought their stuff; AMC, I guess. They let contractors build it, but when you get very sophisticated with some of these major weapon systems that take a lot of integration, they just didn't have much of an in-house capability.

A: Do you ever recall any serious discussion about arsenal acquisition; granted somehow the Air Force owns a lot of the plants and the machine tools, but actually running a production line itself? The Navy has done that.

D: The Army does, too. They are Government-Owned, Contractor-Operated [GOCO].

A: So they have gotten away from any kind of arsenal where the Army actually----

D: But they are arsenals. Watervliet in New York and Redstone Arsenal in Huntsville [AL]; Rockford in Illinois is an arsenal where they actually make guns and ammunition. They are just contractor-operated.

A: At one time they actually ran the plant, as I understand it.

D: They made their own ordnance. Those have mostly turned into GOCO plants. We don't have that. The Air Force has plants

DRIESSNACK

that we have cognizance over that the Government actually built during World War II. We have some big plants around.

A: Marietta, Georgia, is one of them.

D: And Fort Worth, Texas, with General Dynamics; and we own a lot of Convair facilities.

A: When you went up to the War College, did you know you were coming back to Systems Command?

D: I didn't know at the time, but somewhere during the period I was told. Ken Tallman [Lt Gen Kenneth L.] was with Colonels' Assignments in Personnel; he came up, and we talked about where to go. He suggested I go back to Systems Command since that was where I had made a mark, and they wanted me back, so I said, "Fine." I came back as the Director of Cost Analysis at the Systems Command.

(BREAK)

D: At the War College the four of us wrote a paper on the all-volunteer force. That paper became the basis for legislation later on for additional scholarships. We postulated the question: In an all-volunteer force will we get enough officers to serve? A quick answer to that was based on a national survey. The answer was, "No. They would not." The conclusion was that if you were going to maintain a 2 1/2 million-man force, which was the Secretary of Defense's objective at the time--of course we have never done that since that point in time--then you could not get

enough officers to serve in an all-volunteer force without doing some specific things.

Essentially there were three things that had to be done. We had to raise the monthly stipend for the ROTC people. We doubled that from \$50 to \$100, and it has stayed the same since we made that recommendation. We had to double the number of scholarships. We found that people were willing to give 4 years in the service for the equivalent amount of education; so for a year of college they would give a year of service. Once you get them in the service, it is up to them or up to the service whether they can make a career out of it; whether they were motivated enough or liked it enough to stay on.

The other one was to fix the basic pay problem, and the Gates Commission was working on that. The perception was, if you are an engineer, you kind of perceive yourself as getting an engineer's pay as a second lieutenant. If you were going to be a shoe clerk, then your aspirations were somewhat less. If you were going to be a lawyer or doctor, then they were somewhat higher. They had to somehow come to the accommodation of pay. Well, the pay has kind of taken care of itself. We did double our number of scholarships, and we did raise the ROTC pay. That study became the basis for OSD legislation and recommendations to the Congress; it was approved, and it has stood till this time.

A: On a philosophical basis, how do you feel about an all-volunteer force?

DRIESSNACK

D: My personal feeling is that everybody should serve. In the kind of democracy that we have where everybody has equal opportunities, whether socially, politically, or economically, everybody benefits from society in an equal way; therefore, we ought to put something back into society. I'm not sure it has to necessarily be in the military, but it ought to be in something like a job corps, teacher corps, or something. It could be at any level of government, but people should not grow up in a society and think they don't have to contribute anything to make it a success. They just take; it's just a "gimme" kind of thing; and we have a lot of people like that. They don't put anything back into the system at all. That is dead wrong.

But I think the all-volunteer force itself is working in the sense that the kids I see are quality folks. They are bright, well-educated young officers, and are there because they want to be there. A lot of them have volunteered to be there because it is an economic step up for them from the environment in which they came. The services have a choice; they don't have to take them. We keep raising the requirements, and now over 95 percent of the enlisted people are high school graduates, and all of the officers are college graduates.

A: A fellow by the name of Hadley recently wrote a book about national defense posture. In his book he calls it "the great divorce"; that the leadership in the civilian side of the world, including the legislative staffers, have never served in the military. We are getting to the point where all these yuppies are growing up, and they have absolutely no appreciation of the uniformed service. Like myself, I

spent 2 years as an enlisted man. I think that gives me a little bit of insight or appreciation. As he points out, do you think that accounts for some of the problems you have had on the Hill? Of course you mentioned you have a bunch of retired military.

D: But very shortly we are going to have a lot of people over there that have never served--Congressmen and Senators. Ten years ago you could still go back and find people that had served in the military, but we are going to get to a point where none of them have ever served. The bulk of them will be lawyers, and they know nothing about the military; so it will be bad for us. It will be bad for the military system.

A: I have noticed there is a number of historians in the Air Force history program that, whether they did so deliberately or not, obviously were hiding out in graduate school during the Vietnam War. They chose not to serve, but they have no difficulty in coming in now to be a military historian, but they never saw any reason to put on a military uniform. There is a certain little dichotomy building here, and once again you have this same situation.

You are right about Senators; he specifically mentions that in the book; that there is a whole raft of young Congressmen who have never served and have totally misread what the military is supposed to do. They have no philosophical or historical basis. I find that true with newsmen. You can get a journalism degree without taking a history course now. Did you ever consider a voluntary force with a percentage of draftees?



DRIESSNACK

D: We didn't consider it in the paper. The thing about it was, the Gates Commission was working on pay only. It was an "economic" kind of thing. We said, "There is more than pay. There are other incentives that people have for coming in the service." We tried to get the scholarship thing. People will serve if you give them a rationale or reason, unless you have a universal draft or universal service of some sort, which is really what a democracy ought to have. That is what the country or the form of government is all about. I think that is the way we should have gone and the way we should go. Maybe some day we will have to get to that, but it will be a trauma. There would have to be a war for us to get to that.

If you look at the demographics ahead of us, we are going to have fewer and fewer teenagers so the competition for those teenagers is going to be kind of fierce between civil pursuits and coming into the military. One thing the military has, and people are hard pressed to understand it, and that is the opportunities for developing management skills, for developing leadership skills, for getting a technical education, whether they are officer or enlisted. It is a great, great proving ground for people. When one looks at the end of World War II and the leadership in the country after that, all went to school on the GI Bill. They all came out of that environment, and for the next 20, 30, 40 years this country lived on the leadership that came out of World War II.

When I went back to Systems Command and to Cost Analysis, there was a kind of three-pronged effort in Cost Analysis back in those days. One of them was the implementation of

the cost schedule control system criteria, that specification that I had put together and helped to implement before I went up there. That got on in a very formal way with the Joint Services under the auspices of the Joint Logistics Commanders.

The other one was, developing a cost information system of reports which ended up being what they called CIRs, Cost Information Reports, a DOD developed effort. We had to somehow standardize the information that was going in the data base. The object was to gather valid information from which to develop cost estimating relationships and be able to make better cost estimates of our weapon systems.

A: Any particular weapon system you were working on?

D: At the command we were looking at the overall system for doing this. We worked with all of our product divisions, better propulsion models, better aircraft models. Out at SAMSO in those days, which was the Space Division, they developed an unmanned spacecraft model. Later on we developed an electronics model. Those things are all essentially being used today. They are being refined, but the system was laid down on how to collect information, how to manipulate the information, and how to best develop estimating relationships and the discipline required, especially in the documentation, when you put an estimate together to make it more credible. We spent a lot of time on that.

The other thing that we developed was a sort of universal breakdown structure. That became a Mil [Military] Standard

DRIESSNACK

881. It was published by DDR&E. I just recently found where they are trying to revise that, but they are having a hard time going back to improve it in any way because there are just minor tweaks being made to the whole thing. That work breakdown structure provided the integrating framework which you would then tie all of the data base to. It was part of our original proposal when we were looking at a total management system to tie together the funding request requirements, the cost estimating requirements, and the cost performance requirements. We did this all on the same structure, which then essentially became contract line items.

A: Obviously the expertise must have varied between programs. I have a note that there was an Assistant DCS for Systems created for the B-1 and the F-15 alone, obviously being high visibility. Would you have been able to go to the F-15 program and monitor how good they were doing?

D: Yes; in fact, we did. I came back from the Navy War College, and shortly after that I went out to ASD at Wright-Patterson and became the comptroller. General Ben Bellis [Lt Gen Benjamin N.] was the SPO on the F-15 program. About that time we were instituting a new procedure which was called an Independent Cost Analysis, an ICA. It was developed primarily to test the reasonableness of the program manager's estimate. The purpose was to do an independent estimate by another body, and that was the comptroller's cost analysis people.

ICA had to be briefed as the system came on up through the various echelons and finally went to DSARC, the OSD final

review. The ICA had to be there a week or 10 days before the program manager got there so the OSD cost analysis staff could review it. It was the P&A staff in those days. They could look at that and make their own assessments or their own judgment based on the data that was provided.

I went up and explained that to Bellis. He didn't want anybody fooling around with his program. There was a kind of parochial jealousy there, and that was understandable. When I sat and talked to Bellis about it, his concern was that he didn't want my folks going into the plant and getting information that he didn't already have. He didn't want his contractors giving us information that they hadn't passed through him. That was a very understandable and acceptable challenge, I thought.

I said to him at the time, "I agree with you. What we will do, if we get anything, is either pass it through you; or you can have one of your people with us on the visits to make sure that whatever information we get you already have so that you have the benefit of that." We used that information and developed our own cost estimating relationships. We did ours mostly by using the parametric approach; built a model, extrapolated from the model, just as another way of testing the reasonableness of an estimate that the SPO made using a grass-roots approach, the should-cost approach, or whatever.

A: Is there a danger here that you can analyze too much? You have a paperwork reporting system----

(END SIDE 1, TAPE 6)

DRIESSNACK

D: There is always that danger. When people get a lot of finite information, they get to meddling into things that they don't really understand. You have second-guessing, and that is always bad. If you give the program manager responsibility to bring in the weapon system, then you ought to hold his feet to the fire and hold him responsible for it. If he delivers it, fine; he gets the rewards. If he doesn't deliver it on time, within spec, under cost, or he hiccups along the way through some fault of his, then fire him; get rid of him; put somebody else in there.

We have a tendency to want to meddle all the time. The more paper you get and the more reports you have to provide, the more staff people have to get involved with it. The independent cost analysis, though, was not a bad idea in the sense that while Bellis objected to somebody going out and kind of second-guessing in the beginning, the end result was that we were within something like 2 to 5 percent of his estimate, and he accepted that as support of the fact that he had a proper estimate based on an independent review that corroborated his accuracy. It was a comfort for him to have that done by an independent group outside of the SPO, and he accepted it in that light. Now, not all program managers did that. They objected to the whole thing being done; being second-guessed.

The people that did this worked for the comptroller. Later on, though, in that whole process we found that the Navy, where there was not a large program office like we had with an internal capability of doing something, [allowed] the ICA

team to make the estimate, and the program manager just adopted or accepted that estimate. That was the way they operated. That was not the way it was supposed to operate. There were supposed to have been two estimates made.

One, the program office made their own, and then the ICA team made another estimate. The differences always had to be reconciled, and they always had to be explained separately. We took on the technique also of, instead of having a point estimate, having bands of risks. If business fell off or some technical problem arose, we felt we could go as high as X-plus something. If things turned out a different way and you didn't have to have repeated tests and a whole series of things fell into place, then it could be as low as X-minus something, so we used to band the estimate as a part of a risk analysis that we made. Part of that risk was whether you got Congressional funding.

A: Up until this time had you ever testified over at Congress yourself?

D: No.

A: In 1970 Assistant SECDEF Packard came out with a defense management philosophy that the SPOs were supposed to be beefed up. There was going to be what they called "blue-line reporting" to the Chief of Staff and Secretary of the Air Force, fixed-price incentive contracting, cost reimbursement, risk probability studies, and costs and personnel would try to keep the SPOs in the job. This, in a large sense, seems to be repeating history again. Do you remember that?

DRIESSNACK

D: I remember it very well. The F-15 and the B-1 were blue-line reporting. The F-15 was blue-line reporting, and Bellis just went right on up through the chain. He kept General Stewart [Lt Gen James T. (Jim).], who was the commander at ASD, informed; but he went directly on up through the headquarters.

A: Did that work out well?

D: It seemed to work out. Again, I think it is a matter of personalities. If Bellis and Stewart were different kinds of people, that wouldn't have worked out; but the chemistry was right so it worked out. The folks at Wright Field at the time supported Bellis in what he did. Interesting enough, I made a study during that period of time at Wright Field because staff was supporting some of the smaller programs, and we were not giving a lot of support to the F-15 and to the B-1. We had a man-hour accounting system that had been developed out there, and General Stewart asked me to take a look at it to see whether we should bother with it. He never got anything out of it, so I looked at it. In fact, the fellow that was doing it worked for the comptroller at the time.

I said, "Unless we get some useful information out of you, there is no sense collecting this data; and unless we do get some information here in the next 6 months or so, we are going to cancel this whole thing. It is just a waste of time and effort."

We sat down to decide what it was we wanted and to see whether we could in fact do that with the data. Lo and

behold, when you threaten somebody with a job, they sometimes come up with some things that are kind of useful. I told them what I wanted. I said, "I want to find out the number of man-hours we are providing to each of the SPOs and the number of man-hours the engineering support is also providing." Out of that came a very interesting phenomena.

The B-1 and the F-15 were self-contained program offices, and it took a given number of man-years each year for them to operate on. We supported the cruise missile program, SCAD [Subsonic Cruise Armed Decoy]; eventually it got cancelled. In that program we [Comptroller] spent an awful lot of time. I think I had eight people working full time helping them with the total financial management scene; from the estimates to getting your performance measurement requirements put together, the control room; a whole series of things.

They kept asking for help, and we were providing it. Just looking at those programs--we [ASD] had the SRAMs [Short-Range Attack Missile] there at the same time; we had the SCAD; we had the B-1; we had the F-15; the lightweight fighters which eventually became the F-16; the A-10; the 30-mm gun; the Maverick--it was a very busy place; all of this was going on at the same time.

I always felt that we weren't giving enough support to the high-priority programs like the B-1 and the F-15, and we were giving it to the smaller programs. When we put all this data together from the man-hour accounting system, it turned out a major weapon system took "X" number of man-hours to properly manage it. They all had about the



DRIESSNACK

same. They were within a few percentage points of each other. In the case of the B-1 and the F-15, it was the SPO plus a small increment from the staff; whether from the cost side, the budget side, or the engineering side, there was a small increment.

On the programs that were not major SPOs; for instance, the Maverick or the SCAD, they took about the same number of man-hours on the program, but it was a small amount or half of the program office because they were much smaller, and a large amount of support came from the staff, from the engineering staff and from the cost and budget staff; so it was an interesting phenomena.

I presented it one Saturday morning at a briefing to General Stewart. I said, "Here is what has come out of this data. Regardless of how you hack it, it takes 'X' number of man-hours on a major weapon system to do the job properly to satisfy all the requirements. Whether you have it self-contained, or whether you have staff support of it, it comes out the same." I have lived with that statistic since then. I have argued that with people as they talk about the way other services perform.

As an example, the Navy has very small program offices, but they have what they call desk officers in engineering; and then they hire outside help. I will bet you a good drink that the number of man-years they put in on a major program is pretty close to what everybody else has to do, except they hire theirs from outside, and the bulk of their support comes from outside where the bulk of the Air Force comes from inside.

A: Why has that philosophy developed over the years? Why does the Army and the Navy seem to hire more outside than the Air Force?

D: They didn't have the manpower that was relegated to those particular slots. It is very difficult to justify manpower if you haven't done it before.

A: And as you mentioned, in what branch of the Army do you put the SPOs?

D: And you had the same problem in the Navy; whether they were all supply corps people in the Navy in that business or not, that is a problem because you don't have any weapon systems acquisition expertise.

A: Why do you think the Air Force decided to go the route it has versus not adopting what the older services did?

D: I think we were fortunate in some of the foresight of the leaders. General Schriever, more than anybody else, had the foresight to force that in. This was the way that he elected to manage the missile programs, and it worked for him. When he took over the command, that pattern, that model, had been set up throughout Systems Command. It was a new command, and the purpose was for weapons acquisition and the development, testing, and fielding of new weapon systems.

He had kind of a license in those days. It was new, he was building up, and he had the support of everybody in that arena, when you think back in that time frame. He had

DRIESSNACK

plenty of support. This was back in the missile crisis days, and we were trying to get a Minuteman in the hole, and a lot of things were going on. We had Sputnik behind us. There were a lot of things that were driving us at the time.

A: In 1970 Systems Command had a Project Reflex. It was to match work assignments and funds and manpower, utilizing the technical staff, and balancing in-house and contract efforts to prove lab capabilities by building technical skills in key areas. Dr. Johnny Foster seemed to be pushing this. Would that have been any part of your response to---- This sounds like what you were doing in a technical area rather than a cost and budgeting thing.

D: Wright-Patterson was a unique place. The technical laboratories were always there, even back in the old WSPO days. That balance was always a very cooperative kind of thing. I never saw any animosity or any professional jealousy or any competition set up, really. It was always in support of the major weapon system, and people always understood that. Whoever the commanders were at Systems Command, they kept that balance pretty much in tune. They all worked for the commander of Systems Command, so it was easy to do because they all had the single boss.

Project Reflex--we had Foster in DDR&E--had more to do with the effect on the other services than it did on us. We had other places that weren't geared the way we were. Eglin wasn't geared the way we were. We started ESD about that time, and we moved some weapon systems to ESD. The E-3 and the E-4 were moved to ESD, and program managers and people actually went with them; missiles went to Eglin out of

Wright Field. The only one that stayed was the Maverick, but all other tactical missiles left. Eglin was where those program offices were going to be. Maverick was so far down the road that we decided not to move it; just kept it there until it finished up. Of course it went on and on and on with different versions of it.

A: There was quite a bit of controversy in the Air Force at this time about the establishment of Air Force Test and Evaluation Center [AFTEC] out in New Mexico. I gather the Air Force really thought they were doing that already, and the DOD really imposed that on them. Do you remember that?

D: I remember that very well. In the C-133 days one of the responsibilities I had was flight test. We had test pilots at Edwards fly the airplane, and I went out and flew with them. One time I went out for a week or so and just flew flight test with the crews. Toward the end of those tests--once the airplane is proven and the systems are proven--you start putting together data for the Dash-1 manual on how you are actually going to operate this airplane, instructions for the pilot, emergency procedures, and fuel consumption tables are developed and put in.

When you get into that era, you bring in the operating commands' crews, so MATS' crews came in, and we flew. During the time period that I was there going through this test phase with them, one evening I would fly with the Edwards crew, and the next evening I would fly with a MATS crew. That way we got the operators as a part of the test effort. We flew simulated missions; that is, the duration. If they had a trip to Hawaii or Japan, we flew through the

DRIESSNACK

southwestern part of the country, but we flew long enough and through the kind of legs that the MATS crews would have; we sort of simulated that.

In that sense, we thought we always had that [AFTEC]. When DDR&E imposed this on us, it was taken out of the Edwards flight test environment and put in as strictly an operator's environment. They took over in a completely different way. They were not essentially test pilots. They came out of the tactical, strategic, or MATS commands. It was a little bit like the Navy where you give the ship to the white hats and let them take it to sea. The contractors disappear; they can't go to sea. The white hats take it out on a shakedown cruise, and they sink or swim. They sail the ship and get all the things they would normally experience in an operation environment. They have to figure out whether all of the manuals and documentation work properly.

A: This was the argument; that ASD and the using commands had already been doing this, and it was just another imposition. But the other services apparently had this, and the DOD [thought the Air Force should have it].

D: The Navy had a different approach where they had the white hats take it to sea, after they ran some trials with the contractors on board. I always felt down at Patuxent [Naval Air Station MD], and as far as the air arm was concerned, they were doing about the same thing we were doing. I'm not sure that added anything.

A: Well, this was the argument.

D: Our test pilots went on to other things. You don't die as a test pilot from old age. You don't stay out there forever and work as a test pilot. They move on into other areas in their careers. They go on into TAC, SAC, and other places. From time to time those people show up at test pilot school, and people that had been to that school were scattered all over the Air Force. They have come out of the flying environment. In order to even get into the school, I think the requirement was 1,500 hours, and you don't do that by sitting at Wright Field. You are out in a tactical or strategic or MAC environment, and you understand that side. It is a little different.

I think there was a case of wanting to politically separate that. They ended up with a test director in DDR&E. He had a person that actually reported to him, but it was just one other nail that the program manager had to put up when somebody took his vehicle out of the flight test environment, then they put it into another environment, and had to test it there.

A: In the early 1970s there was a great deal of money given to the Air Force for RPVs [Remotely Piloted Vehicle]. The Air Force used them in Vietnam a little bit, drones and RPVs, but the Air Force has never really seen these as much of an end to anything. Is this philosophical because there is no man in it, or is it a technical problem?

D: It is certainly not technical. I think it is because of the idea that we have to have a man reporting back. Also, if you have a vehicle that doesn't have a cockpit in it or a place for a man, there are people around that feel it is not

DRIESSNACK

going to work as well or it is a piece of ordnance, and it is not really added to the inventory, which is kind of foolish. I think the RPVs have been used very well by the Israelis. We used them in Southeast Asia, and they brought back good information.

That is a whole area of technology that we let get by us. We had something going, and we just let it go. There have been lots of little drones and things like that that can go against radars and home in and saturate the battlefield that we have talked about from time to time and actually got started with. We had some joint efforts going with the Germans on some of these drones, and we kind of dropped the ball. It is a cheap, economical way to get the job done, and technically we can do whatever we want with them. You can take lots more risks with them. Today we have the control systems; we have the feedback loops either through satellite or direct radar or TV linkages. There is no reason we can't use them for reconnaissance. Any kind of sensor can be put on a drone and run over enemy territory.

A: And you say it is more a philosophical thing than anything else.

D: It certainly wasn't technical. There was a group of folks who just wanted a man in the cockpit.

A: What about the old argument--going back to when they were developing the missiles in the Air Force--that there was a reluctance in the Air Force to embrace the ICBM and the short-range missile because this would eventually lead to "a no-bombers type thing"?

D: If there was, I never saw it. As I sat on the Air Staff Board and on the Council during my time, we traded off requirements, but there was never a competition. There were some missions for which an unmanned missile, an ICBM or a short-range missile or a stand-off missile, was a solution to the problem. There were some places where we had more flexibility with the man in the cockpit.

Recall is an example; the ability to go to alternate targets if you wanted to; the ability to fix malfunctions in flight; things like that where adjustments could be made; much more flexibility. Also, you could go conventional or nuclear with a manned bomber. You had that option which you don't have with an ICBM, so it was there for a particular deterrent capability and a particular offensive capability, and that was it. The ICBM was a single-mission kind of weapon system.

A: When you came back to Systems Command in 1970 after you left the Navy War College, Maj Ron Terry was given an award for development of the gunship. I have read that there was a great deal of consternation on the part of TAC of arming "cargo ships" and making them weapon platforms. In fact, General Momyer was very adamant about it. I have heard tales that he was directly ordered, "Yes, you will accept these in TAC." Was there a battle going on about that?

D: I was at Wright Field when Ron Terry was there. I didn't hear about that battle. The folks working the problem were interested in trying to get that thing working, first in a C-47 and then in a C-130; to get the gun and get it tracking properly; to develop the tactics; and to have a bigger gun



DRIESSNACK

with so much firepower could be brought to bear. They used airpower to take a land gun airborne and spray it around. It was kind of devastating; and then they used some night sensor goggles, sights, and things and got some pretty fair accuracy. All of a sudden out of the dark here comes this firepower that they couldn't believe, and it was fairly accurate.

They did an amazing thing in a short period of time, and they proved that it could be developed in a quick period of time and get put into the battlefield. That is what happened as opposed to the 7 or 8 years it takes to get a major system if you are going to start from scratch and develop something. Had we put out an RFP for something like that, we would probably still be working the problem. It was done there in the shops at Wright Field, and the whole thing got put together and tested and taken out to combat.

A: You raise a good point. In the R&D world, the acquisition world, and weapon systems development in the Air Force, is there a tendency, because something can be done, for people to want to do it? If you can fly low level at night with terrain-following radar, will they build an airplane that can fly at night with terrain-following radar, even though there may not necessarily be a mission for such a product? Does R&D drive a weapon system in that sense; or the technology that new inventions will force people to do something simply because it can be done?

D: If R&D produces some technology, we will find a use for it.

A: The laser-guided bomb is a good example. Who in the world would have ever thought that control of light would lead to a device that weapons would guide onto?

D: And we will find a use for it. I think that is like any good engineering. For instance, if you come up with a new metallurgy, something like single crystal metal, we say, "Now where can that be used?" By George, if it extends the life of something in a very tough environment, which is what you find in a hot section of an engine, then you say, "We can now design to a point where we can use these," so you find someone to manufacture it. When we learn to manufacture it, then we can mass produce it. That leads to a much lower operating cost in the field; much lower spares requirement and so forth. We then write that technology into our requirements and say, "Hey, we would like to have something that is going to last 7 or 8 years in the field."

Without the technology we would not have been there. You couldn't have written the requirement. Maybe in our wildest imagination we wouldn't have thought about it as a basic requirement; but in fact, the technology is here so it is something we would like to have.

A: General Brown [George S.] took over Systems Command in 1972. Was there a noticeable difference in how things operated; what the impetus was? He wasn't an engineer or scientist by profession, was he?

D: No, he was not an engineer; he was not a scientist. As far as I know, he didn't have any formal management training, and you wondered why they even put him in there. I was at

DRIESSNACK

the first staff meeting when he was introduced to the command. When George Brown walked in the room, I and everybody knew we had a new leader.

A: He had that presence?

D: Absolutely! I never became as totally dedicated to any particular person as quickly as I did to George Brown. He was a quick study. Here he came out of Southeast Asia. He has an operational background all the way. He goes over to Systems Command, and he got his fourth star with us. He takes over that command like he was born to it. The kinds of questions he raised were the operator's questions, not the technical questions. He raised common-sense questions because he didn't understand all of the technical nuances.

A: Was he brought in because there had been a plethora of engineers? Had Systems Command somehow lost an operating view?

D: I have no idea why he was brought in there; but at the time he was brought in, it was good for the command; and obviously later on it was good for the Air Force.

(END SIDE 2, TAPE 6)

D: To say that a different way: When Davey Jones got to be the Chief and Brown was the Chairman, Davey Jones came out to Wright-Patterson. There was a series of briefings for him and an evening affair where he talked with some of the selected members of the staff, a small group of people like the DCSs and so forth. I was a part of that group. Jones

told us that George Brown had told him that before he got in the saddle too hard as the Chief, he needed to take a trip to Systems Command and go through the whole command--flight test and development phases--go down to Wright-Patterson and see what they were doing to get an appreciation or understanding of where weapon systems come from and the complexity of that problem.

I thought that was pretty astute on the part of George Brown because he had been there. He wanted to make sure that the Chief had an awareness of what was happening because his biggest problems were going to be not in operations but with the Congress and with the problems attendant in the development of major weapon systems. That is the problem that has plagued every Chief, except a wartime Chief, who has been in the job.

- A: John O'Neill [Lt Gen John W.] was the Vice at Systems Command, and Lew Allen [Gen Lew, Jr.] was the Chief of Staff. O'Neill was an engineer type, wasn't he?
- D: He came out of ESD, and he went from ESD to take over SAMSO [Space and Missile Systems Organization]. When he took over SAMSO, that is where he got his third star. He ran a special 60-day problem-solving task force the summer he was assigned out there. People looked at every aspect of SAMSO. SAMSO was a new organization that had been put together by combining space and missile divisions. We had a Ballistics Systems Division [BSD] and a Space Systems Division [SSD]. It got put together in a single command, and it was a three-star command. He got promoted from ESD and went out there.

DRIESSNACK

I was part of that summer study that we had. It lasted 2 months. We all gave up our leaves. We traveled around the country; spent most of the time out there; wrote a big report, and that became the basis of the kinds of problems that he had to solve during his time out at SAMSO, primarily Minuteman. Minuteman had some problems at the time. We had enough shelf life on the Minuteman now that we began to find some cracks in the propellant. The concern was, "What do you do about it?" We went through a lot of problems like that. I learned a lot that summer because I had been involved with airplanes; never had much to do with missiles. I was selected because we were looking at management systems also, and I was a part of that team that reviewed the management approaches, the management systems, and the information systems that were being used by the contractors and by the new command. We put all that in perspective.

A: Was part of that study moving that whole thing to Norton [AFB CA]?

D: Not then; that was later. We were still at El Segundo where the headquarters was at the time.

Then he came back and was the Vice Commander of AFSC. He was an outstanding Vice Commander.

A: We interviewed him years ago, and within a year after we interviewed him, he had a heart attack and died. He wasn't very old at all.

D: He told me, "Never retire. Stay on active duty as long as you can because the statistics are terrible for retired

general officers!" Within 5 years after retirement they are gone. We couldn't quite figure that out. John O'Neill's son, Jack O'Neill, was a surgeon in the Air Force, so it doubly shocked everybody because he had a heart attack. He became the head of the Armed Forces Relief and Benefit Association and was doing a good job there.

I saw him at two or three funerals over the next year or two right after he retired. He said, "This is a terrible way to meet or get together," because I had worked for him. That was when he advised me to stay in uniform for as long as I could. He was looking at it from an insurance standpoint, and he said, "The statistics are absolutely terrible!"

He was a great person. He had a good feel for management, and he had an outstanding feel on how to handle people. He could motivate people. He had a select group of lieutenants at SAMSO. The AFSC unmanned spacecraft cost model was built during his tenure out there by this group of lieutenants. One of them became his son-in-law. They did an outstanding job, and that model is the basis for the update that is done each year to this day. What they had set up and the approach they had taken proved itself over time. He created an environment in which people wanted to work, and they wanted to satisfy him.

A: He had a B-17 throttle control pedestal on his desk. It had been chromed up and was very nice.

In the fiscal year 1973 budget there were a lot of program deferrals and reduction in R&D budgets and so forth. Any particular reason why that happened in this time period; or

DRIESSNACK

was it just a case of the country being in a tight period?  
Was this the famous Vietnam draw down?

D: I think that affect always occurs after a major confrontation. It happened after World War II, after Korea, after Vietnam. One would expect a certain amount of it, but on the other hand that is the time when you ought to be doing your R&D and looking for more efficient ways of doing things; so you ought to be spending R&D money. The time to spend R&D money is not during the war years. That is when you ought to get the operational things going and buying hardware. We should have been investing in the R&D at that period of time.

A: There was a great deal of TDY at ASD in calendar year 1972. There was a great encouragement to travel and to get into the field. Was that true?

D: That is interesting that you mention that. One of the problems I had as a comptroller out there was handling that money. It was in a separate account, and we had to figure out ways of keeping money in that account. In some cases we transferred money from the program office account into that account because all their travel came out of that particular account. It paid for the travel and the TDY in the operating divisions of Systems Command.

The philosophy of General Jim Stewart was: "You don't get much done sitting at Wright Field. You have got to get out to where the hardware is being built. If you want to manage the contractor, you have to go to his plant." Frankly, I agreed with that, so as the comptroller I was very

supportive of getting travel money. I was successful in being able to keep that going. We figured out ways to make sure people had enough money to get out and actually get their hands on the hardware and effect change where the work was being accomplished.

My C-141 experience was that you couldn't really manage a program unless you got in the facility, in the plant. You couldn't do it back home. You ought to see on a day-to-day, or regular basis at least, what was going on.

A: Have you ever gotten into trying to demonstrate how stretching a program out eventually costs the program more money? Have you ever tried to solve that problem?

D: It has been a problem, and it is a truism. The more you stretch it out, the more it is going to cost you. If what you are paying for is keeping facilities open, it costs you millions of dollars just to keep the lights on, heating and air-conditioning on, and the door open. If you can do it in a shorter period of time, it is going to be a lot cheaper for you. Like any construction job--time is money.

Stretching it out the way people who look at funding are concerned, or the programmers, always bothered me in that instead of buying 50 airplanes this year, they would say, "Okay, let's stretch that out to 20, then we will buy 25. We will keep the line open and the factory open." They don't understand that the cost of that just drives you up the wall. We could have gotten much, much more defense for the dollar by buying out the program on an economic basis. Whatever the tooling was set up for, we would buy it at the



DRIESSNACK

optimum economical lots and close the door or get on to the next one.

A: This becomes more of a political decision.

D: A lot of it does, especially when you hit the end of the line. When you are approaching the end of a program, then they want to keep the doors open, and they slow down the program to keep things going. I think on the F-111 we were building one a month. The factory at Fort Worth covers 1 mile under roof. How do you do that? There is no economical way of doing it. They figured out all kinds of innovative ways. They closed off half the factory, turned the lights off in the area, tried to run half of it with back shops, but that is an uneconomical way to do it. That is a pure political decision.

A: In 1972 the F-5E flew, F-15, and T-43A. What is the T-43A?

D: That is the 737 that was reconfigured and used for a navigator trainer.

A: The A-7 was deployed to Southeast Asia. The A-10 was selected over the A-9. Was that the right decision?

D: Quite frankly, I wasn't impressed with either airplane. The Gatling gun on that airplane is the impressive part of it. The firepower is devastating, absolutely devastating.

A: Uranium depleted shells and all that.

D: That Gatling gun with that huge shell is a tremendous, destructive force. It is unbelievable the devastation it wreaks. To get that kind of gun in the air in an airplane, I guess it has to get into something that doesn't look that pretty. The philosophy of the two airplanes was different, just the opposite. The engines on the A-10 are mounted high in the tail. The object was to get it out of the FOD [Foreign Object Damage] because it is going to operate close to the front on unimproved strips, although it is a big airplane. It has a high cockpit, and for a fighter it is a big airplane.

It has a titanium bath tub around the cockpit to keep the pilot from getting hot pants with ground fire. That would work under certain conditions but not others; 23mm is pretty devastating. It can take that sort of stuff; whether the rest of the airplane can take it is another question. We tested it; actually fired 23mm into the fuel cells. There was a bathed-in foam all around the cells that just suppressed the fires. We ran those tests at Wright Field; just fired the 23mm into them. There would be a small flash of fire, and it would immediately be put out. It would go away. That seemed to work pretty good. But their control systems and other things such as ordnance could be set off.

All sorts of things could happen to the airplane or the pilot. It is very vulnerable because it is not a fast airplane. The thing that bothered me about the two airplanes when I first saw them out at Edwards was that the engines were way up high, and in order to maintain them, you had to lower those engines. They had a system built in where they would actually get lowered down. You couldn't

DRIESSNACK

get up on ladders and work on them because the objective was to be able to work on this in the front forward area; so now you have to have all of this ground support equipment out there, which was kind of ridiculous. They had a scheme whereby they lowered the engines, and you could work on them. The object was to stay away from the FOD.

On the other hand, the A-9 took maintenance into account, and the engines were chest high so they could handle the engines, but it was a vacuum cleaner on the runway. If you were going to handle this on pierced-steel planking or aluminum planking or up in the front area where runways are not swept, you would suck up all this FOD. That was Northrop's approach. We couldn't quite figure out what they were getting at. Both of them were terrible-looking airplanes from a clean-line, aerodynamic kind of thing; but it was going to be a front-line workhorse, and it had to carry that big gun, which was the other problem.

A: Who wanted either of those airplanes? Was this something Congress wanted?

D: TAC had a requirement for a front-line support airplane or a ground-support airplane. We had never built a pure ground-support airplane. We were now in an era where we had an air-superiority fighter, which was the F-15. We had a ground-support airplane, purely, which was the A-10; and the F-16 was supposed to have been the swing airplane. It was the low-cost version of the high-low mix, and it could do the air-to-air mission, and theoretically it could do the air-to-ground mission; so it would be used as the swing airplane. We bought a limited number of the high-value

F-15s and a limited number of the A-10s and supposedly a lot of the swing airplanes that could go either way.

For the people that fly the A-10--and I have been over many times when we first deployed it to England at Bentwaters-Woodbridge, to see where they operate--everybody is in awe of the firepower. It's survivability in the battlefield is something else. Fortunately, we finally shut that line down, bought that out, and it never did get extended even though politically they wanted to continue to extend it.

I think the F-15 is the best airplane we ever designed. It was designed as an air superiority fighter. Having been a fighter-bomber pilot, the first time I looked at that airplane I thought, "Man, would this make a great air-to-mud airplane!" It is a big airplane and can carry a lot of ordnance.

As an example, we finally went with conformal tanks on that airplane. It was a modification called PEP 2,000. Cheek tanks were put on, conformal tanks, that didn't detract from the aerodynamics at all and could be put right in the airplane. We had to build some hard points in it to start with. It added 2,000 pounds of fuel, and it also had hard points on those tanks where you could hang ordnance.

I was the Director of Budget when this came up. Well, based on my own experience, I felt this was a really important thing to do. I went over and justified and defended the rationale for putting this in the budget that was already in existence. We went in and got a supplemental and didn't wait for the normal course. We got that a year ahead of time

DRIESSNACK

than we normally would have. That was one of the better mods we have ever made to the F-15 or to any airplane. They are all built that way today with conformal tanks and the capability to put on conformal tanks or not.

- A: Did you ever get into this fight that still seems to be ongoing today, although the visibility is lower, of this lightweight fighter. There is a school of thought where some say they would rather have 10,000 unsophisticated little airplanes flying around than 1,000 F-15s. Did you have to take sides on that?
- D: No; I never got into that argument. I guess a lot of that depends on what your experience has been. There was a discussion that went on about putting up 10,000 little drones to saturate the battlefield. What happens if it draws all the missile ground fire? You just run them over the targets and let them crash into tanks, marshaling yards, assembly points, radars, and so forth. You can't let that happen, so you have to shoot them down, or at least you fire at them. You begin to deplete all of your missiles and then come in with manned aircraft later on. We could have built those things cheap.
- A: What was that fighter somebody kept pushing that looked like a World War II P-51?
- D: It was like the Enforcer or something like that. It was a P-51. It was built in Florida. A guy went to Congress, and Congress made us go buy a couple of them. Piper built it; they bought out the rights to it. It was a ridiculous sort of thing. Here was the lightweight thing, cheap, and they

are going to build a fighter airplane. It wouldn't have lasted a half hour in combat.

A: They had a fly-off between the F-16 and the F-17. Was the F-16 the better airplane in retrospect?

D: Probably have to ask Bill Thurmon that question. Either one of those airplanes had tremendous flying capabilities. It turned out the F-16 had the edge in the final analysis when all things were considered.

A: You became comptroller out at ASD in 1972; replaced a Colonel Collier. It seems you had more civilians in your office than one would find at, say, Systems Command. Was that true?

D: The comptroller business lends itself to "civilianization." We had a lot of civilians. The cost analysis community was basically civilians; the budget community was basically civilians, and it is that way today. The Pentagon is that way. In fact, by law the Comptroller reports to the Secretary; so the Comptroller always had to wear two hats.

A: Did fly-before-buy now become the big thing?

D: It was during this Packard era, and we were into the prototyping of fly-before-buy. One can't fault what happened as a result of that if you look at the F-16 development. The argument there is that you spend quite a bit of time building the prototypes, and you let the contractor go. You don't burden him with a lot of specs and a lot of oversight management. He builds the weapon system. He has the

requirement, and he goes and builds it; and then you fly it. You put it through its paces. You make it satisfy in actuality the kinds of things that you have laid down on paper as requirements. He knows he is going to win or lose based on whether he meets that requirement or not; that plus his management approach plus his costs and so forth are going to determine how he is going to make out. Actually flying the hardware is the idea behind it.

Once you decide on who the winner is, then he has already built something. He has tooled to build it, and now you enter into production. You are into full-scale development with additional tests and into production. You can do that much faster, having once built a prototype. Proof of concept has already been proven, and you can just get on with the business now of building the airplane.

A: With the F-15 there was no fly-off. In retrospect, do you think you can come up with a weapon system like you want without proto-typing? Obviously it has been done.

D: Sure. We didn't prototype the C-141; it depends on the weapon system. It works in lots of areas. We used it later on when we changed out all of the base computers; supply computers, and those used by the finance side of the business, the comptroller side. We had a "compute-off." It was done by the folks down there at Gunter [AFB AL]. We set up a program office and actually had the majors--Sperry, Burroughs, Honeywell, etc.--compete for that. They had to set up a configuration and transfer the systems and run the systems on their computer. By our calculations, we saved a

bunch of money. It cost us \$40 or \$50 million, and we saved 10 times that.

A: So once again you have to sell the idea that spending money is going to save money.

D: It takes longer up front; you do more planning up front, but then in the execution, theoretically, you save a factor of 10, 12, 15. There is something to be said for that in the right place. You can't always do that, and I think there is a place for concurrency. It depends on what the exegeses are; what the emergency is. Take the gunship; they just did it. The prototype went out to the battlefield.

Look at the space programs. We don't have any production models per se. The first spacecraft goes up. A satellite goes into orbit, and it functions. Some of them are still there. It was the first off the line, the first of its kind. It goes up for the first time, and it must work because you are spending an awful lot of money; not only for your proof of concept, but you also have the operational satellite. Essentially, there isn't any room for building a prototype.

A: Years ago I interviewed General Howard Davidson; he died in his nineties just a few years ago. He was saying out at Wright-Patterson years ago he and his buddy were going to make parachute jumps to learn how to do parachute jumps. On the morning of the jump, they talked it over and decided why bother to do something you have got to do right the first time anyway, so they were able to get out of doing that. It



DRIESSNACK

dawned on them you either do it right or you do it wrong anyway.

Schlesinger [James R.] became Secretary of Defense in the summer of 1973, and McLucas [John L.] became Secretary of the Air Force in August; George Brown moves over to be Chief of Staff, and General Sam [Samuel C.] Phillips comes over. Did this create any changes in Air Force emphasis?

D: I don't think so. I was a little disappointed. I went to the command in 1974 and was promoted to BG at Wright Field in that job; then I went up as comptroller at Systems Command. I thought Stewart would get that job as the commander when George Brown moved over to the Chief's job. Having been on his staff and a real admirer of Jim Stewart's, I was a little disappointed. That was short-lived, and Sam Phillips was an outstanding commander. Technically, he had an outstanding background. He ran the Apollo [program].

(END SIDE 1, TAPE 7)

D: I have no knowledge of how he got selected at the time, but I suspect that he had a lot more visibility in Washington as the manager of the Apollo program, which was very successful, and he was right here in Washington. He had a lot of political visibility here. I suspect the folks that finally made that final decision thought we needed somebody with that visibility or somebody with the political clout in the Washington arena. They were two competent people.

I didn't know Phillips that well before. I got to know him very well in that job and got to be a real admirer of his. I think he did an outstanding job. He had an understanding for the technical side. He had an understanding for program management because he had done it. He had an understanding of the political arena because he was constantly defending his program on the Hill, and he worked well with the contractors.

NASA has a whole different approach. They get more intimately involved than we do, and they depend a lot more on contractors than we did at Wright Field, as an example. Those people in the space business depend a lot on Aerospace, just as ESD depends on Mitre to be that kind of third arm. At Wright Field we didn't have that. We did our own technical assessments because we had the laboratories. This was the birthplace of all this technical expertise and the management expertise or innovation, so we never had other people to really intercede with the contractors. We did that with direct interface.

A: Do you think there is a place for these not-for-profit corporations?

D: FCRCs [Federal Contract Research Center]--yes, I think there is; otherwise, we would have to develop that capability, and they would be on the direct Government payroll. Theoretically, you can get an objective viewpoint from folks like that because they have hardware exclusions. They are not going to build the hardware, and they are there purely to be technical advisors. I think the caution that I always have against folks like that is that they get to think they

DRIESSNACK

are, in fact, responsible for the program or we give them too much authority. Depending on the kind of leader or manager that we have in the program office, we have a tendency to lean too much on those folks as opposed to making our own judgments on some things. They both seemed to be pretty good outfits, and it worked out fairly well.

A: So it isn't a case where they have operated with too little supervision or anything like that; it's more a tendency for them to get into your area in the operation of the program.

D: I'm not sure that they do. What I'm saying is that there may be a tendency on the part of the Government people, the Air Force folks, to lean too much on the Aerospaces and on the Mitres. If you don't have the resources yourself, but there is money on the contract, you let him do something; you let him take the TDY trips; and you ask him to make the viewgraphs, the charts, and things like that. Pretty soon it doesn't get to be your program; it gets to be the FCRC's program.

A: Have the companies been happy with the Mitres and the Aerospaces, like Boeing? Have they seen a problem with these not-for-profit outfits?

D: I think they grew up with it on the West Coast in the missile business. Aerospace, Rand, and TRW was part of it in the beginning, but they sort of grew up with that. The Mitres, the Lincoln Labs, and the folks in the northeast in the electronics arena have grown up with that, and they accept them. I think they are accepted as professionals. I have never heard of a real problem.

A: Out at ASD did you end up spending some money or getting involved in that October war in the Middle East?

D: There were mostly munition buys. I can remember the airplanes coming into Patterson Field. There were Israeli airplanes out there; they were guarded. They were sitting out on the additional runway; they weren't in on the ramp. Truck loads of ammunition were being loaded. They got mostly ammunition--bombs or cartons of ammunition. Of course some tanks went, but they didn't load the tanks out there. They were picked up other places. There were C-5s and El Al Airline airplanes that came into Patterson Field and got loaded up, so we were aware of it, but we weren't buying any. A lot of that was Log Command stores coming out of our own stock.

A: I guess the Army really cried after that, especially in Europe. They lost a lot of supplies and ordnance that never got replaced for years.

We brought in the A-7 from the Navy. Was that the right plane for the right time for the right mission? We did it with the F-4, too.

D: The A-7 carries an awful lot of ordnance. If you need an airplane for a particular mission and you need it right now, you have a tendency to take what is on the shelf. The F-4 that we bought was completely changed, and we did a lot of modifications to the F-4, so it doesn't resemble the F-4 that the Navy had to start with. A lot of changes were made to the airplane. We eventually bought more than the Navy did.

DRIESSNACK

- A: I have read where Navy aircraft have to be very structurally sound for hitting the carrier.
- D: They have a tough gear. The whole undercarriage system is completely different because they essentially crash land on that flight deck. They come in and take a tremendous beating. We don't have to fold wings; we don't have to have that heavy gear, so we can run with a lighter airplane. I remember one of the problems on the TFX, which was a joint airplane, when we were first looking at it. There were some changes made to the TFX in those early days that I objected to and had a real problem with. Zuckert said, "Don't worry about it. It will be funded, and it is for the other service as well; just so that we can get the other folks involved."

I remember looking at that program. I was assigned to the Secretary's office, and I was asked to go down and look at what they were doing. The comptroller at ASD at that time was doing an estimate independently when the program was having trouble. Part of the problem was that it weighed too much to land on the carrier deck; and then the angle of attack was such that they couldn't see out of the forward windscreen. We had what they called the 30-degree angle of windscreen. They had to cut that down some more. All of that was done so they could fly this high angle of attack approach coming into the carrier deck. Then they took out a lot of beef, especially in the shoulder of the airplane, across the back of the airplane--a lot of structure--to lighten it up to be able to land on a carrier deck. When we did that, we kind of broke the airplane. They had to put some of that back in again.

They had a Super Weight Improvement Program [SWIP]. That took out too much weight, then we ended up putting some back, so that kind of weakened our airplane. It couldn't take the load of slamming it on the deck either. I was a major, and I remember saying to Zuckert, "Mr. Secretary, I'll [wager] you that airplane will never land on a carrier deck. The Navy will never buy it, and we are spending tens of millions of dollars in R&D just for all of these designs that don't make any difference on concrete at all."

A: Why did you say that at the time? Was it obvious the Navy wasn't----

D: Yes. You don't have to live too long with the Navy to learn. The Navy never buys an Air Force airplane. In fact, on the F-16/F-17 fly-off, they were directed to buy one of those airplanes. They ended up with the F-18. That was a different airplane.

A: We interviewed Senator Symington [W. Stuart] years ago about his days of organizing the DOD. It became very clear the Navy wanted no part of that, and they were able somehow to keep the DOD off their back to a large extent. I have never been able to understand. I guess they just had more friends in Congress over the years. They never really got involved in MATS and MAC. They fly their own big airplanes today to a large extent.

D: I told you when Jones got to be the Chief, he got rid of all the prop airplanes; all the -131s, -118s, and -121s we had. The Navy took all of that. They used them to fly around and pick up their Reservists to come on active duty. Now we

DRIESSNACK

don't do that. I'm not quite sure how they got away with it, but that is something they always did. There was some big deal about picking up the Reservists inland and flying them to the coast because that is where the ships and ports were, and the Congress went along with that nonsense. They could have given them an airline ticket, and they could have gone to the coast.

A: In effect, that is what the Air Force does.

D: Sure. Now they are saying, "We have all these old prop airplanes that have to be replaced," so they are buying C-9s. They have more C-9s than we do.

A: On the news this morning it showed a bunch of psychologists flying down to the naval station where this Stark is from; beautiful C-9 with all these nice Navy markings on it.

D: They have just taken that and converted it to another aircraft. They are saying, "Obviously it has to be replaced." Congress says, "Oh, sure; those are old prop-driven airplanes." We could never get away with that. We would never have even thought of doing that. We were told to get rid of the administrative airplanes, and Jones just got rid of all the prop airplanes.

One time they were going to take the airplanes that we had on the ramp at Andrews and give some to the Navy. We had some turboprop airplanes and some jets out there, the T-43s that were the trainers. We had some stationed here at Andrews because the navigator trainer had gone down, and we brought some of them in to support the SAM [Special Air

Mission] fleet. I got a phone call from the staffer when I was the Director of Budget who said they were going to transfer these airplanes unless we did something with them. He said, "What I suggest is that you might want to put them in the Guard or something like that so they don't take them away from you."

I went in to see the Vice Chief and the programmer, who was Abbott Greenleaf at the time, and said, "We are about to lose these airplanes, and in the next hour we have to take some action." They were just writing in the bill; there were no hearings, nothing! "We are going to transfer them to the Navy to replace some of these older airplanes that they had taken from us before."

We were buying them, and it didn't cost them a dime to get them. It came out of our budget, and they do that constantly. We transferred them to the Guard across the ramp; so what the Navy took was our turboprop airplanes. We had some turboprop Convairs out there that were essentially equipped like a -131, and they were good-flying airplanes. We used them during the Johnson era because you could get in and out of the ranch down in Texas. They were economical; you could run them back and forth to New York or different places very cheap. They were very comfortable airplanes; very well appointed. All of a sudden, the Navy got these plush airplanes. The Congress just took those instead of the jet aircraft. Those are the kinds of things that are very frustrating when you are in this business.

When I was up talking to Ben Bellis about doing the ICA the first time on the F-15, he had a phone call from Admiral



DRIESSNACK

Monroe who was the programmer for the Navy. He told him that the Navy was dropping the development of the 401 engine in the POM. The 401 engine was the forerunner of the F-100, and the Navy was developing this new engine. We were sort of piggy-backing for the first time on one of their engines. It always works the other way around, as you have seen on the -110 recently. We spent hundreds of millions of dollars developing that, and the Navy merely bought it, without any investment.

Meanwhile, they are buying hardware. We are buying a lot of R&D. They are buying 600 ships, and we are buying R&D. When we finish the R&D, then they will go buy the hardware. But they cancelled the 401 engine, and Bellis was livid. He was supposed to get engine No. 100-and-something off the line to go in the F-15. It now meant the Air Force was going to have to pick up the entire tab for the engine development on the F-15 program. It didn't start out that way; it started out as a joint thing with the Navy.

A: When Pratt & Whitney were building it down in Florida, they had some problem with the engine. General Bellis was telling in an interview that there were people in the Secretary of the Air Force's office or in the DOD finding out about problems before they were coming up to Bellis. He said that was a hell of a frustrating thing.

The contract had been let for the B-1 by the time you were out at ASD. There was already a committee under Dr. Raymond Bisplinghoff to review the B-1 program. It was only 2 or 3 years old, and it was being reviewed. Were there already some problems?

D: Bisplinghoff was on the Scientific Advisory Board, as I remember.

A: Were they already looking for a way to kill it?

D: I don't think they were looking to kill it; just a general review of the whole program.

A: In October 1973 Congress reduced the funding for the B-1.

D: There is always a conflict on: "What's the problem? You have B-52s, missiles; why do we need a new bomber?" The rationale was that we needed to replace the B-52. There are a lot of folks in Congress that don't think you have to replace those airplanes. They may buy a new car every 3 or 4 years, but they don't think a 20-year-old airplane has to be replaced. The questions always get asked in peacetime, especially after a conflict someplace. Why are we now buying a new bomber?

A: Did you see a need for a B-1?

D: You have to constantly replace the weapon systems. Let me take the Navy as an analogy. They started out with a Polaris submarine then went to the Poseidon, then they went to the Trident; now we have upgraded the Trident missiles. During the era while that is going on, we still have had the Minuteman. For somebody to say, "We want to replace the Minuteman with the MX"; why, there is a major war going on in town here. But the Navy just goes from one to the other; obviously, you have got to do that.

DRIESSNACK

A: Once again, how is the Navy doing that?!!!

D: They just go over and say, "Obviously it has got to be replaced! This is old, and we have to go to the next generation system." Now we fly these B-52s. They have been around 30 years or so. Back in those days, they were around 20 years--built in the 1950s--so you would say in the 1970s, "We need to replace them," knowing that it is going to be 7, 8, or 10 years until we actually get any new wings in operation. There was a big turmoil about spending all this money on bomber airplanes. It was a mentality; just a psychology of the fact that we had missiles was a deterrent. If we ever needed them in war, that is what we would use, so why did we need the bombers?

A: Once again it becomes a philosophical/political question. Did the oil embargo in 1973 have a big impact on ASD?

D: Boy, did it ever!! It had an impact with the budgets. All of a sudden we saw the price of oil go out of sight. We waited in gas lines like everybody else, but we saw the immediate impact on our operational costs. Now at ASD the only operational costs that I had was the fuel we had to pay for at Edwards. However, we were doing ICAs, these independent cost analyses, and we had to do O&S costs, the operating and support costs. When I look at the cost factors book that is published by the Air Force, and I look at fuel that is 50 cents a gallon or less, I can remember when JP was 15 cents a gallon. Now all of a sudden it is up to a dollar a gallon, and we are using millions of gallons, so the difference adds up. All of a sudden those lines become geometric; they just go right straight up.

We ran an estimate on some programs out there, and we could hardly believe what was happening because our approach to the inflation factor and what was going to happen to inflation factors was quite different than what OSD or the Comptroller "Moot" factors were showing. We were directed by OSD to use inflation factors of 2.1 percent on the B-1 R&D and 1.9 percent on production. We said that we ought to use an excess of 10 percent, and they told us we were out of our mind.

Now the difference in that was, we had an airplane that was going to be built in the future, number one. The inflation factors were all compounded out in the future, so any change in inflation would have raised the price of that airplane, and your dollars, tremendously. Just taking those factors, we developed a new model.

This was really done by a couple of lieutenants; one with a master's out of Wharton [University of Penn] and one with a master's out of St Louis. These folks went back to their schools and looked at the models that were being developed. Then I also had access to the Chase Manhattan's econometric model. We took all of those, and we looked at what DRI was doing, what St Louis was doing, what was happening with the various models and came up with our own approach of where inflation was going. It said double-digit. This is 1973. Some others were also predicting double-digit inflation.

General Crow came out on a review, getting ready for hearings on the Hill. He often did this; went to the field and reviewed programs. We gave him briefings on this study and said, "Here is where we think inflation is going. If

## DRIESSNACK

that happens, this is what happens to the change in prices of our weapon systems, both in the acquisition, operating, and support costs." He was flabbergasted, but we had a lot of data behind it. He had some people with him, and they couldn't shoot any holes in it. We had all of the facts. You couldn't drive to work in the morning without realizing that rising inflation was upon us, and it was getting worse.

He asked us to come into the building [Pentagon] and brief OSD. I brought in two people. We got some of his folks briefed, and then we went down to OSD and briefed the folks that put together the OSD model. They couldn't shoot any holes in it, but they wouldn't say they agreed. We said, "This is what we have done, and here are the results of what we have done. This is the rationale." We had it all documented. We wrote a formal report. We left that with them. They wanted to look at it overnight.

Well, they looked at it for several days and finally called the Air Force and said, "As far as we are concerned, the Air Force can develop its own economic model." In other words, if there is a documented study behind the forecast and we know what that rationale is, then you can use that. Otherwise, you use the OSD factors. We said, "Fine."

We essentially gave that model to our contractors. I started an arrangement whereby we got some current information from the contractors and melded it all into a single ASD data base so that we could develop more credible cost estimates ourselves. We built some new models, and we gave industry this inflation model. It was called the ASD 110 Study. That study then got to be kind of a cause

celebre. Everybody wanted to look at it, but no one ever found fault with it. Unfortunately, it came true. In fact, double-digit came upon us, and it went way beyond where we had forecast, but we said early this was where it was going to be.

One of the problems with that, we got a go-ahead to do it so we re-estimated. General Abner Martin came in and took over the B-1, and we did a new estimate for him. We did an ICA as part of this ongoing process when he was going forward with his programs. That program went from a \$50 million unit cost airplane to \$100 million just strictly on inflation. It was a little over \$100 million. General Crow said, "We can't sell that kind of an airplane," so he backed it down.

A: Just arbitrarily brought it down?

D: He backed it down under \$100 million. Of course it turned out that it was over \$100 million. A lot of that had to do with when we finally built it. Had we built it back in the days when we should have built it, we would have had a different set of cost factors, but it got delayed for that whole 4-year Carter period.

A: When did the Air Force start looking at a weapon system over its entire lifetime versus what it was going to cost to buy it and put it in the inventory? When did the budget figures start to reflect how much this thing was going to cost the Air Force over its entire life?

DRIESSNACK

D: About that same time, we started some of the original work with the operating and support costs when we started to put together ICAs.

All of a sudden you had to look at some different factors, and you were looking at a total-system cost, which included the development, the acquisition, and the life of a program. We went out 10 years. I think the original ground rules were that we would operate the program 10 years. When you looked at total cost on a weapon system, we used to compare them also; try and compare one system with another on total-cost basis. One system would be cheaper in the long run than another, but the up-front money was cheaper on the more expensive total system, and generally that is the one that prevailed.

A: I have a note here about ASD in 1974: "Items deleted by Congress could not be recommended for funding through reprogramming. No refunding from item of higher priority to one of lower priority." What was Congress trying to do there?

D: If a program is deleted--and is deleted with prejudice--then you cannot go back and put that program back by reprogramming funds. Reprogramming money always has to go through Congress anyway, except for certain low thresholds. If they deleted money or cut back money without prejudice, that language meant you could reprogram into it. They were just looking for money; they were not necessarily upset with that program.

A: You had three F-5Es crash in a short period of time in 1974. They went into a flat spin or something. Do you remember that and what the problem was?

D: No. Col Bert Stringer had that program at Wright Field.

A: When you were in ASD, was the B-1 progressing well?

(END SIDE 2, TAPE 7)

D: There was a requirement for cost control system criteria on that airplane, so I went out and helped review that system. I went through how they were going to develop it, how they were going to build it, the facilities required for it, and so forth. I spent some time on that program in the early days.

A: I have heard some Air Force people say there would have been less problems with the B-1 and Congress would have probably been happier with it had Boeing got the contract because "they are the bomber maker for the United States." Is there any rationale to that or is it just a myth that had been built up?

D: I think the Carter Administration came in with sort of an anti-defense, or not in support of, a larger defense program and didn't see any need for the bomber. Whether Boeing or anyone else had it, I don't think it would have prevailed or not because the Congress at that time was supporting what Carter was trying to do.



DRIESSNACK

A: Did you want to get selected for the job as Systems Command Comptroller?

D: No. I really wanted to be a program manager; a program director. In fact, I talked to Jim Stewart about that. I said, "I really would like to be a program director." This was when I was a colonel and we were talking one Saturday morning after a briefing about some things that were going on. He asked me what my aspirations were. I said, "I came out of a program office as a young captain, and I would really like to go back and be a program director." He said, "Well, you have gotten to be good as a comptroller. Some day you will be the Comptroller of the Air Force."

I sort of set that aside; never gave it much thought until I became the Comptroller of the Air Force. He is the one that recommended me for promotion. I think I was the only comptroller ever promoted at Wright Field.

A: What particular program would you have liked to have had?

D: Any one of those programs. A new one is always a challenge, but to take any program is a very complex management problem. In the first place, there is a lot of satisfaction in doing something from scratch; bringing it in and fielding the weapon system. For ever on, that is yours. Your name is associated with it, and it gives you a great sense of self-satisfaction that you have accomplished something worthwhile. The challenge of a program that complex is something else. There are very few people that get that opportunity.

- A: Did you know General John Sessums? He retired in the middle 1960s. He talked about bringing some executive-type airplane into the inventory, and felt the way you just said: Boy, this was something he did, and it was almost like a son or daughter! That is an interesting point.
- D: I have a great affinity to this day for the C-141. When I got to fly in the airplane, I would always go up and talk to the crews and about the association I have had with it.
- A: I have a quote here from Lt Gen John Hudson, who was Vice AFSC, for fiscal year 1975: "Budgetary limitations continue to impact our ability to effectively manage our current programs. It seems clear that these pressures will become more severe." "Systems Command devoted much time to developing and implementing new management policies to get more from the 'resources available.'" Was this a reaction to the inflationary thing as much as anything else, or was that lowering budgets that were now coming about?
- D: It was a combination of things; it was lowering budgets and the other problems we had with the inflation that was impacting everybody. When I was at Systems Command, foreign military sales began to amount to big dollars. One of the things that happened in the R&D business was that you charged people for R&D; you charged people assessorial charges, asset-use charges, administrative charges; all sorts of things were tied to the programs. We kept the administrative money that came back. When it came back to the command as we sold things to the foreigners overseas, that money became our money, was no-year money, and it didn't have any particular appropriation tied to it.

DRIESSNACK

When we got a budget cut, as an example, Congress never did finance R&D money for pay raises. All of the civilians in Systems Command got paid out of R&D money. Here you have a command with 55,000 civilians, and they didn't vote for the pay raise. You have the military pay raise in the mil-personnel account, and the other commands all pay their civilians out of the O&M account, but the Systems Command paid civilians out of the R&D account.

The R&D account is a large account because it is not broken up by SAC, TAC, and so forth into different segments. It is just a single account, and it all goes to Systems Command. One of the things we were able to do was to take millions of dollars we were getting from the recoupment of R&D charges and administrative charges coming from the foreigners and pay our civilian pay raise. We paid our people with that. We also initiated some improvements in the command as a result of that. Later on, Congress took that away from us. They passed some legislation that required that money go back to "miscellaneous receipts, US Treasury"; so we lost the capability of using that in a useful way. That was one of the ways we used to dig out of a hole a few times.

A: What were these "murder boards"?

D: If you looked at an RFP, we are going to start out on Day One. We have a requirement that has been approved by the headquarters. We would then sit down with a group of multi-disciplined people that cuts across the entire staff: procurement, lawyers, engineers; everybody gets involved. You go through the RFP and say, "Why is this in here?" People have to defend the requirement that they put in.

"This is just going to add to the cost of the system."

"This will add to the time development." "Do we really need these things?" So we essentially "murder boarded" it, and it got that terminology.

A: Did it work pretty well?

D: I think it worked pretty well when we were working them. Just like everything else, it has a tendency, unless it is institutionalized, to kind of go away because it is the innovation of a particular person. You get involved with it and you do it, then someone else comes along, and you don't have time; the staff gets cut; you don't have the right representative; so they kind of atrophy, and you say, "Why do them?" That is what happens to those sorts of things.

While we were there, we did murder board things. The procurement strategy things had to do with determining what kind of contract we would sign; fixed-price incentive, firm-fixed price, cost plus, and decide what incentives we ought to put on the contractor and where to apply them; the ways we were going to make payments. That got to be the business strategy. They set the program office up with some input by a lot of people before they went to sign a contract.

A: All of a sudden the B-1 was in danger because of the size of the program. Was the B-1 in danger from Day One? I get the impression that from the day the contract was let to the day that Carter killed it, it was really being led to the plug being pulled on it.

DRIESSNACK

D: I think it was always in jeopardy.

A: Whereas, the F-15 program seemed to run very well. Nobody argued with the Air Force needing the fighter. General Bellis seemed to really have a lock on that thing. Yet, parallel to it is the B-1. That thing was always on the ragged edge.

D: Yes; and even the F-16 came in almost like overnight. They went up to brief the lightweight fighters, and I remember General Stewart coming back from the meeting. Lo and behold, the F-16 got kicked off. They were told, "Go do it."

A: Did the size of the program hurt the B-1?

D: Sure, the magnitude of the program was tremendous.

A: Was Congress understanding the fact that inflation was pushing this stuff when you were comptroller in Systems Command?

D: There are some people in Congress that believed it. Obviously those with some economic background understood what was happening. They refused to accept the fact that while their food bill was going up and their clothes were costing more money and their automobiles were costing more money to operate, they couldn't see why defense was costing more money. That was always amazing to me.

I was over at a hearing later on when I was testifying, and Stennis [Senator John C.] asked me one time, "What are we

going to do about inflation in this country?" I was taken aback because I wasn't expecting that. He chaired the Senate Appropriations Committee. Senator Young was the leading Republican, or the minority chief of the Appropriations Committee, and the two of them always spoke together. One supported the other even though they were from opposite sides of the aisle.

They got on me about this, and I finally said to them, "We are the recipients of inflation, just like you are. If your gas costs more money for you to put in your private car, your clothes cost more, your food costs more, then I can tell you that is compounded in the service. We pay more for our fuel; we use a lot more of it. We pay more for our food, more for the weapon systems, because we are buying from the same economic base that the civilian community is buying from. It has just increased the price of our weapon systems and the cost of our operations. We haven't caused the inflation, but we are surely the recipients of it, and we are just as concerned with inflation and what it is doing to us as you are with what it is doing with the economy." That seemed to get them off that vein. He said, "Well, we need to do something about it." I said, "Anything that I can do, I would do. I'm at a loss to figure out what the solution is." Lots brighter people than I were trying to figure out that problem.

A: There was an ad hoc group--Project Corona Quest--headed by Lt Gen Bill Evans [William J.], who was DCS/R&D in 1974, to evaluate the B-1. There seems to be one evaluation and one committee and one thing after another there.

DRIESSNACK

D: Right, and we looked at it one more time. When Reagan put it together and said, "We are going to go with the B-1," General Jones was the Chief, and he put together an ad hoc group to take a look at it to see if it was the right requirement; are we really ready to go to production; what the costs were, and this sort of thing. The ad hoc group put together was Jerry O'Malley [General], Kelly Burke [Lt Gen], myself, Jim Brickel [Lt Gen James R.], Emil Block [Maj Gen Emil N., Jr.]; all folks that went on up in the Air Force later on. In this ad hoc group, we were given different assignments.

Mine was a cinch because I was on that group and was selected out of Systems Command. I was supposed to determine whether I personally thought they were ready to go to production. I was to go out and look at the contractors and evaluate them. I did that and spent a considerable amount of time reviewing them. I stopped by to see Ab Martin [Maj Gen], who was the program manager at the time, and said, "Here is what I see. This is what I'm going to tell the Chief. You tell me if it is any different than the way you see it." It was about in line with what he had been telling the Chief.

Anyway, we went up and briefed the Chief. When I briefed General Jones, it was one on one. We didn't come in as a committee and give him a report. He talked to us one on one and formed his own opinion of things. That is his management style. He did a lot of ad hoc committee work, or he put his trust in an individual and asked them to get an independent assessment, which could be completely different from the staffs.

A: I have heard General Jones had a tendency to make a decision, think about it, and later either add on or pull back. Was he one to want to follow up a little more than necessary on a decision that he would make?

D: He was very conscious of the politics of things in the Congress. While he might have had second thoughts, I never was aware of him changing things.

A: Not that he was indecisive; if he figured out three would be better, and later that night he found out it was really two, he would come in with a change like that. For example, I read years ago that de Seversky [Alexander P.], the famous father of the P-35, could never leave the design alone. He would design an airplane; they would start making it; and he was constantly down there making it either lighter, stronger, or something; he could never leave the final design alone. That was a comparison I had heard about General Jones. He was always trying to fine-tune or tweak something.

D: No.

A: During your years in comptroller and budgeting, was it always a problem of handling "black" [Special Access] programs--like the construction of the SR-71--that was designed and built with only a very small group of people knowing about it?

D: Black programs are a whole separate world. In the first place, you have to believe in the fact that there are some programs that have to be done under wraps. The open society



DRIESSNACK

that we live in doesn't lend itself to doing things very well unless you somehow cloak them in the black world. We have done it with satellites. We have done it with missiles. We have done it with airplanes.

Over the years the amount of money that goes into the black programs has gotten pretty large. It is not that big of a percentage, but when you are talking \$100 billion budget, 10 percent is \$10 billion, and that is a lot of money. The programs are the same kind as in the white world except you really don't want the other guy to find out about them. Unfortunately, in this society if you don't want the other guy to find out about them, you can't let your own people know about them too much.

If you let our own society know about them, then you have a problem with the other guy knowing about them because everything is very open. In the beginning we went to select committees in the Congress. I remember going over and testifying when I was Director of the Budget with Congressman Mahon [Gabriel H., Jr.], who was the Chairman of the House Appropriations Committee. We would take people over or go over and justify a program or provide him with the information he needed to make a decision or to approve what we were doing. I would ask him whether he wanted anyone else to be aware of this. He used to say to me, "I don't think so, General. I think you and I can handle this very well ourselves. Why don't we just leave it that way"; and that is the way he operated.

As the Chairman of the Committee--he was Chairman of the Defense Subcommittee as well as the Total House

Appropriation Committee--he had one or two members on his staff that worked the problem with him. That was enough. He didn't have to blab around what was happening. He considered that along with the open programs. Occasionally we would have conversations with the staffers on how that fit into the whole scheme of things.

When Joe Addabbo [Congressman Joseph P., NY] took over as chairman of that committee and Mahon retired, I asked Joe Addabbo how he was going to handle that. He said, "I want the whole committee briefed." I said, "Do you really want that? Everybody has to get cleared and so forth." He said, "I don't want to make this decision on my own." He was completely different.

A: It wasn't so much that he wanted everybody to know this in a free and open society; he just didn't want the responsibility.

D: A little bit of both.

A: I have heard Mahon's name mentioned for years; an old-time politician, he had very little reelection worries. Those guys are gone, though.

D: At the last budget Mahon presented to the Congress, he got up and said, "I am proud to present to this body the largest military budget in the history of the country." I said to Joe Addabbo, "How are you going to get up and make that speech that Mahon made?" because he really wasn't that big of a supporter. He was the next ranking guy, a Democrat, and he had the support of the House.

DRIESSNACK

of a supporter. He was the next ranking guy, a Democrat, and he had the support of the House.

He said, "I can never make that speech, and I won't make that speech." I said, "The pure facts are, with inflation being what it is, your budgets are going to be higher than Mahon's budgets. The truth will be that you will have a higher budget than we had in World War II or any other time. How are you going to reconcile that in your mind?" He said, "I'm not going to say it. If I said it, I would never get elected in my district."

A: Was the whole committee briefed?

D: It got broader. There were more people brought to bear on what was going on. In the Pentagon the black programs grew. I was concerned a little bit about the amount of money going in there and whether, in fact, there was an audit of where this money went. I started to look at it as the Director of the Budget; and when I got to be the Comptroller of the Air Force, I specifically wanted to find out--I also had audit responsibility--so I said, "Let me take a look at those programs."

I got a young captain that had come out of the audit agency at Wright Field. Before the auditor out there retired, he came to me and said, "I have a bright captain who works for me that shouldn't be in audit. He is too bright. He ought to have a broader career in the Air Force, and you ought to take him."

him because he had all of the tickets and all of the clearances required. When he was the auditor, he did the black programs at Wright Field. We transferred him back to the Audit Agency for the specific purpose of doing an audit on the black programs. I instituted that, and to my knowledge, that was the beginning of an audit in the black world.

I wanted to do that because I was concerned not so much that there was any hanky-panky going on, but I didn't want the Air Force to ever get embarrassed because somebody had made a mistake or there was mismanagement of something along the way, and it would be misconstrued. I wanted to make sure we had a professional audit of the money because it was now a large amount going into the programs.

Well, he ran the audit. Unfortunately, we did find a little hanky-panky in there. I don't know if you ever heard of that.

A: Was that in Europe?

D: In a Swiss bank account.

A: Within the last year the case was dropped.

D: The case might have been dropped because he threatened to talk about how the whole arrangement came about, the source of information, and what have you. The worst thing that can happen in the intelligence community is not so much giving up the information but how the information was acquired. I have been out of it for some time, but unfortunately that

DRIESSNACK

came out of it. For it to have been a general officer was really disappointing and shocking to me.

When it all finally came to light, I was the Assistant Vice Chief. That audit system is still in being. I have recently talked with the current Comptroller, with the advent of all these bank accounts and things that are going on now, to make sure that was still in place or he was aware of what we had done. He said he had looked at it recently, and it is still in place, and they are still working the same procedures that I had set up back then.

The other thing that happened, when I got to be the A/Vice, I got involved with the black programs because if you have the money, you control quite a bit of the world; the Golden Rule: If you have the gold, you make the rules. I got cleared for most of these programs primarily to take a look at the validity of the requirements and where the money was going, and I got to visit quite a few of the programs to see exactly what was going on.

When I got to be the A/Vice, I talked with General Mathis [Robert C.], who was the Vice, and with General Lew Allen, the Chief. Lew Allen came out of the intelligence world, and he was more prone to not clear people. He wanted to keep it as few people as possible, and I thought that was primarily due to his intelligence background. There were some people I felt should be cleared because decisions were being made in areas of responsibility where the three-star in charge of that area had no knowledge of what was going on. I couldn't quite see that. I thought it was ridiculous

not to clear a three-star when something was going on in his area. We eventually got that squared away.

We set up a procedure then that I suggested to Mathis. I think we went through it once with Mathis, and we got into it when O'Malley became Vice Chief. O'Malley was very good in this area because he made decisions very quickly. We called it a kind of zebra review. We looked at a white program and a black program side by side. We got the black programs, looked at them, and said, "Okay, we are building this missile or airplane; this approach or sensor"; whatever it was. "This is what it is comparable to in the white world."

We had a briefing on the white world program, and then we had a briefing on the black program. These were separated, but they were all done in the Vice Chief's office. Then we made a decision that they were in fact different, were different technologies, or they were exactly the same thing. In one case we found we had exactly the same thing. Not only that, the white world program was further ahead than the black world program. The white world people had no way of knowing that, and the black world people were so compartmentalized that they weren't paying attention to the other side. That worked out pretty well; so then we cancelled that black program.

(END SIDE 1, TAPE 8)

D: The consensus was that the programs were so close that we couldn't tell a difference, and the white world was technically ahead.

DRIESSNACK

A: How do those things get started?

D: Somebody gets an idea. I can tell you the "Lantern" came out of the black world. General Browning came running in to me one time when I was the Comptroller and said, "We really have to support this program."

They were running a staff summary sheet and came in for approval. It had come out of the black world. The guys had seen all of the reports. We went with it because the operators wanted it. Well, billions of dollars and years later we have something that is close to what they first talked about; but we really don't have the system they initially envisioned. You can make a bread board or brass board, actually put it into production, operate it, and call it quite something else. Some of them pan out and some of them don't pan out. Quite a few of them we take out of the black world and produce them, and they work out very well.

A: You were comptroller for almost 2 years at Systems Command, then you became Deputy Chief of Staff for Procurement and Production. You were only there for a matter of months. What was this about?

D: General Evans was the commander then, and his DCS for Procurement and Production decided to retire, Mike Tashjian [Brig Gen Michael J.]. He thought he was being overlooked. Somebody else in the procurement field got promoted, got his second star, and he thought he should have been on the list. I think Evans tried to tell him he would probably come out on the list the next time and he ought to hang tight. Mike

was very upset about that, and he retired. Evans didn't have anybody to put in the slot.

Because I had kind of a money-business background, a SPO background, Evans asked me to go into that slot. I went into that slot thinking I was going to be there a while, but then I got promoted on the next go. I was on the two-star list, and I was also selected to be the Director of Budget, so I went over to that job.

A: Going back to your days of budget, this note says: "DCS/R&D for the Air Force in Systems Command in 1975 initiated the new unfounded RTD&E requirement policy to 'avoid dealing with all funding problems no matter how small' at Headquarters USAF levels." Was there a bringing down of decision making then? Did Headquarters USAF want to get less involved? I find that hard to believe.

D: I don't know where they were involved before because I wasn't at that level. Systems Command built the R&D POM essentially. We went through it over at Andrews and invited the Air Staff people over to review it with us, and it was done at that level. The biggest input to the POM today still comes out of Systems Command in the R&D arena.

A: This Program Evaluation Group [PEG] was to review----

D: And the chairman of the PEG was always the deputy comptroller because he had no axe to grind on the programs, so my deputy was the chairman of the PEG. Sometime after that they took that away from him and put it in DCS/Plans in XR. It has since come back. I think when General Marsh



DRIESSNACK

[Robert T.] came back in, he gave it back again to the deputy comptroller because he is the honest broker.

When you are looking at programs, you let the others be the advocates; the labs, the R&D folks, or the systems folks.

They become the advocates for the technology they want to pursue. The only guy that can be the honest broker is the comptroller. You have Programs, and you have Budget in the Pentagon; and you have that in most places. Systems Command, way back in Schriever's day, combined Programs and Budget. Within the Comptroller there is the Director of Programs and a Director of Budget. Finally we did away with the Director of Programs because it was just duplicative. The deputy comptroller took on that chore.

A: Systems Command managed a lot of programs; for instance, the Arnold Engineering Development Center, Eastern Test Range, Flight Test Range, Special Weapons Center. A lot of these were DOD programs. Would that funding come out of the Air Force hide, or were you able to break it down a little bit?

D: Quite frequently we were given executive responsibility for a program; and when they do that, you fund it. It was the recognition on the part of OSD that you have funding responsibility; it comes out of your budget. It becomes a percentage of your budget.

A: Oh, I have a note here that says AFTEC was established in 1974.

- D: I remember I had to fund that as the comptroller at Systems Command. Howard Leaf [Lt Gen] was the first commander, as I recall.
- A: Lt Gen John J. Burns was out there for a while. "Forward Financing: The obligation for funds for future services beyond the end of the fiscal year for which the funds were appropriated"--was this forward financing something new?
- D: Forward financing was later outlawed. We couldn't afford to forward finance anything. You had to have fiscal year integrity and appropriation integrity. The one thing we do forward finance is the long-lead items. Forgings, as an example, have a tendency to take several years. By the time you order and before you can affect delivery, they could get to be forward financed. That is always done with the consent of the Congress. There is a special line on the program that talks to forward financing. You may get money. Most major weapon systems do have some forward financing, and it is for the long-lead items. That is credited the next year; that is taken away. There is a separate line on that weapon system line item in the budget for that, so it is controlled.
- A: In 1975 General Evans created a new DCS/Production and Manufacturing that would "give high achievers max opportunities to advance careers." How was General Evans as Systems Command Commander? Was he quite a change from General Phillips?
- D: No, I don't think he was that much of a change. General Phillips was a very quiet person. He kept to himself a lot.

DRIESSNACK

He was a real gentleman and good to work with. Evans had a different personality, more outgoing. He wanted to do more with people. He got to be more people oriented. He came out of a DCS/R&D environment, but he had also been wing commander and squadron commander; and he was looking more to develop an esprit within the people than most commanders before that.

A: Did you get into any review of the AWACS [airborne warning and control system] program?

D: Somewhat. I was very much involved with the E-4 program. The SPO was a Brig Gen Lyle Cameron. He had the lightweight fighters at ASD, and Bill Thurmon [Lt Gen William T.] was his deputy before Thurmon took that over. Cameron was one of the bright stars around Wright-Pat. I had always heard that he was one of the better SPO directors, and I certainly looked at him that way. He was a contemporary of Larry Skantze. The two of them went up to ESD. Larry took over the AWACS, and Lyle Cameron took over the E-4, the command post.

One of the normal quarterly reviews that came through the building when General Phillips was there was on the E-4, and it turned out the E-4 had a tremendous overrun. This got everybody upset, and the potential was really bad. Phillips called a meeting of the staff. We got together, and he asked me to go out and take a look on what was happening. Theoretically, they had CSCSC on the contract, and we were supposed to have cost performance reports, and he wanted to know why we didn't see the overrun coming.

I went out and spent a week with Lyle Cameron and his folks. I discovered that Boeing had changed their internal system in the sense that the internal audit could be turned off by a program manager. They had changed the procedure. Theoretically, your internal audit inside a corporation is when the auditor comes in to see whether you are doing certain things, and he sort of comes in unannounced or he says, "I'm coming next Tuesday," and he shows up; well, that procedure had been in place when I reviewed the system.

When I went to see the audit folks, I went specifically to say, "When was the last time you ran an audit, and didn't you see any problems in the system?" They said, "We didn't run the audit. We tried a few times, and it was waived by the program manager." I said, "How can that be?" They told me the procedure had changed. So that was the biggest problem; no one had visibility.

The other problem was that the AFPRO [Air Force Plant Representative Office] had put some newly assigned young people on the program. A new lieutenant comes in, and they assign him to this program. He is there for a few months and just begins to learn it; somebody else comes in, and they reassign the lieutenant somewhere else; so the AFPRO was at fault in not having some stability on the surveillance monitor in the plant looking at reports and data and essentially providing an extension for the SPO. He was never able to alert the SPO to anything.

I came back, and we had a meeting with Ollie Beulieu, who was the president of Boeing at the time. He is now at General Dynamics. At the meeting I told what had happened,

and Ollie challenged me. He said, "No, that's not our procedure; that's not the way we do things at Boeing."

I said, "By god, that's the way you did them! Your program manager never let you know what was going on. If you didn't know what the hell was going on, there was no way the Air Force was going to find out what was going on. He ran into some technical problems, and it was a case of he was going to fix them, and he didn't want anybody to know about it. He kept getting deeper and deeper and deeper. When people came in to look at his systems, he waived them off. Finally it got to a point where you couldn't hide it anymore, and you had to go for more funding; so then he told everybody." That was the old approach. This is what we tried to overcome with this CSC approach and with the visibility on the cost performance reports and so forth.

We were much upset. I had personally gone out and reviewed that system. I said, "It's not the system that I had reviewed, and here is one of the changes and it's basic." Beulieu bet me a drink. He said, "You are wrong!" I said, "I am not wrong, Ollie." He said, "Let me go make a phone call." He went out, made a phone call, and he came back and said, "You were right; but as of 5 minutes ago it has changed back." We were talking hundreds of millions of dollars.

A: Did anybody lose their job over that?

D: Yes; unfortunately, the program manager out there got relieved and went to another position; but Lyle Cameron resigned from the Air Force. I said, "Why are you doing

this?" He said he felt this was the end of his career from a program manager's standpoint because he was associated with it; and he felt that was the end of the rope, so he left. "E" Systems picked him up. I remember talking to Smith, who was the CEO down there, and saying it was the best acquisition they ever made when they picked up Lyle Cameron. He was a hell of a good manager.

A: Do you think he could have survived that in the Air Force?

D: I think he could have. I was a new BG myself and not into a lot of the rationale or the politics, but it certainly wasn't his fault. The report that I conveyed when I came back to General Phillips was that there was no way our program manager was going to find out because the whole thing was hidden from us. In this case Boeing really needed to take the rap on the knuckles for what they did.

While I was out there doing that, Larry Skantze was out reviewing his program on the E-3A, on the AWACS. He came to me one evening and said, "How about taking a look at my program while you are here?" I did; I reviewed that program and went through the AFPRO. The E-3 fortuitously had a person assigned to him who had been there for a few years. That person had a lot of continuity and a lot of rapport, and his program had the cost performance reports that they were cranking right along with. It came out every month, and there was a routine for doing it. This was an older program and was more stable than the E-4 was at the time.

A: Once again, I'm sure the organization chart was the same.

DRIESSNACK

D: Absolutely. So we learned a couple of things from that. One, we went out and lectured the AFPROs about people that get assigned. You don't willy-nilly do that, and I faulted the AFPRO. We dressed down the AFPRO for having let that occur because he was as much at fault as anybody else. Of course we made sure the contractor's system got changed around, but the AFPRO wasn't even aware that there had been a change in the system.

A: This raises a question. In some sense, are these Air Force people lambs being led to the slaughter? For example, if Boeing wants a contract change or there is an argument over who should pay something, they bring in 10 of their corporate lawyers that have been in their finance department for 25 years against some little captain. In that sense, can the contractors really outgun the Air Force?

D: I don't think so. I think we hold our own. In my current position, I go around and look at plants, contractor's facilities. I talk with the AFPROs, the people that are out there; very competent guys, and they know what is going on. In fact, if I want to find out what is going on quickly, I will go to the AFPRO and say, "If you were king for a day, what would you change about this place, and let me try and get that done?"

Let me tell you, they tell me everything that is going on. They know more about what is going on out there in many cases than the guy running the facility because their people are all over the place. They get the feedback and so forth. I think we hold our own pretty much. Whether the AFPRO then comes in and tells anybody is another thing; whether he

reports it, or whether he thinks he is going to fix it is another problem. That is an organizational problem; it is a personality problem. Some of them are very direct with their SPOs; others are not.

In the case with Fairchild, they just closed them down. They ran a review in there, looked at seven areas, and Fairchild flunked all seven areas--the only major contractor that has ever happened to in the history of our review process. This was for the T-46, the new trainer. They weren't doing anything right from the management sense; from quality, product integrity, contract administration, subcontract administration, plant safety, engineering, manufacturing, nothing! Nothing was being done properly or in accordance with the requirements.

- A: Fairchild has been around forever. They should have had----
- D: Nobody was paying attention to the procedures and things on the floor. Government property management; all that is part of it, and the people were just not paying attention. I look at it in the corporation I'm in now, and I find procedures that are 20 years old. It takes time for the manufacturing engineer to sit down and rewrite the procedure. He doesn't have time, and we don't have a lot of people standing around to do nothing but upgrade and write procedures, so they let them go. The worksheets change, and the person works to the worksheet. Then the company procedures get outdated. Pretty soon he moves on to something else, and nobody pays attention to the procedures so you have a procedure that nobody is following.



DRIESSNACK

A: You talked about this SPO resigning. There were general officers that retired in the last few years who, very early in their careers, had a court-martial. Looking at it now from a personnel point of view, is it possible for an officer to suffer even an Article 15 today and have a career in the Air Force?

D: Probably not in today's world. That stigma would always be with him.

A: I think General Dixon [Robert J.] had a court-martial at his lieutenant or captain level for some stunt in an airplane. Someone said, "The Air Force is getting to the point where nobody can make mistakes anymore." You have this problem of trying to cover; nobody wants to admit there was a mistake. Is that becoming prevalent; everything has to be zero defect?

D: We are not very tolerant of mistakes that people make, and we have a tendency to relieve people. I think it depends on the mistake. If you are out flying and you fly under a bridge or buzz a place and you are a fighter pilot, you are supposed to do that kind of thing. That is the kind of guy you want as a fighter pilot. We all did that as fighter pilots; some got caught and some didn't.

I remember doing it in Texas in a T-6 and then ducking into a cloud because I saw another airplane coming my way. I thought, "If there is an IP on board, then I have had it because he will get my number." Well, I had never done any instrument flying, and here I am in this cloud. I thought, "Well, this is interesting!"

All of a sudden my senses were disoriented, and I'm just going back to what I've read, so I'm flying needle ball airspeed. I don't know how big the cloud is until I get out of it. Finally I ducked out of it and came down to a lower altitude, again not knowing where I am or anything. I had to reorient myself and then buzzed back to the field.

I never did that again. That first experience in a cloud, completely enveloped in white, by myself, and I wasn't 10 hours past soloing when all of a sudden I am on instruments. That was a dumb thing to do.

In the first place, I was out of the area. I went to buzz a friend's ranch. They all came out, and I ran the prop through and waved at them from a few hundred feet. We all did some dumb things, I think. That is a little different than, say, stealing money or something like that. I don't think you can survive that. The young people will make mistakes, and they need to learn from them.

A: As time passed while you were in the Air Force, did the level of decision-making from the AFPRO to the SPO to Systems Command to ARDC just keep moving up and up and up? If one of the parameters of the system had to be changed, regardless of how serious it was, did it have to come up to Headquarters Air Force or Systems Command?

D: No; I think that is still where it was. Source selection authority on some things rests with the Secretary, then he delegates it to the commander at Systems Command. When he delegates it, he essentially says in his write-up, "I delegate this to the commander of Systems Command to be

DRIESSNACK

redelegated no lower than the commander of ASD or Space or ESD," and that is where it stays. In some of our systems, that is where the source selection authority is. You report up through the system and say, "Here is the decision I made," and the headquarters review it. It depends on the size of the system.

Now the recent source selection that was done with the alternate fighter engine competition was kept at the Secretary's level. Secretary Orr [Verne] decided he was going to make that decision, and he kept it from the uniformed Air Force. Those fiscal year buys still go to the Secretary, except I think the last one was made by the Assistant Secretary.

- A: Secretary McNamara was making decisions at his level that were unbelievable, and I had wondered if that still remained the same; whether it moves up and moves down, depending on individuals or programs.
- D: Could be. I think it depends on the management style. The best person I ever saw in that job at OSD was Packard. In the first place, he has a presence so that you understand he is the CEO [chief executive officer]; no question about it. He runs the meeting. He was in there with these four four-stars, and as far as he was concerned he was the CEO, and they were coming in to brief him on a new product, new approach, new report, or what have you; but he was in charge of the meeting. He was all business, but by the same token he was a very gracious person.

I was a young colonel when I was briefing him, and there was a lot of horsepower in that room. I was a little concerned about the reception and whether he even understood any of this stuff. You can't take his time, so they gave me a limit on the amount of time I could brief. I had briefed this to the joint commanders first to dry run it with them. They said, "Okay, go with it." So I went in and briefed and explained what we were doing and why. He accepted that and commented back and forth. He asked some questions so we had a dialogue going on. He was in charge of the meeting; there was no doubt about it, and he made a decision at the end of the meeting. There was no "go on, think about it, do something else, get a paper out on it, have the staff review it." He made a decision, and that was it, and the staff wrote up his decision.

- A: Was part of that the fact that he was told he was running DOD, and Laird was going to play Secretary of Defense with Congress?
- D: It could have been. I think it is just the way personalities get together and the roles they fill in their respective areas.
- A: On another subject, in 1975 the F-16 procurement production was coming into being. Denmark, the Netherlands, and Norway were going to have a part of building this. Would that have become part of your bailiwick as Comptroller?
- D: That was handled at ASD to a large extent, and the SPO set up a lot of it themselves. At the Secretary's level, the chairman of all that was set up at the Assistant Secretary's

DRIESSNACK

level for R&D. To this day he still chairs that joint review EPG [Economic Policy Group] Council.

A: General Evans wrote a letter to General James [Daniel, Jr.] in October 1975. He says: "Failure to consistently apply good business practices in the acquisition of major weapon systems, our life-long emphasis in performance, and in recent year's technology has regulated other considerations to a secondary role." "AFSC is to tighten up the management approval of the acquisition process, increase participation in weapon systems development at command headquarter's level, headquarters not to be 'a post office type' relationship with the SPOs." Evans says, "There is a tendency to concentrate on the technical side of a project at the expense of business considerations; greater responsibility with the procurement, legal, and logistics personnel." Was there a problem that had developed, or did Evans just see this as something that was needed?

(END SIDE 2, TAPE 8)

D: I think Systems Command back in that time frame was technically oriented. The DCS/Systems and those folks had a tendency to look at the technology, and the LAB folks looked at the technology, and that got to be the name of the game. In the business aspect, the weapons acquisition business did take a back seat. The most important things that came up were always in the technical arena, and people were required to bring forward technical information. At times we discussed it ad nauseam. (Laughter)

In the final analysis, Congress would cut the money on a program, and it would be a whole different ball game. We weren't paying enough attention to the actual business side of the whole thing or the total management of the system. Evans was trying to emphasize the totality of management approach as opposed to looking at just the technical aspect of it.

A: Did you see your office getting a little more visibility than it had been in the previous years?

D: When I was there before as the Director of Costs, I got involved with the SPOs and the business management in plant and actually hands on with the hardware in the contractor facility with the reviews of the cost, schedule, control system criteria, looking at the cost reports, doing the independent cost analyses, and those sorts of things; so we got a lot of visibility. When I moved over into Production and Manufacturing, we got involved with some more things. It used to be Procurement Production. When it got to be Procurement Manufacturing--as we called it--we changed that because the emphasis was on the manufacturing role.

I remember going with General Marsh, as an example, down to GD getting ready for the F-16 production and looking at the way we were going to tool that program. They wanted us to put up \$100 million worth of tooling, a lot of automation and a whole new layout. It was innovative and forward thinking, but I thought if they were going to be competitive worldwide--we were now selling things to those four European countries--that in order to keep their costs down, they were

DRIESSNACK

going to have to pick up part of that tab and make an investment themselves.

I think Marsh was leaning more toward helping them in some way, so we compromised on that. They got in the neighborhood of \$50 million out of the command, through industrial modernization improvement programs, tech mod programs, man tech programs, and things like that to help modernize the facility. Well, it turns out that was a good investment because it did keep the cost of the weapon system down, and better than that, it insured the quality of the product, which was really what we were after. It has made them competitive. The F-16 is sold all around the world.

A: Did you ever go over to lecture at ICAF?

D: Yes.

A: I get the impression ICAF has kind of diminished in importance as a school. Is that true?

D: I don't know. I think until I left in 1983 it was still considered to be a good school. When I was on the Air Staff, there was always this perception, for those of us that had gone through school years before, that National War College was the top of the heap and right behind that was ICAF. From the Army's standpoint, having gone to Carlisle, was something they had to do and also out to Command and Staff College at Fort Leavenworth; but in the Air Force you really didn't have to go to Air Command and Staff or the Air War College. We were determined to bring the status of the

War College up so that people wanted to go to the Air War College.

Secretary Orr got very much involved with that, and he perceived that same thing. What we tried to do was enhance the Air War College in such a way that people wanted to go there. We needed to upgrade it. The computer system went in so we could do some war gaming. That happened when I was on the Air Staff; new facilities. They got a complete face-lifting down there. That all happened during this time frame.

A: I sat in the audience at the SOS auditorium the last time Orr spoke down there, and he as much as promised General Richards [Thomas C.] his fourth star and commander of a major command because the premise was always that the AU commander was a terminal assignment.

Does the US defense community still maintain these empty plants with covered machine tools still waiting to be used?

D: Years ago we owned many plants; we still own some plants. There is Air Force Plant 6 at Marietta, Georgia; Air Force Plant 4 at Fort Worth, Texas. We have tried to get rid of plants and equipment, and we have sold a lot of them. It has been a DOD policy for years to unload that sort of stuff. To replace that, they have set up an Industrial Modernization and Improvement Program which is funded each year. The Air Force does more of that than the other services combined. We get into tech mod and man tech programs.



What we are trying to do is put up some seed money, a few million dollars, and let the industry put up the additional money and say, "Okay, here is the technology that the Air Force is interested in; and we are interested in it also"; so we take some of that seed money. Whatever comes out of that then gets to be public domain. You have to demonstrate the technology to everybody in an open shop. That has some drawbacks to it because you can keep some proprietary things for yourself. You don't have to give the whole thing away, but it puts most of it in the public manufacturing domain. Everybody sees it, and the people that build the tools can sell the tools to anyone. That is some technology you don't have to reinvent again. That is the approach that is being taken. There is a lot of good technology that is coming out of that.

A: I think the US has gotten away from maintaining these huge strategic materiel supplies.

D: We still have those, but they are not as big as they used to be, but they are pretty big. There are petroleum reserves and a lot of the exotic material.

A: In October 1975 General Evans "proposes to centralize procurement and production personnel in order to create a corporate memory to expand and revitalize production functions at all phases of the acquisition cycle." I think corporate memory is very important. My impression is that in too many organizations, regardless of how small, after a short period of time nobody has been there, and they keep reinventing things that didn't work 10 years ago. Was there

a problem of corporate memory in procurement and production personnel?

D: There might have been; I got there in May 1976. When I went over there, we had a lot of old folks that were still around. Corporate memory is one thing; when they atrophy, that is something else, so you have a problem and have to walk that line. Reinventing the wheel is always a bad aspect of changing folks around too much. I think lessons learned is better done through corporate memory than it is to write it down because people have a tendency not to read. They don't go back and look at the history, unfortunately.

I think you are better off with folks around who either have experienced it or say, "Wait a minute. We tried that 5 years ago; we did it 10 years ago. Not that we can't do it again, but here are the reasons it didn't work. Times have now changed, so let's try it again because we now have a different environment or a different set of rules"; or verbally pass it on to somebody else.

A: There is a lot of that involved, too. The good things don't get written down. Consequently, they get lost when people leave.

In 1976 in Procurement there were 268,512 separate procurement actions. How can that many be tracked?!!

D: It gets to be a tremendous problem. Things get bogged down. You get bureaucratic about review processes. There are a lot of contractual actions that take place. You have to make sure the systems are set up so the routine ones get

DRIESSNACK

taken care of in a professional manner, and the major ones get taken care of by the upper echelon of the staff and get reviewed all the way through.

A: Here is a note about what you just mentioned: Capital investment incentive; problem of obsolescence of industrial plant equipment.

D: We tried to get rid of that. When Jaque Gansler got to be Deputy Under Secretary in DDR&E, he had an OSD program that was geared toward that; get rid of that old junk! I have seen old machine tools brought into a facility where it does the job "adequately" so the contractor doesn't have to buy a new tool, as an example. He can get that out of IPEC, which was the old system we used to have for controlling that out at Wright Field.

We moved the tool at great expense. The tool gets in there and gets set up, and the contractor uses it. It prevents him from going out and buying his own tool, which is a newer tool. Any repair that has to be done is done by the Air Force because we own the tool. If we have an old plant that needs a new roof on it---- I remember at the facility at Lockheed, Georgia, we were going to have to put on a new roof. It was \$5 million for that roof! Lockheed once offered us \$5 million for the whole plant.

A: Defense Contract Administration Services [DCAS] versus the AFPRO versus the Air Force Contract Management Division; was this an overkill, or did you see a place for the Defense Department----?

D: A little different. DCAS has cognizance of plants where people make products generally across the board for everybody in defense, and they are involved with the shirts, belt buckles, processing of food, and things like that. When you get to a major acquisition like the B-1, F-15, Minuteman, or C-17, there have always been 22 or 23 major plants in the country that the Air Force has cognizance over. We maintain an AFPRO there. DCAS is not in that plant, so there is no overlap.

The Navy has several plants that they also look at. In fact, today they are back into McDonnell Douglas because of the F-18. There is a NAFPRO there and not an AFPRO. You administer the contracts for all of defense, so you take care of any defense contract that comes in there. The Army doesn't have any. The Army relies strictly on DCAS. They don't have anybody in plant. DCAS is made up of the three services that have officers on their staff, and they become the DCASPROS in the plant.

A: The Army really isn't that high tech yet in the sense that their trucks are kind of a universal item.

D: But the sensor systems and things they are getting on helicopters and the command and control are getting pretty high tech.

A: I am still fascinated when I see guys doing artillery aiming using a computer out in the field. I think of the dirt, mud, and grime.

DRIESSNACK

What is this Contractor Management System Evaluation Program [CMSEP]? This provides day-to-day evaluation of contractor's methods of doing business. Is that Air Force?

D: That's Air Force. It [CMSEP] is called "sim-sep" and was set up years ago as a kind of standard approach whereby the AFPRO in the plant can evaluate the contractors in a series of functional areas; see how he is operating and scores him. He reports back to Headquarters, Contract Management Division [CMD]. The Contract Management Division out at Albuquerque [NM] is in being. There was some thought years ago about consolidating that or doing away with it. I remember saying to General Evans, "I either want to be the commander of CMD because I think there are some things we should do with that, or we ought to do away with it." That is a big choice. This was when I was the DCS/Procurement and Manufacturing.

The headquarters could have surveillance of the AFPROs in the field, and we didn't need a whole separate headquarters to do that. I still feel a little bit that way today. I'm not quite sure why we have to have a separate headquarters. That two-star that sits out there could sit in the headquarters.

There was a period of time when we paid everybody at the plant. In other words, contractors' DD-250s were paid at selected plant sites. We called them "pick stations." And then they got computers. I got involved when they consolidated down to six across the country, then we consolidated them to three and then finally to one. We moved that one to Albuquerque.

People used to bring vouchers out to Albuquerque, and we processed them in 24 hours. With the advent of computers and the telecommunications we now have, that can all go to the Accounting and Finance Center. Bills can be paid and vouchers submitted, and they don't have to do it by mail or by courier; they can do it over the wire. We can pay over the wire.

A: I read the other day that actual cash transfers are practically zero anymore.

D: In the Air Force we pioneered the checks to banks by wire. I still question today the necessity of having that command. There is also talk about combining DCAS and the AFPROs and the NAFPROs and just having one contract administration across defense. We in the Air Force never felt that worked out properly. A case in point to me was, I was asked to go up and look at AIL in Long Island, which was making an offensive avionics \_\_\_ for the B-1. That was a DCAS plant. The DCAS representative showed up later on. When he did show up, by George, he came to sign DD-250s; he really wasn't that interested in talking to us; he was upset about getting out of there before the rush hour traffic. He serviced the plant from Newark, New Jersey. He had to drive across New York to get out there, and that really bothered him.

Well, we went back home saying, "We can't permit this on a major weapon system," so we essentially sent people in plant. We finally took over that plant. There are quite a few places where we had to do that as we spread out. DCAS didn't have a very good reputation. There are some DCAS

DRIESSNACK

operations that are run pretty well, but the services'--especially the Air Force's--experience with the DCAS is not all that satisfactory.

A: The Systems Command became the executive manager for manufacturing technology called integrated computer-aided manufacturing [ICAM]. Did this fall under your bailiwick?

D: Yes. I have been a big proponent of that CAD/CAM, and finally they integrated the ICAM, the computer-aided manufacturing. These are things that are coming to fruition still today until we finally get there. People talk about computer-aided design, and they have that. Then there is computer-aided manufacturing, and we do have that.

What we actually need is to take the design computer that actually designs the tools that simulates the cut itself to see whether in fact it can be made and how the tool ought to be placed. It actually develops the worksheets that go to the floor for the operator to use so you don't write or type those manually; you do that right there at the work station. That whole process then gets to be integrated. Instructions get sent to the machine from a computer and not necessarily a setup out in the field or on the floor. That is the integrated computer-aided manufacturing we talk about.

A: This was in 1976. What was the status of that?

D: Embryonic. We are still trying to bring it about in a lot of places. A lot of people talk about having CAD/CAM today, but they are separate and independent. They are not integrated; they don't have the ICAM that is a part of it.

There are places where we have this in being, and you will see more and more of it. I think it is more prevalent in the electronics world than it is in some of the others.

A: That sounds like something that would lend itself to circuit- board manufacturing or integrated circuits.

D: And you run simulations; I have seen some simulations run. When I was in engineering school, we had to draw the design by hand. If you did electrical design at all, you worried about overlap of wires, routing, and all sorts of things; some electrolysis being set up and some eddy currents being generated, so you had to bundle them and route them. We all worried about that.

I have seen the review of actual solid state circuit boards, multi-layers, 20 layers, that a computer takes and, through a series of algorithms, runs out the circuitry that has been designed. It draws it; it runs it out on the screen; and you see all this going on. Then it will tell you whether that circuit is going to work or not. If it doesn't work, then you can restructure it, but that is before you ever lay up the first wire. It is amazing the way that happens. It is that process that has permitted Hamilton Standard, as an example, to design the digital electronic engine control [DEEC]. That is on the F-15 and F-16 engines, and all need P&W commercial engines.

A: Once again, that should lower the cost of it; rather than some 10,000 draftsmen out there trying to design it.

D: And it does.



DRIESSNACK

A: In 1976 you started what was called a draft request for proposals from industry. Was that something new?

D: Then it was new. We always sent out an RFP to industry and had meetings with industry. In a competitive environment people are reluctant to ask a lot of questions or say that they can't comply. With a draft RFP, this permitted us to have a dialogue with industry. Once you are in source selection, that is it. It is at arm's length and is always treated that way. Anything that I have been associated with, that relationship was always acknowledged; that very arm's length relationship, and you stop talking to people about it. With a draft RFP, you send this out and solicit comments from industry. They say, "If you put that reg in, it is going to cost you twice as much money. If you want that spec, or we could back off on this just a fraction, then it could cost you half the amount of money."

We wanted comments back on dumb things being done or things that could be done better. It was that kind of a dialogue that got set up. The draft RFP is still around today. It is to set up a freer dialogue with industry before the fact, before we lay something in concrete.

A: In your period in the Air Force, has relationships with industry waxed and waned; sometimes you are more cooperative and sometimes less cooperative? Is this something that has gone in cycles?

D: I think so. There is a kind of get-tough policy that is on now. I think Lehman [Sec of the Navy John] has brought a lot of that about. I think you lose something there. It

really is a cooperative effort, and the more dialogue you have with a contractor, the better off you are.

A: In talking to people that were in procurement before World War II, everybody was on a first-name basis. They would get in their open cockpit airplane and fly down to Long Beach and talk to whoever was down there, and they would fly up to talk to Boeing, and everybody knew everybody else. It was a very, very amenable thing.

D: Now we send our lawyers. (Laughter)

A: Was there more cooperation with AFLC in Systems Command when you were there in Production and Manufacturing?

D: Yes. The advent of the Joint Logistics Commanders brought a lot of that about. This was a formal forum where we got together on a quarterly basis. They were a part of it, so we worked with them. It was just the way that we had to get together to work particular problems. I think that helped to a large extent. Then the SPOs opened up to have a logistics representative in the SPO that looked at logistics and those sorts of things. Now I think we are looking at reliability, maintainability, produce-ability--those sorts of things--and this is kind of the lifeblood of what Log Command has been trying to do for years. I think that gets them a lot closer together.

A: The Contract Administration Division of DCS/Procurement and Manufacturing was done away with and Contract Administration Quality Assurance Division was established. Was that some kind of bookkeeping exercise?

DRIESSNACK

D: No. There was an emphasis put on quality. We wanted to make sure we designed quality into the product and not inspected it in. We wanted to emphasize quality. In fact, today a whole DCS for Manufacturing and Quality has been set up. Skantze set it up at Systems Command. Procurement is pure procurement these days. There is a DCS/Procurement, and there is a DCS/Manufacturing and Quality. The reason was that they wanted to make sure that not only was there an emphasis but a physical recognition of that emphasis at the headquarters.

A: That is important that people see that. Was this Acquisition Management Information System [AMIS] part of this computer development?

D: Yes.

(END SIDE 1, TAPE 9)

D: In fact, that AMIS became Selected Acquisition Information Management Systems [SAIMS] because it got to be a requirement for the major programs. I would hate to tell you the number of briefings I gave, but they must have been in the hundreds on how we were approaching that and the developments and pieces that went into that. Somewhere in my files I will give you all those papers. I went all over the country giving briefings on how that all should fit together; that it was not a whole series of separate management systems being developed.

They were was a part of an integrated management information system that the Air Force was putting together for the whole

financial management area. That is still the only system that we have today. We have the fund status reporting for the budget input process that we get. We have the Cost Information Reports or their equivalent that come in for cost estimating and the way we gather information for developing CERS, estimating relationships and models, and then we have the Cost Performance Reports that document cost and schedule performance. That all gets tied together in an integrated work breakdown structure approach. That whole thing is the Selected Acquisition Information Management System. It all gets tied together in a very logical fashion.

A: Did you start to emphasize small and minority business contracting? Did that come under you?

D: Yes.

A: I always see that as kind of inefficient. You are almost asking to create people to build things for you. Does it cost more in the long run to go that way, or am I misreading this?

D: Sometimes; but there were actually set-asides for small businesses. There were some things that we bought with those hundreds of thousands of procurement actions you talk about. Certainly there is something that the ma-and-pa shop can do, and we don't have to go to a Boeing or Lockheed or Douglas to get it done. It is in those arenas that they are talking about.

DRIESSNACK

When you look at the DCAS and the things that DLA buys, there is a whole series of things that can be done by the smaller shops or the smaller companies. In many cases they are more efficient; that's all they make. They might make just washers or fasteners or belt buckles; whatever it is. They are geared up just to do that, and they don't have the overhead or salary structure that a large company has. To the extent they can provide the product, then we ought to buy direct.

Prime contractors have been buying from them for years. We go through them, and then they add on their particular G&A and profit, and it costs us a lot more money; so there were set-asides for those programs, and in many cases we bought direct. If they could make the spec, they could build to the requirement, then there was no reason they couldn't handle it. The problem is, not a lot of them want to get into the business because of the complicated paper structure that they have to go through in dealing with the Government. They are subject to environmental controls, all kinds of audits and inspections of their books, and this kind of stuff. A lot of people don't care for that. They say, "I deal with the IRS and that is the only Government agency I want to talk to." They would rather just sell to the primes and others, and they don't want to deal with us.

A: Were you still hoping to become a program manager? You had mentioned there were other things in the future. Was this it now for Systems Command?

D: I wanted to be a program manager. I wanted to have my own program so I could do some things. When I got to be the

comptroller at Systems Command and then got to be in the DCS procurement production. I got off on sort of a different level of management structure and in a different environment with a broader view across all of the programs. I never really looked back at that. I would have liked to have had the contract administration function at CMD or do away with it, but I wanted to get that function under my belt either by taking it over or going out and being the commander. I thought I could effect a lot of change and have a big impact in a plant. To this day, I think there is a different way of running that operation than the way they operate.

- A: The Systems Command Commander obviously can't know everything. For someone like yourself, does his ignorance in some cases provide you the opportunity to do things--not maliciously--but you don't have to explain that much; and at the same time, they expect you to do things that are just not possible within the world we live in, within contracting and systems projects. In that sense, how do you educate a commander of what the realities are?
- D: Very cautiously. (Laughter) Well, they are all different. Schriever obviously was well aware of both the business and the technical side, and he had his own ideas on management; and in the beginning he drove a lot of that. We had Howell Estes [Gen Howell M., Jr.], his deputy, who was the one that sort of implemented the things that Schriever wanted done. Schriever was gone all the time, but the folks in house implemented the things that he wanted done. Clearly a lot of his ideas we got in those early days.

DRIESSNACK

With Phillips in there, he again was a program manager and was technically competent on the things that he wanted to do. When I was there as the comptroller, he wanted to be more aware of that side of the house. He appreciated that responsibility and having that kind of visibility and what that meant to a program manager, so he supported that. Obviously the budget side, the POM, the programming, he was aware of and understood the necessity of doing that. I always got along very well with him. He supported what I was doing. He used me as a troubleshooter on cost problems and things. He sent me out to look at the E-4. I didn't ask to do that. He recognized the importance of all that we were doing.

George Brown came in, and I felt he was the leader image with a lot of common sense. When he asked questions that were not technically correct from a layman's standpoint, you would have to say [think] "Okay, that would make sense to a guy----" [An example] He would say, "How do you start this car?" Well, if you are an auto mechanic, you wonder why he asked that question; but for somebody that has to get out and jump in it, they say, "What's the first thing I do? How do I start it? How do I stop it? How do I turn it?" And he asked those kinds of questions, so we were kind of back to basics. You had to think through, "Why am I doing this?"

As an example, when I went in to explain financial management to him, [I thought] "Here is a combat commander"; so I explained to him why we have cost visibility and cost performance reporting on a major weapon system. I tell him a little bit of the history of what has happened, the cost overruns--he is aware of that--some of the things we found

in the plants; the lack of continuity from top to bottom; the lack of visibility; the lack of performance measurement; and they just don't have it. That is what we are trying to get at, and here are the reasons why. This is how we are trying to do it: imposing the least amount of cookbook approach but flexibility for the contractors--and he understood that.

A: He would not be embarrassed to ask these basic questions?

D: No, not at all. He never seemed to be. He was preparing himself to go to this Joint Logistics Commanders' briefing with people that were in the supply business and in the acquisition business, his counterparts. Like everybody else does, he picked certain things that he was going to champion. "What was on the plate at the time? What were the big problems with the four of them?"

He got brought up to speed on what all that was. This happened to be one of the areas that I was involved with. I got along very well with him. In fact, he gave talks where he included this subject in them. He would say, "How did I do?" We would have to give him a paper on something when he went over to talk with the Secretary or the Air Staff on how he was supporting this sort of thing. He would say, "This is what I'm going to tell them. Tell me where I'm wrong." I was amazed at the grasp that he had of the subject. He was a quick study.

Evans obviously came out of the building, and he was R&D oriented; he was operations oriented. He had been testifying. He knew what that meant over there, so it was



DRIESSNACK

not hard to talk with him. Now the technical side of the contracting and what we were trying to do in modernization and manufacturing and the emphasis we were trying to put into manufacturing in the plants and things like that, he had to be brought up to speed on. I never really saw that the commanders that didn't grow up in the command as a problem. They all brought something to the command. At that stage of their life, they have obviously earned the four stars that they got when they arrived there, and they listened to people. They also expected you to do your job. That was an area that you were responsible for, and I think all of them expected you to perform in that area.

(END SIDE 2, TAPE 9--AND END OF FIRST SESSION)

A: Did you ever work with Eaker [Lt Gen Ira C.] when you were on active duty?

D: Yes. Eaker wrote a column in Air Force Times. There were several columns he wrote when Carter became President and we got into zero-base budgeting. He wrote some articles on the cutbacks in budgeting and got into inflation factors and what have you. I was the Comptroller of the Air Force at the time. He came in to talk to Boswell [Lt Gen Marion L.], who was the A/Vice at the time. Boswell called me and said, "I have advised General Eaker to come down and talk to you before he prints anything."

Eaker came down and talked to me, and I gave him some information on how to actually draw a curve and said, "If you are going to use inflation factors, you need to be very careful to have accurate information. Otherwise, the

slightest thing wrong and they just shoot down the whole article." The gist of the article could be 99 percent correct, but one fact could be off and the detractors would tear it up. I gave him that advice and drew some curves for him and said, "Here is how we project things for the 5-year plan. These are the OSD factors, and this is how we use them." He used that information in a couple of articles.

After that, he invited me for lunch. We went over to Army/Navy downtown where he was a member, had lunch, and discussed a lot of things. He told me then that he was going to retire and close his office, and that was the end of his writing. At this time I think his malignancy had gone pretty far.

A: I interviewed him in 1976 over a period of a year. He had his office in the VFW Club or American Legion. He was very, very cooperative and so much the gentleman. I enjoyed interviewing him. He was very candid. With him you had to be careful since he had been interviewed so often, being such a historical figure. I read a lot of his interviews. If a certain question was asked, he would give you the same answer. He had been asked that question so often that he now had almost a fixed answer. I went beyond that and tried to get out of him, "How did you feel? Here is your old friend Arnold who fired you. I would be just absolutely devastated!"

He finally admitted he got on an airplane and flew back to Washington--and there is no record of that any other place--and pleaded his case in front of Arnold himself. He explained all the facts and all the stuff that was going on

DRIESSNACK

there. I think Eisenhower had more to do with that. Eisenhower wanted his friends from North Africa, Spaatz [Gen Carl] and Doolittle [Lt Gen James H.], up there. I think it ultimately had nothing to do with Eaker's performance or anything. It was a case of Eisenhower being the American Forces Commander, and he wanted his old friends. You can't really fault Eisenhower for that, either. If you get along with somebody and you know how good or bad they are, what their strengths or faults are, it is easier to work with them rather than break in somebody else.

D: Well, sure; he had confidence in them. Everybody does that. You might as well have those people around you that you know are competent; who you can get along with, know how you work, feel, and so forth.

Eaker had never gotten a Legion of Merit, we found out. Why, I don't know. It was an oversight somewhere along the way. General Lew Allen decided he would award him the Legion of Merit when he was the Chief. It was a very small ceremony in the Secretary's mess, and Gloria and I were there. I was the A/Vice then so I was able to participate in it. I have some pictures of myself, Ira Eaker, and Ruth. He was then pretty unsteady; stood with a cane, and he sat down right after the ceremony. It worked out pretty good. I had great admiration for him. He was, as you say, a real gentleman. His wife is the same way; she is every bit the lady.

A: When I interviewed him at his office, he blocked out the time. As many people as phone him, his secretary really gave us the privacy.

## (SIDE TALK)

A: When we stopped at our last interview--in August 1974--you were going down to be DCS/Comptroller at Systems Command. Is this kind of a natural progression in the Systems Command that one of the comptrollers from one of the divisions kind of moves up and becomes a comptroller at Systems Command, or is that not necessarily true?

D: Not necessarily. It hadn't happened with my predecessors. They came from other places.

A: Did you welcome this job?

D: Oh, yes! I had been at the command earlier. This was a bigger job, a bigger challenge, and I looked forward to going back up there.

A: The Vietnam War had ended. I have a quote here from the Vice Commander of Systems Command, John B. Hudson [Lt Gen]: "Budgetary limitations continue to impact our ability to effectively manage our current programs. It seems clear that these pressures will become even more severe." Did Systems Command devote a lot of time and attention to developing new management policies to get more for the dollar? Was this really a big push?

D: I think Systems Command pioneered under Schriever a lot of management techniques that are still in the business today.

The whole concept of weapons system acquisition with a single-system program director in charge, with a staff that

## DRIESSNACK

reported directly to him and sort of matrixed back to their parent organizations, whether they were engineering or comptroller or whomever, was something that was pioneered in Systems Command. That is kind of the attitude or approach being taken in DOD today, and it has been formalized. All of the DOD directives have kind of formalized that procedure that was started back in those days under Schriever.

Anytime you are in a wartime situation, you get more money; just a natural thing because we need ammunition, weapon systems, replacements, and so forth. Congress is just freer with money. You don't want to deny the "boys" anything overseas. You can't be put in that kind of position, regardless of the debate going on about politics. You can't take it away from our own boys. One anticipates that after the war all of a sudden things are going to be chopped off or cut down. Of course John Hudson was around in World War II, and we saw what happened at the end of World War II and Korea. We sort of stopped everything. Here we were again with the same kind of phenomena facing us, so he anticipated what was going to happen to us.

One thing happened at the end of the war in the money business that I thought was kind of interesting. We began to develop in those years a system for selling weapons overseas to our friends and Allies called the Foreign Military Sales [FMS]. Through DOD and Headquarters Air Force certain procedures were set up for country-to-country sales. Prior to that we could sell commercially.

There were some countries that did buy things from us commercially. They bought directly from the Lockheeds and

so forth. Then they realized that if they really wanted to get support and be supported out of our logistics system and have the backing of the United States, it would be much more to their advantage if they bought country to country; so FMS sales got to be very big.

One of the things required in the FMS sales was that we charged administrative surcharges and for R&D. In other words, they had to pay part of the research and development that was sort of a prorated share. We added on 2 percent for the admin surcharge, a few percent for R&D, and there was an assets-use charge because they were using our factories, facilities, and so forth.

Those monies in the beginning came directly to the command, and the R&D charges came right to Systems Command. As the comptroller of Systems Command, I was able to take that money and use it for other purposes because it was nonappropriated money. I didn't have any "year" tied to it, so I wasn't worried about fiscal year integrity. I wasn't worried about appropriation integrity. It wasn't R&D money or procurement money or anything else. It was pure surcharge money.

For several years the Congress voted us pay raises; they still do this by the way. They vote you a pay raise, but they don't give you the money. What happens is, we have to find it from other sources which means something else doesn't get bought or doesn't get serviced in the way it should be. In the case of civilian pay, we take it out of O&M, and the military purse we take from anywhere we can get it. We reprogram it into that account.

DRIESSNACK

In several cases I took the FMS surcharge money and paid the pay raise. Also--and we border a little bit along the classified here, I think--several of the black programs got helped with that surcharge money.

The things we were doing out west, as an example, we started back in those days with the intelligence community. They came down and said, "Somehow we are trying to find some money." I took some surcharge money and put it on one of those programs, so they really could continue. Of course today they are paying big dividends, but that was where some of the seed money came from. We had half a million, then a million, then a million and a half; and it began to grow. Congress eventually closed that loophole. Now surcharge money goes to miscellaneous receipts, US Treasury, unless you can use the money to replace the same kind of weapon you are selling.

Somebody in the Air Force, and I have never been able to ascertain who it was, did us wrong there in that if the Army sells a tank, and it could be a World War II tank, they can go ahead and buy a brand-new M-1 with that. The tank will replace a tank. They sell guns, and they buy new guns. They sell old ammunition, and they buy new ammunition.

In our case, if we sell an F-4, we cannot buy an F-16. We cannot buy an F-15 because we have those people in the Air Force that said, "No, an F-16 is not an F-4, and that is not a suitable replacement." Instead of saying an airplane is an airplane or a fighter is a fighter or a bomber is a bomber, and we can replace in kind, they didn't do that. We

were sort of hoisted on our petard. Somebody in the Air Force did that.

I went to Congress when I was the Director of Budget when they changed that law. I said, "Now wait a minute. I want to use this money and put it on the F-16 or the F-15 account." They said, "No; your own rule says you can't do that." We had to figure other ways around it.

An interesting incident is that in this same regard one year we bought--when I was the Comptroller of the Air Force--Joe Addabbo was the Chairman of the Senate Defense Subcommittee on Appropriations, and Congressman Edwards from Alabama was very concerned about spare parts on the F-15. He had gone to the depots, and he had a real concern; and there was a concern that we did not buy adequate spare parts in the beginning. He wanted to buy some additional spare parts, and he had in mind something like \$125 million, which was a large chunk of money back in those days. It still is a large chunk of money.

Addabbo told him he would support that. These two were very good personal friends on that committee even though Edwards sat on the other side of the aisle from Addabbo, they respected each other. Addabbo said he would support that, but it had to come out of the F-15 account.

That meant we lost several airplanes, so instead of buying the normal number of airplanes we were going to buy that year, he subtracted \$125 million worth, and that was quite a few airplanes because at that stage of the game--it was



DRIESSNACK

early in the program--I think we were paying maybe \$20 million per copy. I went to talk to him.

That year the State Department had some agreement with Sadat [Premiere Anwar] in Egypt that we would give him F-4s. We were trying to wean the Egyptians away from the constant reliance on the Russian support, so we sold them F-4s. The F-4s they picked were by serial number, and they took our latest models. We lost those.

Ambassador Komer [Robert W.] was in Defense, and he had come up with a deal--he was working at OSD in the Security Assistance Office at the time--where we charged them the amortized, residual value of those airplanes, so they paid like \$4 1/2 million each for these F-4s. They were brand new; we bought them during the Vietnam War. They were essentially the low-time airplanes. It was a shocker to us. Anyway, they took out of our inventory the best model F-4s that we had and replaced them with nothing. Congress wasn't going to give us anything to replace them, nor was OSD going to put anything in the budget except normal replacements that we had programmed anyway.

I went over to Edwards and said, "We were just victims of 25 airplanes that went to Egypt of our latest model F-4s. They were not programmed to come out of our force, so it leaves a real hole as far as we are concerned. Ordinarily we should be able to take that FMS money and buy replacement airplanes, but because of this quirk in the definition that we have, we somehow have been doubly jeopardized. Why don't you change that for a one-time purpose and write it into the bill so that money from Egypt would go to buy the equivalent

dollar amount of F-15s, and then go ahead and use our spares money out of the F-15 account to buy spares."

We discussed that for a while with him saying, "I'm not sure we can do that." I said, "You wrote the law that took it away from us, and you can certainly put it in the bill. I'm sure everybody will go along with that because what you are doing is just replacing them. Everybody knows they were yanked out of our force." He said, "Let me run that by Addabbo. I think that is a great idea"; so they agreed with it. We ended up getting the \$125 million in spares which were essentially paid for by the Egyptian sale of the F-4s. It was a one-time thing that they wrote into that bill. That kind of incident kept you on your toes to stay on top of it; otherwise, it would have gone away. I was so proud of the fact that I was able to pull that off.

I came back for lunch the day it happened and went into the Chiefs' Mess. General Hill, the Vice Chief, was there. I told him what I had done. He said, "Goddamn it! Don't you bean counters understand that the F-15 is not a replacement for the F-4; the F-16 is." It dawned on me why we were in the sort of problem that we were in. I said, "General Hill, let me explain this to you one more time. I really don't care what replaces it in our minds. In the minds of the Congress we are getting back \$125 million so they won't take away half a dozen F-15s, and we are going to get the additional spares for the F-15s." He said, "I don't care. I'm just telling you that the F-16 replaces the F-4."

(END SIDE 1, TAPE 10)

DRIESSNACK

A: As Comptroller of the Air Force and then as Assistant Vice, did you find the Air Force so operationally orientated that we find ourselves in those situations where our leadership was remiss in understanding these political----

D: I never thought that we put enough emphasis on the business side, and I have a real concern about the force in that regard. I have had conversations with people. Bob Mathis and I have had long conversations when he was the Vice. We always thought that one of the top three people should have a business background--the Chief, the Vice, or the Assistant Vice--so that there is some balance in the front office. Essentially they are the three that run the council.

The Chief, obviously, when he is in town or not busy with the JCS or something; but his focus is broader than just the day-to-day Air Force. He looks at joint matters, and he is kind of "Mr. Outside," too. He is expected to do certain things outside the Air Force; so the day-to-day operation of the Air Force is left essentially to the Vice, and he substitutes for the Chief when he is not there, so the A/Vice is involved with everything.

I felt in operating the council and the day-to-day Air Staff, with the Systems Command background, the business background, understanding the Congress, the laws, and things like that, he could provide better guidance in the way we were doing the programming or the things that we ought to look out for. I could give you other examples of where that has happened.

A: I was once told that the office of the Secretary of the Air Force would have done better to always have the Secretary as the politician and the Assistant Secretary as the engineer. There were mistakes made; that too long you had Siemons and McLucas who were fine engineering types, but they didn't have the political clout; that they got into an engineering phase. You say you talked about this with General Mathis. Has this ever been generally acknowledged that this should be this way?

D: It happened at one time that all three of us had Systems Command backgrounds--Allen, Mathis, and myself. That was pure accident. I was asked to come up and be the A/Vice. I had been the comptroller. Then when the other two left, Mathis and I had talked about that. Of course I stayed on when Gabriel [Gen Charles A.] and O'Malley came in as the Chief and the Vice. They had a very close association that went way back to captain/lieutenant days at the opening of the Air Force Academy. O'Malley came in and worked for Charlie Gabriel back in those days, and there was a close association set up. They knew how each other thought and operated. They had been with each other intermittently throughout their whole careers.

A: While we are on the subject, does this make it pretty tough for a person like yourself? Did you find yourself as odd man out?

D: Not at all. I have never felt that I was odd man out in any place I have been. I don't care who they are; the operators listen to advice. I think when our people get to that level, they are big enough to understand that they may have

DRIESSNACK

a shortcoming in that or they don't have the background, and they rely on somebody else for background and advice. I never felt that my counsel was ignored or just gratuitously accepted and not acted on. It was always welcome. The real problem is getting someone with the right background to that level.

A: In this time period over at Systems Command, there were business strategy panels created to review acquisition, procurement, and source selection. It was chaired by you and was an advisory panel only. Was this something new that they started?

D: Actually my predecessor did. We were trying to look for some ways to do more with what we were getting from contractors. Somebody that has been raised with the Defense Acquisition Regulations, the DARs and the old ASPRs; we have lots of folks around that memorize those. They know them like a minister knows the Bible. They can quote them chapter and verse. The problem is, they don't have a new thought in their head.

What we tried to do was to generate some new thinking and get some new ideas; provide some incentives through the contractual arrangement whereby we could extract from contractors some new ideas; or if they generated savings, we would share those savings. There was always this feeling among people that really didn't understand the business; maybe that is too broad because there are a lot of folks within Systems Command that always felt we should have gotten that "new idea" in the beginning, and they were putting us off.

For instance, if somebody came in with a good idea or good savings, then we would share with them. We might share 50/50. Some said, "Yes, but they should have given us that with a proposal instead of 2 years later." As a result of operational experience and as a result of the manufacturing floor, you pick up ideas. If you understand anything about a factory floor at all, it is the people on the floor that generate the ideas. They get something to make. It has been engineered and has gone out through the manufacturing process procedure, and they are making it. The machinist or the operator will say, "If they had done this, I could have made this in half the time"; or "A better approach would be thus and so."

Most companies have incentives for their people. They have suggestion programs where they share in savings. Some are better than others, but they all have them. For us to share in that would have been great. I would rather have 50 percent of the pie than nothing, so we tried to get some new approaches and new thinking going.

The strategy panels themselves were essentially to determine before we ever signed a contract how we would approach this particular contract: what we would provide by way of tooling, what we thought the industry should invest, should we buy more GFE or should it be CFE--contractor furnished versus Government furnished--all those sorts of things. A lot of effort went into that. The complete tooling of the Fort Worth plant for the winner; they won the F-16 at that time. There was a lot of effort that went into how much we should pay and how much General Dynamics ought to pay. We

put up something like \$50 million at that time. They were asking for \$125 million, but they completely retooled that facility. Of course they are competitive and are selling worldwide with the F-16. The value of that investment paid off.

One had to look just beyond the Air Force. Look what happens to the country; look what happens to gold flow, the balance of trade, all of that. We were able to sell, and are still able to sell, aviation products around the world. That is the only positive thing in our trade balance. Even in the military wares we are able to build a good product. Any time you modernize a plant, you end up with better quality, more efficiency, which is going to result in lower cost.

A: This is kind of off the subject, but did the F-20 ever have a snowball's chance in hell?

D: I don't think so. Unfortunately, here was an industry, Northrop, that invested their own money; made a hell of a good airplane. It just wasn't an airplane that the Air Force had a requirement for. They thought it should have been a replacement for the F-5 worldwide.

One phenomena about this town and about the world is that foreigners don't buy anything we don't have in our own inventory. I have had no less than a dozen or two of the Attaches tell me this over and over again. I asked them why they bought that particular system. They tell me in different words the same story, which essentially is that the United States has got a tremendous capability for

research and development. We spend billions of dollars on it. We have wind tunnel test facilities at Tullahoma; Eglin for the armament; Edwards for the aircraft aerodynamics; we have missile sites; and we have all sorts of laboratories that do these component tests. We spend literally billions of dollars doing that.

When we make a decision on something, we put it in our own inventory. It, by definition, must be the best of the bunch. Therefore, that is what they want. To go with anything else would be kind of ludicrous on their part. "Why would we take something that you have rejected?" That is their thought process. They can't afford to do it; they can't afford the testing, and we have gone through the thought process. They have come over here and learned to fly. They go through our tech schools, and they see the end result of what we have, and they want the same thing. The other thing they know is that once it is in our inventory, we will logistically support it forever.

A: Northrop obviously knew that, so what were they doing?

D: I'm not sure that people understand that. Working in industry now, I see people that really don't understand that. I will give you a case in point. It goes back again to who sits on the council.

When the great engine war got underway, so to speak, and the decision was made to share the buy with the GE 110 engine and the Pratt & Whitney 220 engine, they decided an easy split for logistic support purposes or operational purposes



DRIESSNACK

would be to leave the Pratt 220 engine in the F-15 and put the GE 110 in the F-16.

A: That sounds reasonable.

D: Yes. I called George Monahan [Lt Gen George L., Jr.] when that happened. I stayed out of that whole thing, by the way. I didn't have a thing to do with that because I had just retired and want to work for United Technologies. Pratt was one of the competitors, so I never discussed that with the Pratt people. After the decision was made--I didn't get involved with the proposals; I didn't give any advice; just stayed clear of it--I said to Pratt, "You have now lost your FMS sales on the F-16." They said, "Oh no we haven't." I said, "Believe me, you have."

I called George Monahan who was in R&D and had been the F-16 program director; he was now Deputy DCS/R&D. I said, "Out of my own curiosity, did the Air Force make a deliberate decision to deny our foreign customers the Pratt 220 engine in the F-16s?" He said, "No; they can buy any of three engines. They can buy the old engine, the F-100, or they can buy the 220, or they can buy the 110." I said, "George, they will not buy anything but what we put in the United States Air Force F-16. I will guarantee you. I have been in this business too long and have had too many conversations with too many Attaches and foreign airmen. They tell me the same story," which I have just related to you. He said, "I'm not sure about that." I said, "I am positive. You watch it."

The first thing that happened, Israel had a buy, and they went with the 110. Israel was trying to extract from the Air Force a promise that they could eventually get the 220 engine because they were now going to mix their inventory. They had the Pratt engines in all of the F-15s and F-16s, and now they are going to have to mix the inventory. The Air Force wouldn't give them that. They wouldn't say that eventually they would put the 220 in. Skantze was the Vice Chief then, and he wouldn't say that. That was kind of ridiculous, I thought, if this was going to be a mixed buy each year.

They were going to build an engine bay in the F-16 that was going to take either engine; to say that you are essentially signaling to GE that they are going to always have the engine in the F-16, and that was not the name of the competition.

From a business standpoint, I never did understand that statement. But the Israelis had no choice, and the Israelis told me of that conversation with Weinberger [Caspar W.] and Skantze; so they went with the GE engine. Once they did it, the next thing that happened was the Turks and then the Greeks. There was no choice there. Pratt all this time thought they had a choice. I said, "You are wasting your time. They will go with the GE engine in the F-16 because until the Air Force puts the 220 in the F-16, there is no foreign national that will buy that.

A: I noticed that even with the M-16 rifle. As much bad press as it has always gotten, when you look around at the countries that could buy any rifle, they have the M-16

DRIESSNACK

rifle. Like you say, the whole logistics, the whole ammunition manufacturing support.

D: There is a mystique there for some reason. We have tested this ad nauseam, and we have decided that we are going to buy that particular weapon system. Once we buy it, that is good enough for the foreign nationals because our system is so overwhelming they can't come close to even thinking that they can match anything.

A: They are absolutely right. They would be foolish to go with a different system.

D: Absolutely. They let us spend the money on R&D and elaborate testing, and whatever results we come up with is fine with them.

A: A small case in point; a friend of mine has a Renault car. He broke the accelerator cable the other day. They had a hell of a time locating one. They finally located one in Birmingham. Renault may be the greatest car in the world, but the logistic support isn't there like it is for Chevy, Toyota, or Datsun.

Talking about those black programs; there was a program on Public Television last week about intel gathering with satellites. Did you see that?

D: Yes. Very good program. In fact, I was surprised at some of the nomenclature because when I was on active duty, all that nomenclature was classified.

- A: We talked about these last time, but in procurement they had these "murder boards." Were these kind of devil advocate boards where the worst of anything was ferreted out?
- D: Essentially, the murder boards were set up to take a look at the model contracts that came from the divisions. They came up to AFSC, and we went through those and questioned everything that was there to make sure people had done their homework, that the ideas were sound, that they met the intent of the law and regulations.
- A: This note says, "Review of management overhead and cost accounting." Was this really more of a look at what the management was telling the Air Force in regards to how the Air Force and management had signed a contract? Was this a closer look at the manufacturer or contractor?
- D: There was a long period of time where we accepted everything that came from contractors. If they said it was going to be \$1.98, we accepted \$1.98; but we were getting more and more into the mode of going out and reviewing the contractor's internal cost systems ourselves to make sure that he had adequate cost control and questioning the amount of overhead that he carried. We were also doing "should cost" studies at this time.
- A: By law and agreement, could you get into a manufacturer's books?
- D: DCAA; anything that was charged to the contract, they had audit responsibility for.

DRIESSNACK

A: One of the big programs coming along at this time was the B-1. That was growing in cost, but the Carter Administration killed that. Did you have to come up with any special studies for the Administration at that time?

D: I will tell you a story about the B-1. The B-1 really was underway when I was out at ASD. Just before I came up to Systems Command, we had done a study out at ASD looking at inflation factors. We had some very funny inflation factors we called the Moot factors. Moot [Robert C.] was the comptroller at OSD at the time. They provided some factors for inflation. The inflation factors for the B-1, as I recall them, were 1.9 percent for R&D and 2 percent for production. The airplane itself costed out at about a \$50 million airplane.

I directed a study at ASD on where inflation was really headed. You have to remember back in this time frame, the end of the Nixon era, he had some price controls on some things. They eventually were lifted, and that was like a pent-up explosion. Costs took off. When Carter came in, we started into double-digit inflation. There is a lot of economic theory on why all of that started or why it went the route that it did. All I knew was that it was going to have a tremendous impact on our 5-year plan. If you are now changing factors that were arbitrarily set at 2 percent, and we are galloping along here at 5, 6, 7 percent---- We projected in our study at Systems Command that it would go to double-digit, and everybody raised their eyebrows. Well, little did we know it would go well into double-digit, but we in fact projected that it would go that way.

We briefed the Comptroller of the Air Force, General Pete Crow at the time, and Crow was impressed with the study and the depth of the study. He asked us to come up and brief OSD. I came up with the two people that did it, and we briefed OSD. The OSD folks said, "Can we keep this paperwork overnight. We want to study it." We said, "Absolutely." We gave them all the backup material, the briefing charts, the study that we published, and everything we had. They looked at it. The next morning we went in to meet with them, and they said, "There isn't anything in here that we can argue with."

They changed the approach then at OSD whereby you use the Moot factors for your projections unless you had done a study on a particular weapon system which indicated it would be something different. They let us then use our factors on our programs at ASD. We applied that to the B-1, and the B-1 went overnight to a \$100 million dollar airplane because of the inflation factors. The inflation impacts on the out years, and that is compounded. As you went further out, the more inflation we had, and all of a sudden it took hold.

Well, General Crow was beside himself; in fact, it was beyond \$100 million. He said, "We can't sell anything at this rate," and he wanted to reel it back in to \$100 million. It is mind-boggling to consider that we would pay that much for an airplane. When you buy them two or three at a time and it is stretched way out in the future, you are running that great big facility out there for just a couple of airplanes a month, it is ludicrous the way we actually buy airplanes. That is one thing that happened, and we did use those factors. Those factors got to be kind of a

DRIESSNACK

standard, certainly within the Air Force; and they were also used by others.

We gave them to industry, and they used them. We kept them upgraded. We had some lieutenants with master's degrees--one out of St Louis and one out of the college that worked up the models we were using; University of Pennsylvania, Wharton School. We did some modeling and went back and also used the models of these universities. We used the Chase econo-metric model; we used a lot of things to make forecasts of where we were going to be.

What I wanted to do was to get some realism in the cost forecast that we had because we invariably would come in low either by direction or to sell a program. We always put the best construction on everything. I thought realism was needed more than anything else, and initial estimates is where that started.

- A: There was Project Corona Quest. This was an ad hoc group headed by General Evans when he was DCS/R&D. What you are talking about would have been after that study and evaluation of the B-1 program. This was in September 1974. Were you familiar with that?
- D: That study in the 1974 time frame was taking a broad look at the whole program. Later on Jones did the same thing. He took a look at the program; are we ready to go to production? He did it in a different way. He had an ad hoc group that he picked out of the Air Force; I happened to be one of those. My particular chore was to go out and visit the contractors and make my own determination of whether

they were ready to go to production and then come back and brief him. That is just the way he worked. He worked with ad hoc groups as opposed to the total Air Staff, and then he balanced that off with people he had confidence in against what the staff was telling him. It was just his style of management. Lew Allen's style was completely different. He used the Air Staff completely.

A: What was your impression of whether the B-1 was ready to go production?

D: At that time, it was. They were ready to go. When Carter came in and cancelled the production program, he did not cancel the R&D program so we kept on with those R&D airplanes; we kept running flight tests. We had a factory running out there. Of course everything got to be very, very expensive. We cut out all of the preparation for production in the early years. Toward the end of the Carter years, we were hoping that somewhere along the line somebody would see the light. We really needed a replacement bomber.

Congressman George Mahon was the chairman of the House Appropriations Committee when Carter came in. Mahon also chaired the Defense Subcommittee of the Appropriations Committee. He held two hats; a real southern gentleman and someone I had a lot of respect for. I went over to talk to him a few days after that cancellation. He told me that announcement took him completely by surprise. Here is a leader of Congress in the same party, and he knew absolutely nothing about it. He was an avid supporter of the B-1. He personally supported it as did his committee. He was really taken by surprise.



DRIESSNACK

- A: Was this simply a political economic decision that the Democratic party wasn't going to have that system?
- D: Yes. The President just announced it, and the Congress did not know about it. They were not forewarned; they just came in and made these announcements. I don't think they were very astute on the workings of Washington as opposed to Georgia or wherever the folks all came from, but they should have been. They had ample opportunity; they controlled the House, and they essentially controlled the Congress, but they didn't take into their confidence the leadership. It was a big surprise, and I was surprised when Mahon told me that.
- A: General Jones takes a lot of heat for saluting smartly and then turning around and saying, "Okay, it's gone." Do you think that was fair? A lot of people today criticize General Jones for that. One minute he said the Air Force couldn't live without the B-1, and the next minute he said the program had gone.
- D: People read Jones differently. I think Jones is a realist. I suppose you could call him politically astute, but he is a realist in this town. He has been in the town a while; he understands how it operates. You can fall on your sword and sacrifice yourself, but then what happens? We are not going to get the airplane back. He not only loses the battle but he also loses his position. This way he lives to fight another day. It just depends on how you want to evaluate it. I have been an admirer of Jones over the years. I worked for him, and he is not very tolerant of incompetence. There was this unique style which I don't particularly agree

with, but it was his style; this ad hoc approach. He ran the Air Force by ad hoc groups.

If you happened to be in one of those groups or one of those people involved that were asked or participated, then chances are you didn't see anything wrong with that because they were asking you for your personal opinion on things, and you were part of that power structure. The people that were not part of it wondered about it. Having done that, if that was going to be his style, I think he should have cut the Air Staff in half because we didn't use them.

A: Then that obviously would build a lot of resentment in the Air Staff.

D: It builds frustration. People work their heads off and deal with problems 7 days a week. All of a sudden he has another small group of two or three people who are really going to make the decision.

(END SIDE 2, TAPE 10)

D: When I came back from my trip to the plant, I stopped in to see Abner Martin and talked to him. I said, "Is there anything I have overlooked or anything I am going to tell the Chief that you disagree with? Let's talk about that." Ab Martin and I did talk about that, and we didn't have any differences of opinion. I went up then and rendered a verbal report to Jones. He asked me a series of questions; it was in his office, and he did this with everybody that was involved. We looked at different aspects of the readiness; whether they were ready to go. Based on that, I

DRIESSNACK

guess he went over and made his testimony, saying, "We are ready to go."

A: If they cancelled the production side, why did the Administration allow the testing to continue?

D: My own opinion is that they didn't understand the business. They thought when they cancelled production, they cancelled the program. It was just unbelievable that they would do that. Essentially we stretched out production 4 years. We produced the development airplanes and went on with it. Then you had a hot bed ready to go when the Reagan Administration came in, so we just sort of moved out. We lost several years as far as operations were concerned.

A: My impression is, whether you agree with a fellow or not, you had Harold Brown as Secretary of Defense; or was he distracted with other things so he would not have tracked what was going on with the B-1 all that time?

D: I don't know. I can't speak for Harold Brown. I just figured that he was part of that particular power structure. If he wanted to be a part of it, this was one of the things he would have to swallow.

A: Did you deal much with Harold Brown?

D: Not in that capacity.

A: Had you dealt with him previously?

D: Previously, when he was at DDR&E, and I was in the building. He was Secretary of the Air Force, but I wasn't in the building at that time.

A: How was he to deal with?

D: Intellectually he is a very bright person. People like that don't talk much; they listen a lot so you really have to be on your toes and know your subject when you go in and talk to them. If you go far afield or talk about something that you heard about someplace; and there are a lot of people that not only name drop but they drop technical phrases and things like that, and you couldn't do that with Brown. He would see right through that sort of stuff because intellectually he is a very bright person.

A: Where is Harold Brown now? He sat out at Cal Tech in exile until the Democrats came back in.

D: I don't know.

A: I have a note here that in fiscal year 1975 the B-1, the A-10, the advanced tanker-cargo, Minuteman III, air-launched cruise missile, and AWACS took fund cuts. There were funds allocated but not requested for the A-7, F-111, and the F-5E. In other words, it appears any system in being was funded but anything new was not.

D: I think that is typical of our politics. One thing is, if you start a program and it carries on--it has its own inertia--and if they didn't give us a dime in the defense bill this year, there would be hundreds of millions of

DRIESSNACK

dollars spent just based on prior year commitments, authorizations, and appropriations because the money lags by the time you get on contract.

If you look at the budget process itself and the way we actually spend money on an R&D program, O&M money spends out 95 percent the first year and R&D something less and procurement a lot less. Spend a small percentage, and then as you go on out through the years, you will spend the rest of it. That is just the phenomenon of how the system works as you contract, build up, make commitments, long lead; and you really don't pay the final bill until you get the product. You sort of build up through progress payments, and that cash flow compounds as you go across the years. It doesn't all spend this year, but you must order it with that fiscal year; and whatever you ordered that year must be paid with those fiscal year funds. Those are the rules that we have.

- A: Every once in a while you hear talk about they ought to go to 2-year budgets. Would that really change anything in this area?
- D: I think they ought to go to 2- or 3-year budgets. I have been an advocate of that for a long time. Multi-year buys and 2- or 3-year budgets are something that we should get into. When this new Administration came in, they were looking for new initiatives; the Carlucci initiatives were a product of that. I was a part of that working group that really got together on that. I pushed multi-year contracts and 2-year budgets from the very beginning. I have been an advocate of that for a long time.

A: It is a political jump.

D: Last year Congress went to a 2-year budget; they essentially looked at a 2-year budget, but they have made so many changes in it that you have to go back over with a supplemental. You see a lot of changes made on the Hill this year with the budget. They may end up with about the same total number, but they have changed every line item in it. It is up or down; up on this one and down on that one, and it kind of balances out. When you say, "Well, there wasn't that much of a change made"; you go look at it, and it is devastating because you have to change every line item that you sent over there. That is crazy; that is micromanagement at its worst. That is not the business of Congress at all. Yet, if they didn't do that, I don't know what they would do. They have that big staff; those 30,000 plus staff people over there.

If you think about it a little bit, the defense budget is the one thing that gets visibility every year. They don't have enough guts to change anything in Social Security. They can't change all of those commitments we made in retirement funds and so forth. They are not going to touch medicare or any of the old people's stuff. That is a very hot potato, and they won't do that; the House of Representatives in particular because they are up for election every 2 years. One would think the senior statesmen, the Senate, would change some things, or at least offer some new stuff. They are as political as the House is on a lot of that, and it is very disappointing, and I have told them so on the Hill when I went over there.

DRIESSNACK

An example I show of my opinion of the Congress is that John F. Kennedy was a student of politics. When he was ill, lying in a hospital bed, he had gathered up and had done a lot of research on the Congress and the political system in the country, and he wrote a book, Profiles in Courage. Primarily it was about the Senators who had gone beyond their particular State's parochial interest and made decisions for the good of the country, the good of the total, even knowing that their careers were in jeopardy. Some of them were voted out of office. Knowing that, they cast their vote for the good of the country. That is why he called them "profiles in courage." It turned out to be a very thin book. Since he wrote that book, there is nobody that I would add to it! I made that comment a couple of weeks ago up on the Hill to a Congressman.

- A: As a history major, one of the things that was always pointed out was that the Senate was supposed to be the deliberative body of the legislative branch where we made these philosophical choices and carried them through; and the House was down there grubbing around.
- D: One would expect it of the House because they really represent the constituents. For every 550,000 people there is a Congressman. He should in fact represent these 550,000 people. Whatever the majority of his people want him to do, that is what he is there for. The Senate looks across that entire State, and that is why they are there 6 years. Somewhere in my reading I remember Jefferson saying that he wanted a legislation to copy what Virginia was doing. He gave an example of drinking coffee. The hot cup was the House, and the saucer where you poured the coffee to let it

cool off a little bit was the Senate. It had that kind of a balance. I always thought that was pretty good logic.

A: You are right. The Senate has become just an extension. Instead of going to your Congressman to find out why this is happening, everybody writes their Senator.

In May 1975 Denmark, the Netherlands, and Norway signed a memorandum of understanding with the procurement and production of the F-16. Would you have gotten in on something like that?

D: No. I was aware of all that. Eventually there was an accounting and finance representative who went over there to take care of the exchange. They actually worked out an exchange of how that would work. Depending on how that money floated around--the value of the money--the prices could change. There was an actual predisposed arrangement made on how that exchange would take place. After several years of operation, that went very, very smoothly. That was done mostly by the SPO, the business arrangement which some special people set up to do all of that. That was a great example of what we can do with Allies.

A: We talked a little bit about this before, and you mentioned it again: forward financing, the obligation of funds for future services beyond the end of the fiscal year for which the funds were appropriated.

D: There are some cases where you have to forward finance because of the long-lead items. We would buy things; tooling is an example. When you are in production, there



DRIESSNACK

are forgings that take 2 to 2 1/2 years to get. We would forward finance those long-lead items, and then they are subtracted from next year's budget. You will find that in the bill. When the bill comes out, there will be some things that are forward financed. You try and keep that to a minimum. Congress guards that very jealously.

A: In 1974 AFTEC was established out at Kirtland. Apparently this was over dead bodies of the Air Force. Money was directed to be spent by the Comptroller, General Deluca [Lt Gen Joseph R.]. Were you involved in that, or did you just view it happening?

D: I was comptroller of the Systems Command when that happened. I think Howard Leaf was the first commander out there. They had to come through us for their money, so we had to work up a budget with them. He had a comptroller, a colonel, who came in. We sat down and worked through that first budget. I wasn't aware of the politics in the Pentagon when that decision was made. Once the decision was made, we made it work. As far as the comptroller managing the money within Systems Command, they got their prorated share, and we funded them adequately.

A: The argument was, as I understand it, that the Army and the Navy had had an operational test and evaluation center for years, and the Air Force was letting the commands do it; once again a turf battle. Once this was up out there, all of a sudden TAC, SAC, and MAC lost their monies for that.

D: The others had what they called OPEVAL [operations evaluation]. The white hats took the ships to sea, and the

contractors stayed on shore. We had Edwards; in fact, I participated in one test on the C-133 program. MAC crews came out during the latter part of the flight test and actually flew the airplane. They flew operational lengths of missions. We actually did that. One night the test flight crew from Edwards would fly it, and the next night a MAC crew would fly it. The MAC crew and crew chiefs and maintenance people were all there. They came down and participated as a part of the test task force and flew simulated operational missions. They did the same thing in the other operating commands. TAC and SAC came down also and did that.

We in the Air Force felt that that was adequate. We didn't need another organization. It was just another administrative body that was going to be set up and not going to do anything different than this group was doing.

A: In this middle 1970s period Air Force had the Armament Development Test Center, Arnold Engineering Development Center, Eastern Test Range, Flight Test Center, Special Weapons Center, Space and Missile Test Center to provide a lot of support to other DOD agencies as well as Systems Command. Was there a problem in supporting the DOD; was the Air Force using its money for these other agencies, and was this a fight to try and get them to contribute some money to this?

D: We funded all that. We considered them National assets, so we funded for it. The justification for the funding was that we did support not only Air Force but other agencies.

DRIESSNACK

A: Were you getting additional money beyond Air Force needs?

D: One thing that Bob Anthony did when he became the comptroller for OSD was to set up a procedure which we called industrial funding. The industrial funding meant that all these places were supposed to pay their way. Not only did you charge the other services, but you charged your own SPOs. To give you an example, in the case of Ben Bellis when he had the F-15 program, he had the engine sent to Tullahoma, and he had to pay for the test. Okay, the rate is so much. He could go and run the test free at a Navy installation in Newark because they set it up differently. They charged incremental costs, and we charged total costs.

George Brown was the commander at Systems Command when I first went up there in cost accounting. I remember going in and chatting with him about it. I argued that Tullahoma is a National asset, and we are going to fund it whether or not anybody goes in there because so much is invested in the place. It is the only place in the free world where you can do some of those things. We should take a different approach where it is partially funded by Systems Command, and then the others would pay some incremental costs, marginal costs, for running a particular test; but certainly not for cutting the grass and paying the rent and heat and electricity. They ought to pay the cost of running their particular test. Eventually that is the way we came around to it.

A: Was the Air Staff worried that they were supporting things for these other agencies?

D: That is the way it is set up. There are a lot of things like that. The Army funds certain things; the Navy funds certain things. By way of example, every year the Army has to fund all transportation costs of the BX stuff that goes overseas. If you buy a tube of toothpaste overseas, you pay the same as you do right here in Washington DC. If you buy a six-pack of beer, you pay the same. Transportation costs are carried by the services. It doesn't go to the GI; he doesn't have to pay for those, but they are all funded by the Army. The Army does that, and it does it for all of us. We know it is in their budget, so we fund other things. It is up to OSD to determine who does that particular funding, then it is justified and defended that way.

A: I think its time is passing. Whether people like it or not, things are getting so integrated. Like communications, the Air Force handles almost all the strategic communications. DCA is almost an Air Force supported agency from what I can read.

D: We do a lot. One of the things we did at Systems Command when I was there was to develop a set of criteria: Cost Schedule Control System Criteria. That resulted from a meeting I went to when I was actually over in the Pentagon earlier working for the FM, the Assistant Secretary of Financial Management. I was a representative at a group called the DOD PERT Cost Group. They were trying to develop or get the services to follow that particular management technique.

The Army came in one day at a meeting and gave a briefing on the main battle tank. They had developed a work breakdown

DRIESSNACK

structure with the Federal Republic of Germany, West Germany, and it was in two languages. I thought this Army major did a heck of a job resolving that issue. This was one of the basic things that we used in that technique. It was a work breakdown structure [WBS] where he actually took the tank, broke it into its component major parts all the way on down to every component. That is the way you managed it. You budgeted that way. You estimated it that way, controlled it, and reported it, all against a single WBS. That first tier breakout got to be the contractual items. You had the tank, and it got broken down into the chassis, the power system, etc.

Like an airplane, we would break it out into the airframe, the avionics, the power plant, and so forth; the AGE, the training, the data. All that goes along with it and gets to be contractual items, and then that breaks down further. The airplane breaks down into the fuselage, wheels, brakes, wings, etc. Eventually people have to work on these items, so in the plant the functional people--whether it be engineering, manufacturing, design, test, and so forth--would do work.

Whoever designed the empennage or wing would work on that part, so you had a functional matrixing with the work breakdown structure. We bought hardware; they managed people working on the hardware. Where those two intersected, we called that a cost account. Interesting approach, and we still use it today, by the way.

Well, that started back when I was on the C-141 program at ASD. We used PERT time as our scheduling technique. It was

actually a networking technique that worked very well. But PERT costs I could never see, because they were trying to cost out a network, and that works pretty good in construction, but I didn't think it worked too good in what we were trying to do in the R&D business.

At this OSD meeting we were at, I said I thought the Major had done a super job. The chairman of the meeting from OSD asked if he was willing to stamp across his manual that it met the requirements of the OSD PERT Cost Guide. He said he didn't really know. I said, "What difference does it make? He has a workable kind of solution, and he has had to work it out with a foreign national, and I think he had made really good progress." He said, "Unless it does, we can't accept that as being a DOD solution."

I said, "Are we going to try and dictate to every program that they have to do exactly what you have in this manual? That doesn't make any sense." I was a major then. They said, "You don't understand." I said, "I sure as hell don't, but I will tell you one thing; the Air Force can't buy off on that kind of stuff. If that is what this meeting or this group is all about, we are not going to participate."

He told me I couldn't speak for the Air Force. I said, "I'm here as the representative of the Air Force. In fact, I'll tell you what. If this is the way its going to go, I don't want any part of it," and I left. He said, "You can't do that!" I said, "There isn't anybody in this room big enough to stop me." I picked up my hat and walked out. To this day, the Air Force never went back.

## DRIESSNACK

I went home and wrote 10 criteria for meeting PERT costs, meeting the goals of what we really wanted to do. Rather than tell them how to do it, we wanted to tell them what it was we wanted and leave them the flexibility of implementing it in their own way. I talked with Ron Fox, who is now up at Harvard Business School. Ron was the Deputy Assistant Secretary FM at the time, and he thought it was a good idea. The more we thought about it, we decided to not even call it PERT costs. It was criteria for meeting a cost and schedule planning and control system, so we called them cost and schedule criteria and picked up the acronym CSPCS. That eventually was adopted within the Air Force.

I eventually went over to Systems Command to implement that; got transferred over there as a colonel. For the first 7 or 8 years of its life, I essentially ran all the evaluation teams that went out and evaluated contractor's systems to see whether they, in fact, met that standard. It got to be put on contracts in lieu of a specified management system. We applied criteria to the contract. The contractor then proposed how he was going to meet those criteria. We evaluated that proposal both on paper and in the plant.

As the comptroller at ASD and at Systems Command, I had direct control of those things that were going on in that arena and was able to keep it on track. When I went back up to Systems Command, we eventually became a joint service implementing group. I was active on the Joint Logistics Commanders' Group--the Army, Navy, and Air Force--that would meet. We made it the Joint Logistics Commanders' approach. There was a Joint Logistics Commanders' Guide published. DOD eventually published DODI 7000.2, which is the cost and

schedule control system criteria. It is called Performance Measurement, and it is still in being today.

I still have the same problem with it that I had back then. People try and make it something that it is not. You get into things like, "We ought to have periodic reporting against short work package so we don't go to the end of the contract and say, 'Hey, what happened?' We need visibility along the way." We were saying that we needed some short increments of effort that could be measured along the way and which could give you the visibility to flag a potential problem.

You get into the argument of how short is short. When you say, "On a battleship short is one thing, but on building a rifle, it is something else, and on an airplane it is something quite different." The industry groups keep saying, "Look, at least once a quarter we must know where we are." Of course, for some things that are going to be done in a year, maybe we want a reporting every month; so we got reports every month. You had to close accounts out at least once a quarter. Then 3 months got to be the magic number.

Well, for most activities it is lots less than that, but we can't let it go any longer than that. That got to be a standard: It is 3 months. The people that evaluate say, "Suppose it is 3 months and 1 day; suppose it is 3 months and a week?" You use your judgment, and you can't legislate judgment or common sense; but industry keeps asking so many specific questions, and I keep telling industry, "You are the ones that are driving it to the detail because every



DRIESSNACK

time one gets answered, you want that then put in concrete some place."

The guide that is used for evaluation has almost become the criteria. You forget what the criteria are. I'm ready to wipe out all of that peripheral stuff and just go back to the basic criteria and let people use their judgment in evaluation. That made a big impact on the way we evaluated contractors' internal cost control systems.

A: Is it a case where industry would rather be told; sort of a "protect themselves" situation?

D: Initially the criteria were different. The criteria were measure of performance on how you were doing on a contract. In developing cost models, what we did was to take the historical data that we had and look for some estimating relationship. It turns out that ampere weight, dollars per pound----

A: It has always intrigued me that you can tell how much an airplane is going to cost by how much it weighs. Is that still true today?

D: That is still true today. We use composites, titanium, and lots of things other than aluminum, and it still works out.

(END SIDE 1, TAPE 11)

D: Thrust is estimated as dollars per pound and is something we have used for a long time. I have been on a kick for years that technology has changed that. We need to take a

different look. It turns out dollars per pound in airframe is still a valid CER; still a valid estimating relationship. Models are still built that way. As I look at things like avionics and propulsion systems, however, where we have changed quite a bit, then I don't think that holds true any more. We need to change the estimating relationships that we have.

People use models the wrong way. There was a "Price" model setup by RCA that looked at avionics. I tested that model when I was at ASD with something like 5,000 components that we bought off the shelf. We put the physical and technical characteristics into the model to see if we would get out what we were paying for them, and they were all within 5 percent; and we couldn't estimate that good. We said, "This is an excellent model." Not only that, now we had 5,000 additional items that we put into the model and built up its data base. People use the price model for estimating airplanes, which is wrong. The background of it, the whole thing, was avionics. It was built with Air Force and NASA support, and RCA built it. It is proprietary with RCA.

- A: In building these models, would it have been possible to build them in 1955 without a computer to crunch in all these numbers?
- D: We did have models back then. We used learning curves, but they were essentially primitive. Now with computers it is much easier, and you can get lots more sophisticated relationships. You can break out components and get different pieces of the model.

DRIESSNACK

A: Has this truly helped, or are we still finding ourselves with the same problems we had 30 years ago?

D: Models are used for parametrics. You want table costs, and I say, "What is it made out of? How big is it? Is it made of metal, wood, glass?" If you are in the business of building tables, you can tell me. Even a builder building a house can tell me if it is made of wood, it is going to be \$50 a square foot. If it is out of masonry, it will be \$75 a square foot, or whatever the numbers are; but he knows that, having built a lot of them. He has built up a mental data base. He knows what that costs. That is essentially what we are trying to do with models. In the Government we haven't used them enough, and the budget should be checked using these parametrics as a test of reasonableness.

Now if you want to get at what it really ought to cost, then you need to do the sort of thing we call the "should cost"; what should this really cost if we did it efficiently and in the right way, and the "not what it is most likely to cost," which is what a parametric estimate gives you based on our past history. There is nothing to say our history is going to change. With the advent of technology--take the VCRs, tape recorders, TV, or anything that you have around the house--we have a better product--longer lasting, better fidelity, lower costs--than it was 10 or 20 years ago. Look at what has happened to computers. Why doesn't that happen in defense? That is the question I raise.

One of the reasons is that we have self-fulfilling prophecies. In the first place, we don't contract efficiently. We budget on an annual basis. People think

funds control is cost control. If I hand out the money every quarter to you, then I'm going to control your cost. They don't understand the business at all. There are people in OSD to this day--an OSD comptroller that has been there 25 to 30 years--that is still doing that. In fact, they have grown up and gotten into the key jobs now, and they don't understand the difference between funds control and cost control. Therein lies the real problem. They just piecemeal the money out, so you can't even contract on an efficient basis with that kind of thought process at OSD. Congress won't let you because they are into one-year budgets; unless you go to multi-year contracts where you can do something efficiently or more economically, economical lot buys, it will continue as is.

A: If you say cost control, you truly have to understand the manufacturing process. Now you are in an area where you are beyond the guys pushing numbers around. You are in the area where you better be kind of an engineer or at least know where to go to get that kind of information.

D: Maybe they don't do that, but I used to force them to do it. I am an engineer by formal background, and I was a maintenance officer. I spent 4 years on the ramp in a fighter wing so I got my hands dirty a lot in trying to produce 1,000 hours of flying time a month. That was as close as we got to meeting the payroll. If you really want to manage something, you need to be able to make a payroll.

A: You have got to have a bottom line.

DRIESSNACK

D: Absolutely. Then you understand what it is all about. All of that has to come together; the scheduling, the spare parts that you have to have. You know that every day Operations is going to ask for flying hours, and you have got to produce them. The only way you can generate them is to run periodic inspections. Who is going to do that? Who is going to test them? You have weather factors to consider. You have the supply problems to consider. You have your own people to schedule. It is a real management chore, and I really learned a lot in those early years that has stuck with me; how to handle people, how to bring things together in diversified organizations because no one organization can do all of that. You have to work with people.

I think our people in the estimating business---- In the first place, engineers change things all the time. They are never satisfied with the first design so it was a constant change. The other thing is, the Air Staff doesn't understand the contract.

There are very few people on the Air Staff that have ever had a contract, so if they want to make a program change, or the programmers decide they want to level out a curved line; say, "We can't fund that so we will just straighten it out," they have changed the contract. They have no idea what they have wrought out in the field. It is just chaos because somebody wanted to straighten out a line; and they think they have done something good. They don't understand what is happening to the cost of the system on the other side.

If you understand the manufacturing process in the plant, you understand that you have to modernize the tooling. You need to get into the new processes of computer-aided design, computer-aided manufacturing, and integrated computer-aided manufacturing. All those things might cost you a few dollars up front, but they are going to bring your costs down significantly on the other end. There are some things that we are doing now, like in metallurgy; to give you an example, on the engine.

In a company that I know about and which I have done a lot of work with, Pratt & Whitney, in the hot section metallurgy they are way ahead of anybody in the world that I know of. The hot section is where the fire glows in the jet engine. They have gone into single crystal blades, as an example. Single crystal means that it has no stress points, essentially, no single weak spot. It is one solid crystal.

- A: Are you talking "crystal" in the fact that they actually grow something?
- D: Yes. In this case they use powder metallurgy. First, we went from machining, hogging out metal. It was formed, and then we machined that in very excruciating detail and got some very exotic blades. They were aerodynamically set up, so there was a lot of work done on that, but those things could break off because there were stress points in the metal. Maybe when it was formed, it would have some stress points. Then they got to a point where everything was solidified in one direction. They had single-direction stress so that it wouldn't break across; the weak points were all going one way. Now they have gone to single

DRIESSNACK

crystal, which means that is homogeneous throughout. There isn't any weak point in that blade. That blade is now warranted for something like 8 years in operation in the field.

You do that with powder metallurgy rapid solidification of the metal into a form, and you do it in an inert gas environment. It only takes microseconds to make a blade. It goes from a heated state through a form and then through a rapid solidification process and to a very, very cold state. The other thing that happens in that state is that you can combine metals that chemically we were never able to combine before. We are finding we are now able to do this.

Another thing is that we are making near net shape castings, to the final configuration. Instead of taking a large piece of metal and cutting a lot of chips where we might be at it for 8 or 10 hours or days cutting this down or cutting pieces and fabricating them, putting them together, now we do it in one piece. The midframe of the 2037 engine, as an example, is near net shape cast. A similar frame on, say, a TF-30 engine was done in maybe 20 or 30 pieces. Now that takes away people's machining time and all this fabrication they go through. The welding we had to do before is gone. Once you get the near net shape casting, you do a final machining operation, and that is it. From a durability standpoint, it is much better and costs a lot less, so prices ought to be coming down.

When Truman Spangrud was the comptroller, I talked with him about the ATF engine. He has a very good cost background, by the way. He worked as an analyst and has a very good

mechanical working knowledge of the analyst's job. He talked to me at a social function one time about his concern with the price of the ATF advance tac fighter.

He said, "In the POM they want to put a \$55 million airplane. We can't sell a \$55 million fighter to anybody; and why should we have to spend that amount of money?" I said, "I agree with you, but what are you using for your estimating relationships? What are your current models? Are you still using the same extrapolation of historical data?" He said, "Well, that is all we have." I said, "But, Truman, I have been saying for years that we need to take advantage of the technology, and you need to get out and look and see what the technology is. What have you got in there for the engine?"

He said, "The engine estimating relationship is 1.7 times the F-100 engine. This is the complexity factor that they have put in there. Obviously it is going to be more thrust and a lighter weight. The thrust to weight ratio is going to be better. The fuel specifics will be better so the operation will be cheaper eventually. They feel it is going to be 1.7 times?" I said, "You are wrong. Suppose I told you it was going to be about the same in base year dollars." He said, "I can't believe it." I said, "Let me prove it to you. I will get a design engineer, a manufacturing engineer, and a cost person and let them come over and brief you."

I sent those three people over. They came out of Pratt & Whitney. After a long start where Truman was his own expert--he kept trying to accelerate them along--and saying,



DRIESSNACK

"I understand that; yes, I understand learning curves, and on and on." They finally settled down into the technical part of the thing. He raised a lot of questions with them, but they convinced him that, in fact, that engine was going to be no more in base year dollars than the F-100 today.

- A: Isn't that what we just mentioned? You have people over here that simply are not conversant with the technology of how you make a new blade for a turbine.
- D: Yes. And we don't get out in the industry. I have always had a real interest in the factory floor because that is where the money is going to be made or spent. I have an interest that is greater than the Air Force. I have a national interest on what we are able to do on the factory floor.
- A: You are different than the average number cruncher in that you do have a background in engineering. If someone said a one-blade propeller is better than a three-bladed propeller, you could say, "Wait a minute. Engineering tells me that would be off center," or something. In your own mind a flag would go up, and you could recognize that. If a guy is an accountant by training or a CPA, and he is simply judging these figures based on what the Air Force has said and what the contractor has said, can he in fact challenge something?
- D: I was able to challenge in that my early background was in operations, and I have an engineering background. I was in maintenance, and then I went back and got an MBA in engineering management, part of a program that Schriever had put in. I went into the SPOs and program offices, and I

came through that, and then the Systems Command background. I was the comptroller in Systems Command, but I had already been in the project offices. I had an engineering responsibility in the project office, where I ran the program evaluation division in the C-141 which did all the integrated scheduling for the program.

In order to do that, I spent an awful lot of time on the floor at Lockheed, so I personally understood what was going on. You can't do that without picking up or learning something. I did the evaluations for a long period of time. I have been in and out of every major contractor facility in this country doing CSC evaluations, so I learned how their internal workings operate, how their management controls operate, and how they do their business. With that background, I came to the Air Staff.

When a program director comes through to tell me something, I have been there. When I was at ASD, we did a lot of things like the research studies on inflation factors. We did a lot of research studies and built cost models and things like that, so I have been there. They are not being done today. There is nobody driving that. There is nobody that has the interest. There has to be a broader interest in what you are doing than just your day-to-day job. You have to somehow leave a better place than when you were there. There should always be something you leave behind.

Nevertheless, Spangrud took that number. He recognized it as a valid argument. He went to see Tom Cooper, who was the Assistant Secretary for Acquisition at the time. He said they argued about the number that was in the POM. As a

DRIESSNACK

result of that, the ATF figure that got in the POM was \$35 million, not \$55 million.

A: Does General Spangrud have any kind of engineering background?

D: I don't really know. He has a business background, and he is intellectually bright.

A: When a SPO would be picked for a program when you were in Systems Command, was there an attempt to find the engineering/accountant, if there was such a guy?

D: I think they picked people, the SPOs that I am aware of, that had a technical background of some sort; maybe an engineering background. That is generally the way we pick people. Some of them had been operators. Jim Abrahamson [Lt Gen James A.] came into the Maverick program. He was an astronaut on the MOL [Manned Orbiting Laboratory] program. Jim Stewart was the head of that program. When he got to be the commander at Systems Command, he brought Abrahamson in. I really don't know what Jim's background is. I think he has an engineering background.

A: I notice his fourth star has been held up.

D: Pure politics. He came in and took over the Maverick program. He was an F-4 driver. Here was a case where he could actually fly the airplane and shoot the Maverick and was able to participate. Any time you are able to do that, I feel you have a leg up. You kind of get involved with the development and the tests or at least some phase of it.

A lot of people have asked me to go take a look or come with them to the plant; "How about taking a look at this guy?" I have done it for Skantze. I have done it for Tom McMullen [Lt Gen Thomas H.]; people that were contemporaries when I was out at ASD. I did Hughes for Abrahamson when he had the Maverick out there. When Jim went on to the F-16, he grew in the job. The Maverick turned out to be a fairly good program. It had a lot of production. When you start building hundreds and thousands, you can get some economical quantity. It got to be a pretty good program. Nick Chubb followed him into that program. He is now the commander at ESD in the Systems Command. Jim went on to the F-16, and it was during his era that we sold the F-16 to the European countries--Belgium, Holland, Norway, and Denmark; so he has a very good background in working with the foreign community. That is what makes him effective in SDI, especially when you want to go to foreign sources.

A: In letting the Dutch build an F-16, was there a technology transfer to them?

D: We worry about technology transfer, but to my mind it is a little bit of a fetish. There was a time when we built a weapon where somebody could reverse engineer it. You could go back and see how he did it and copy it. The incident I just gave you in powder metallurgy or isothermal forging, something that we do that is a patented process, would be very hard to reverse engineer. They could look at it and ooh and aah and say, "My god! Look at what is in this. How in the world do they ever do that?!!" They don't have the process.

DRIESSNACK

I have always felt that we could sell most anything to our Allies and friends, but don't necessarily give them the process. There are a lot of mundane things, thousands of components on an F-16, that they can make and that have been made for years. They are made in a normal fabricated way. If given the same machine tools that we have, there is no reason they can't make them. They have made airplanes over there. They make them today. They make engines in Fabrique Nationale, and they make component parts and assemble the F-100 engine over there. In fact, they make parts for the airplanes that we buy here. It was part of the offset agreement.

A: That reminds me. Years and years ago someone was going out to interview Harold Brown at Cal Tech. One of the questions was, "If we lose an F-111 in North Vietnam, have we now transferred a tremendous amount of knowledge to the Soviets about a weapon system?" He kind of said he didn't think so anymore; that there were just certain aspects of technology that everybody knew about; that there weren't that many secrets anymore.

A certain amount of what you just said is true; even though they have a weapon system, it doesn't mean they can make a large scale integrated circuit.

Although I have seen pictures in Aviation Week and Space Technology where supposedly the Russians have built circuit boards, even down to putting our manufacturer's logo on the board. They have reverse engineered this thing and didn't know whether they should leave it on there or not; so you would see Motorola or something on their circuit boards.

Someone once said the Russians use the best technology in the world.

D: We publish it, and it's free. They go to the Congressional hearings; they go to the technical symposium. They get the technical papers and all of that. We are the most open society in the world, and it is open for everybody, enemies as well as friends. I think we have a little bit of a fetish there, especially with our friends, on the technology. The thing we have to worry about is that our friends go and sell the technology someplace else. If they are doing that, I always feel they are way behind us. We are developing something now. Things change constantly. Every time I go back into the plants I find something new is going on. We are trying now to apply that to the next generation. They are always a generation behind us on something, and what is the worry except that we have paid for it and have developed it. They kind of get it gratis.

You could take a single circuit board and copy that, and you can reverse engineer. What I'm talking about is a 20-layer board with the copper sinks that go in between; or take a surface-mounted technology with leadless components. They can look at it and wonder how we did that; how did we make that chip? They can go around the world to try and find the chip. Where can they buy it? Probably buy it from Japan. I read somewhere in the last year or so that we own something like 92 percent of the patents in the electronics world. The Japanese manufacture 70 percent of the quantity. It is incredible.

DRIESSNACK

A: I find that absolutely amazing that our R&D can do that but our industry can't bring the cost down to build it.

D: We are doing it now. We are beginning to see it. I have just come back from a trip up to Hamilton Standard, and I'm seeing some things being done now that automatically sets components on a board in place. It does in a matter of minutes what used to take hours to do.

A: As things become less labor intensive, there is no reason our industry will not return itself. I was reading in Post about this GE plant where for every refrigerator they make today, it takes five people whereas 20 years ago it took 25 people.

D: The labor content is way down.

A: One of the cost control measures was target ceiling, target prices not to exceed cost; but this is simply a dollar thing.

D: Those are different types of contract arrangements so that we could cap a contract. When we made estimates, the contractor would give us estimates for budgetary purposes, and they were not to exceed figures so we would at least have some basis because we budgeted years in advance of when we could sign a contract.

A: At one time in defense industry, was there a buying in?

D: When you think about it a little bit, it is a very practical kind of approach. If you are in a business where you can

stand the cash flow problem, it would pay you to buy in in the R&D part in order to get a long production run because the production is where you make your money. You are not going to make your money in the R&D contract. It is inconceivable to take---- Let's take an F-15. If McDonnell develops the F-15 and tests it and then builds the first models, unless you are at war and have to make 50,000 a month like in World War II, and we farm it out to a series of factories, then he is going to make the manufactured model, and he can make his money in production.

A: That is kind of a historical myth, although the B-17 was built BVD--Boeing, Vega, Douglas; I think Vega only built 200 of them. Of course, that is a relatively unsophisticated piece of machinery. That was an old argument. I remember reading in Congress that there wasn't enough competition once the R&D was made; but like you say, how can you model build something?

D: We are now into second source. They have a leader follower and things like that. You generally don't do that on the big systems. You can't afford to. We just went through a discussion on the advanced technology bomber. Northrop is making that. It has been a black program for a long time. There is some discussion about competition. It would be ludicrous to compete that or to have another guy manufacture it. You would never recoup the investment. Competition is not going to do that for you. You can compete the sub-components, the subsystems, and the components; but once somebody has the technology of putting it together, then we ought to stick with that person.



never recoup the investment. Competition is not going to do that for you. You can compete the subcomponents, the subsystems, and the components; but once somebody has the technology of putting it together, then we ought to stick with that person.

I am a firm believer in competition, but I am not a believer in competition for competition's sake. I absolutely do not subscribe to the way the Congress and some of our competitive advocates currently practice this art. I will tell you why.

I have raised the question with a lot of these people, both Government and industry people. If you carry this to the "nth" degree; that is, where you are going out and compete whatever it is you are doing just to get the price down, you are going to end up with a bunch of manufacturers. They may be very good, and you are going to get the price down. Competition will drive it down, and eventually the weak ones will disappear from the scene.

Supposedly the economic model says that is the best for everybody concerned, so you end up with strong manufacturing folks and strong competitors, those that are able to sustain and build quality at a low cost; and we end up with this kind of society.

Now the Government says, "All right, I want to build the next advanced technology bomber, fighter, missile, whatever." You go out to these people and they say, "Wait. We don't engineer; we just build; we just manufacture." Who

are you going to go to? In order to carry design engineering, who does this metallurgy? How about these guys that developed and invented rapid solidification, isothermal forging?

(END SIDE 2, TAPE 11)

D: How much business do you have to have to carry enough overhead to permit you to have design engineers working on next generation components or systems? They can't tell me what that is. When I asked this of the competitive advocate in the Navy, Admiral Platt [John W.], who has gotten a lot of publicity in this competitive business said, "I don't know what it is, but I know we are not there yet." I said, "You know, that is just a copout on your part."

I asked him this question in public down at DSMC [Defense Systems Management Course] one day at a flag officers' course just 2 years ago. He said, "I don't know what it is." I said, "You really don't care." He said, "No, I don't." He has retired now, but his mark was competition for competition's sake. That is not the way to do it. We have to somehow get off this kick.

The other thing that happens is that the ma-and-pa shops can bid on components. You have bushel baskets full of contracts that were not consummated because people couldn't do it; they just flat couldn't do it! So now they are back to the prime contract and say, "God! We have got to have this!" Not only couldn't he do it, but we didn't know until delivery date that he couldn't deliver. He said, "I'm going to default. I can't deliver this part." Here you have lost

DRIESSNACK

the year or 6 months or 2 years, and now where are you? You don't have the spare parts.

A: Was it a problem in that they were forcing minority business contracts?

D: Anytime you force things like that, you have a problem. There are good minority contracts. There are good small-business people out there, but you can't get a quota; and the Government wants to set quotas. In a drive to get quotas, the procuring officer, who is a GS-12 or -13 or less or a young captain sitting out there says, "By god, I've got to get this quota." He doesn't have the engineering background; he doesn't have the experience or the know-it-all, so a guy gives him a legitimate bid. It is the lowest bid; other people evaluate it and say, "Yes, we think he can do it," and he doesn't do it. Then what happens?

We don't have a self-policing system except the depot who then goes back to the prime to try and bail him out. You must leave a certain amount of business with the prime so that he can, in fact, carry the overhead to correct problems that we know are going to occur. If you keep going to second sources with all this, that is okay to a certain extent, but you can't run that on every system that we have. It is just not going to work.

A: On a small basis, I find it this way when I try to get tape recorders for the program. I literally send pictures over of what I want because those people over in contract and procurement at Maxwell--not to denigrate little old ladies in tennis shoes--but I remember for years there was a woman

in charge of all the electronic purchases on Maxwell. She didn't know enough to put a plug into a socket in the wall.

We got some tape recorders one time that were like something I would buy for my kids to use, bang around, and then throw away that were worth \$19. I would say, "No, this isn't what I want." They would say, "Well, it meets all your specs." I said, "No, it only meets this part." "But it's cheaper." So now I send pictures over and put arrows on the things I want. I am only talking about a \$50 item, so this is scary.

D: That person has the same AFSC that the buyers on major systems have. It is the same background. If you are in the civil service, it is the same career field. It doesn't make any difference what kind of a buyer you are. The best story I can tell you is one about my daughter, who went to Penn State. She is a language major.

She had a roommate who was a chemistry major. The gal graduated and married another Penn State graduate, and they live in Philadelphia. My daughter went to visit her one weekend. She came back and I said, "What is Suzie doing?" "She is a buyer for the F-14; works in a Navy buying office up in Philadelphia." I said, "A buyer for the F-14? What does she know about that business?" "Well, she mostly sits and reads. She waits for the phone to ring and for somebody to call in and order something by nomenclature or by a number. She doesn't have to know a thing about it, but it pays pretty good." She is a college graduate so it doesn't make any difference whether she knows anything about the business or not. That is sort of where we are.

DRIESSNACK

A: I don't know if there is a solution to that. A classic example is in education. If I can speak French perfectly but don't have the 25 hours of education that are supposed to teach me how to teach it, then I can't teach it; that in effect I don't know how to speak French or teach it to somebody else. It is all essence and no form, as I once learned in philosophy class.

D: I'll tell you one thing. If you grew up in France in, say, a French farm community and you couldn't go to school for whatever reason, you would learn French, and it wouldn't be a teacher who taught you; so you don't have to be a teacher to teach somebody French.

A: There was a new directorate in Systems Command, DCS/P&M, Production and Manufacturing. This was under General Evans. What was this in response to, or what did he hope to accomplish with that?

D: That directorate was originally procurement. In General Evans' time period that got changed to procurement and manufacturing. I got moved over there.

A: It says here: "Would give high achievers maximum opportunities to advance." Was there part of that involved, too?

D: We wanted to emphasize the fact that there was more to procurement than signing contracts. Somewhere we wanted to emphasize the manufacturing part of it.

A: So this is what we were talking about.

D: Right. You need to get folks involved with the manufacturing, and we then started to put great emphasis on manufacturing, on technology modernization, management technology programs, and industrial modernization improvement programs. All of those things came into focus during that time.

A: McLucas selected General Dynamics as the contractor for the YF-16, and then it was built. Did you get into the source selection of that?

D: I was at Systems Command at the time. It was the lightweight fighter. When they did that, there was kind of a fly-off with McDonnell.

A: I'm thinking of the A-10.

D: The A-10 was a Northrop-Fairchild; the A-9 and the A-10. Both of those were ugly airplanes. I was on that board.

A: March AFB had the A-9 sitting out there. It looked like an old air defense interceptor fighter, the F-89.

D: Which was theirs.

A: So they took the F-89? (Laughter)

D: I don't know. The thing that got me about the two airplanes was that maintenance was supposed to have been done in the field, and it was supposed to operate on PSP [Pierced Steel Planking] up in the forward area.

## DRIESSNACK

The maintenance solution was to put the engines down low so you could just stand there and work on them. That was fine except it would have acted as a carpet sweeper for FOD coming down on a forward area where you can't clean the runways all the time. It was a weird airplane! When you look at an F-5 or an F-20 or some sleek things that they have done, I can't believe that was a Northrop design, but it was an F-89 mentality, which also was an ugly aerodynamic airplane.

The A-10, on the other hand, was this big hog that sat there with the engines way up so you had to lower them on an elevator for anybody to work on them; either that or have huge stands, which we couldn't bring to a forward area. In both cases, from an aerodynamics standpoint, I didn't think either of them was a very good airplane.

A: I get the impression the Air Force was given the A-10 once again, but they did not want the A-10; they saw no need for the A-10.

D: I'm not sure that was true. It was an era of kind of a heady atmosphere at ASD. If you were sitting out at ASD and we got the F-15, then all of a sudden the F-16 followed, and that was kind of a gift for us. It was a lightweight fighter fly-off. They were prototypes; the AMST, which the C-17 eventually evolved from; the A-9, A-10. We had all these prototypes going, and it quite an era. Packard believed in that, and we are back trying fly-before-buy, do some prototyping, and view the competition up front. There is a lot to be said for that if you adequately fund them and get a couple of good ideas.

We actually did that in the large missile business years ago. We had liquids and solids. We started out with liquids, which gives you more energy per pound than you can get out of solids. The Atlas was pure liquids, and then we had a combination with the early Titans of solid and liquid. Then we went to pure solids because we wanted to keep them in the hole for years, and you have that volatility in handling liquids, which is always a problem.

They were developing those prototypes at ASD, and all of a sudden the decision was made, and we had the F-16. We went with that and then followed with the A-10. The A-10 was a single-purpose airplane. There was a philosophy in the Air Force in those days. The air superiority fighter was the F-15. The air/ground airplane was going to be the A-10. The swing fighter was the F-16. In none of those cases except the F-16 did we follow a philosophy that normally was followed in the Air Force; that is, you build an airplane, and you utilize it to its maximum extent.

In the beginning we had F-84s as air-to-air airplanes in Korea, and then we took it air-to-ground. F-86s came in for air superiority, but we also took them air-to-ground. In World War II we took airplanes for both front line support whether it be strafe, bomb, or what have you; and they were originally air-superiority airplanes. We have always done that. To this day we have never exploited fully the air-to-ground capability of the F-15. It is a tremendous machine!

On the other hand, if the F-16 doesn't carry a radar missile, an all-weather missile, then it is not an



DRIESSNACK

air-to-air airplane. You can't fight in weather. It is a day fighter, essentially, and that is crazy. We are finally getting around to changing that, but we are waiting for the AMRAAM [Advanced Medium-Range Air-to-Air Missile] to put on there. It was wired for that. Of course that is way out in the future. It is finally going to come into being, and one of these years we will have it.

If you take something like an A-10 that is a single-purpose air-to-ground, then where are you going to use it? The only place it is stationed is in Europe. We just built too many of them. There is some number like 620. We wanted to stop at 600, and Joe Addabbo wouldn't let us stop. D'Mato [R, NY] was worse than Addabbo. He came out of Long Island also.

A: I think there are some A-10s in Alaska, for whatever reason; probably for permanent cold-weather training. Was there any problem with the difference in this F-16? How political do you think those decisions are? Obviously they are; you can't divorce that, either.

D: I have seen one political decision in all the years I was in that business. That was the TFX. I was not on that source selection, but of the ones I worked on--the C-141, the A-10, the lightweight fighters, all of those systems that came after that that I had at Wright Field--I can honestly say that the suggestions or the recommendations made by the evaluation working group to the evaluation board didn't get changed from the evaluation board on up to the source selection authority; that is the way it went.

There are a lot of people sitting on the outside that think it goes the other way. That is not true. Nothing that I was involved with worked that way. The only one was the TFX. I was out there at the time, but I was not involved with it; I was on the -141 program. When that other decision was made, I understand the board recommended a Boeing airplane, but DOD went with General Dynamics.

- A: I have a note here: Directorate of Production and Manufacturing established in DCS/Systems, and then DCS/Procurement and Production redesignated DCS/Procurement. Air Combat Fighter Division was established in Directorate of Aeronautical Systems in Systems Command. What fighter would they have been looking for in January 1975?
- D: They were probably looking for the beginning of the advanced tac fighter.
- A: Procurement took in production management, quality assurance, value engineering, labor relations, industrial facilities, industrial preparedness, and industrial materiel.
- D: Those were all things that were important to us. It depends on how you pushed them and who wanted to put the emphasis on them as to how well they did. I will tell you an interesting story of value engineering. I am a supporter of value engineering; always have been.

When I was the A/Vice and taking a council meeting one day, a program management review was coming through. It was the F-16, and General Monahan was the program manager. I said,

"George, how is your value engineering program?" He said, "We don't have one." I said, "Don't you have a contractual requirement to have one?" I remembered in a directive every program had to have a value engineering clause in it. He said, "No, I don't." I said, "There is a regulation that says you have to have one." He said, "As far as I know, we got a waiver or something."

George didn't start the F-16 program; he inherited the program. He said, "I didn't think anybody was interested in value engineering any more." I said, "Well, I am! How about next time you come through here--which was on a quarterly basis--tell me what you are doing on the program. If you are not doing anything, do something! I can't believe that we are down the road this number of years in the F-16; there ought to be all kinds of things out there that people know can be improved because we have all this experience under our belt."

That is when you really find them. Right in the beginning when you want to make some changes, you look pretty hard at things; and after you have gotten a number of years under your belt, it seems that we then can go back and say, "Had we done this over, we could have changed this," and so forth. We have a long way ahead of us because we have a lot of foreign military sales and still a lot in the US inventory, so there was a long way to go. There is a lot of money to be made if we have an effective program.

So George went back home, and the next year Monahan and the F-16 won the DOD award for value engineering. I forget how many hundreds of million dollars they came in with in

savings, but it was a very significant savings. This was a case of one man or one person's interest and saying, "I am interested. Why aren't you doing it?" Most of the guys sitting on the council didn't even know what value engineering was.

- A: This ties in with my next note. In October 1975 General Evans proposes to centralize procurement and production personnel in order to create "the corporate memory." What you just illustrated is the corporate memory. Is this a problem throughout any business; maybe worse in the Air Force because you do have a greater turnover of people?
- D: Corporate memory is very important, and we do have a problem. One thinks that the civilians are part of the corporate memory, but they get promoted and move, too. They don't stay there; they move on. In fact, you could promote the chief of the procurement council and move him on while you are still there, then the military provides the corporate memory. We do move people on; we promote people. We have an up-or-out kind of philosophy so you move the military on.

It depends on where you go. If you take the corporate memory from that level of command to the next level and to the next level, then it sort of stays with you; but if you get out of the business; I mean, if I went back into operations or something like that, and I wasn't in a position of asking questions or being involved with it, then that experience would not have come to any useful purpose.

DRIESSNACK

But industry has the same problem. Today I say to myself constantly, "My god! These people have been in this business 50 years, and they still don't understand how Government works!" Well, you go back, and they are completely new people. They are not the people that were there when I was in uniform and the people that I talked to back and forth on a day-to-day basis. Those people are now up in the corporate structure someplace. They have moved on; they have retired; they have gone to other industry. They have exactly the same problem that you have in Government.

A: When you look at a roster of Soviet Union hierarchy in the military, these guys all fought in World War II. Do you think the US is prematurely retiring their military, like yourself; or does the expertise remain in other ways? For instance, you still interact. Do we get rid of our leadership too quickly in the military?

D: It depends on where you sit and what stand you take, I guess.

A: Yes; if you are down here, you want the guys to leave.

D: I think getting new ideas and new blood is probably more beneficial than trying to retain that corporate memory for whatever reason. There is a certain lethargy that can creep in, too. Even though you have the expertise, you want to bring along the next generation that has even more.

My son came out of engineering school and is now an industrial engineer out at Wright-Patterson. He is a

captain in the Air Force. His background in computers is so much greater than anything that I ever put up with that there is no comparison. I'm constantly amazed at the way he comes into the office and sits down at his computer. The first thing he does in the morning is turn on that Zenith. He is so versed with that.

(BREAK)

A: This note says: "In 1975 Headquarters Air Force retained all the lower threshold of \$1.99 million reprogram authority transfer of funds between program elements. Authority granted by Congress. All RDT&E unfunded requirements, regardless of amount, dealt with at Headquarters Air Force in general officer level. DCS/R&D in the Air Force budget office and AFSC had to get involved; too much staff coordination; and Systems Command loses some management flexibility. The changes were outlined by General Slay [Gen Alton D.] as DCS/R&D in the Air Force." In this time period were there problems between budget and DCS/R&D and Systems Command as to how you could transfer money between programs, or was that just normal day-to-day business?

D: We have authority within the Congress to transfer money under \$2 million in the R&D programs. You can transfer \$4.99 million for the procurement accounts without going back to the Congress. In other words, it is called a notification reprogramming. If it is above that, then you have to go forward with a formal reprogramming, and you go back to the Congress and say, as an example, "I want to take \$10 million from the F-16 and transfer it to the F-15." You have to go through the four committees and get a sign-off on

DRIESSNACK

that because you are using money in a different way than was authorized and appropriated. Below that dollar level they give you the flexibility.

Now in just the past few years those numbers have gone up. I think they have doubled. That flexibility was very important to us in the field, if you were operating in the field, to be able to take that money and move it around. I did that constantly when I was the comptroller at ASD. We never had enough travel money and we were all supposed to travel on one travel account, but SPOs can travel on their own money. We just transferred their money to the travel account, and then they traveled on the account. We couldn't get facilities money to upgrade the SPO's quarters, so we transferred money out of the SPO line into the facilities account and then went on contract, and we redid their offices. It is that sort of flexibility we needed. Usually they are small amounts of money, but the amount of money that you had to have was very important. Somebody took that away from us.

During that era, the Air Staff decided Systems Command couldn't do that. There was going to be a sign-off on the Air Staff controlling that. That is micromanagement. It is funny, though; when Slay got to be the commander of Systems Command, then he wanted maximum flexibility at Systems Command.

A: Amazing how that works. There was a letter to General Jones from General Evans in October 1975 where he was complaining to General Jones. He says, "There was a failure to consistently apply good business practices in the

acquisition of major weapon systems. Our life-long emphasis on performance, and in recent years technology, has relegated other considerations to a secondary role." Was this just a traditional thing?

D: Evans came out of the Air Staff. He was in R&D, and he came over to AFSC, and now he has a different set of problems; a different view of the world. He was finding out that you don't write a very sensible contract when somebody says, "Hey, this is all the money you have." You say, "Wait a minute. That doesn't give us anything. We have to make provisions for the tooling so we can get to the point of production. We have to have some advance-buy considerations given to us, and we need a certain amount of flexibility to be able to effect some changes as we go on with the testing and so forth."

We talked way back even then about multi-year contracts and things like that. It was those sorts of things that he got exposed to more and more.

One of the concerns I had then and have today is who gets promoted in Systems Command. The SPO directors are the crown princes. They are the ones that get promoted, so what happens to your key people? They all want to be a system program manager. They want to have the program manager AFSC. They don't want to be the engineer or the procurement guy or somebody else. I see this in my young son.

As lieutenants these kids were talking about it. I never worried about it when I was a lieutenant. I was flying then and liked what I was doing. Somebody told me they assigned



DRIESSNACK

me because I had an engineering degree. I was going to be the maintenance officer. I didn't volunteer for that or worry about how it was going to effect my career. These kids today are very concerned about their careers, and they have learned early in their life that the system program director is the way to stars if you want to be in Systems Command or in this R&D business.

My son has a weak eye. He wears glasses, and it is not correctable, so he is never going to fly. He is going to be a nonrated officer, but he is an engineer. As an engineer he is in the right command. You can only go in two commands as an engineer. He is really studying this whole structure of who gets promoted.

The same thing happens in industry. People look to where the power is, and they try to migrate to where that is. Well, what happens to the business side? Has the Air Force ever not accomplished an operational mission? Never! Never in our history. We can do anything that anybody ever dreamed up because we have that kind of an attitude, and by god, we will get it done! I have never been in an operating command where we failed.

(END SIDE 1, TAPE 12)

D: I had a squadron of SAC fighters in Alaska, and we had 25 airplanes. We housed them all in a big B-36 heated hangar. The whole squadron went in there, and we took half a hangar. The rest was cold-weather test people. The -104 and the -130 were in there at that time, new airplanes; and they are history today. I had an outfit of F-84s. We flew off of

117 inches of snow on the ground and 7 inches of packed snow on the runway and taxiways. We ran periodics overnight. Periodic inspections took 3 days of three 8-hour shifts. We ran one 24-hour shift; ran them overnight in that hangar. We just brought the guys on and kept them working. We essentially had two shifts that worked 12 hours a piece. They worked through and did them, and they turned out to be just fine. I couldn't do that when I came back home. It would have raised havoc with the system, but I had complete control of them up there and did it.

Just by way of explaining, we do every kind of operational mission you can think of in the Air Force. Where we get in trouble is in contracting and estimating. Historically, we have been poor estimators; we underestimate. We have not written very innovative contracts. It is the same old mundane cost plus a percentage of cost. We call them different things, but it ends up as cost plus a percentage of cost, and there are no incentives for the contractor to lower the cost. The business system is such that the people who are in it at the OSD level are controlled by budget people. They don't even understand cost estimates or cost control or performance measurement, so you have a real problem in that kind of system.

What Evans was trying to do there was to pay some attention to the business side of the house. He looked at the career fields of where these people were from. How do we get people in these career fields? How do we keep people in the career fields? Who gets promoted?

DRIESSNACK

When Larry Skantze came in as the commander of Systems Command, he didn't even have a general officer in procurement. This business is bigger than anything in the Fortune 500. He had a colonel running the business side. Do you think a vice president in finance in a major Fortune 500 is the equivalent of a colonel? No way! On the other hand, all the guys in Personnel are generals. What the hell we need generals in Personnel for is beyond me. They are supposed to service that group, but there are more generals in Personnel than we will ever have in the business side, and the business side is where we need the emphasis. That is just the way it is set up.

A: Was he able to get anything changed?

D: He had to promote a colonel to general in Procurement. He had to promote a colonel to general in Comptroller. We didn't even have candidates standing around. That is the way the promotion system has now been set up. You have to sort of earn your way; functionally we don't promote those people any more. It doesn't make any sense because they can't compete with the wing commander. It is impossible! He can't run a wing; why should he compete with them? We don't expect doctors or nurses to compete; we don't expect lawyers to compete. They have their own promotion system. If you take the business side of the house, then the comptroller is also that sort of functionally different person. Look at what he does.

The Pentagon revolves around the PPBS system. The guy that runs that is the Comptroller, the Director of Budget. He does it even for the program phase. He costs out all the

systems, and I think it is that kind of thing that we need to pay more attention to. We do not pay attention to it. That was Evans' attempt, and I think a lot of people have tried it since then. The 4 years that General Marsh was at Systems Command he never promoted one person in the business community. Skantze in his whole tour promoted two, and he had to have them for his own.

I said to him, "Who are the replacements? Who replaces those guys?" He didn't even have colonels standing in the wing. They have ignored that. They say, "Well, it is a matter of priorities." I say, "What greater priority do you have? All the times we have testified on the Hill because of overruns that we had. Our bad publicity was because of overruns. It is because of the poor contracts, the loopholes, the golden handshakes; all of that stuff that we get criticized for. Who do you put in charge? What kinds of people do you have coming along? Who are the general officers? The colonels that stayed around." If somebody gets very competent and is very good at it, he leaves because industry is looking for these same kind of people.

You take somebody out of operations and put him in there, and he doesn't have the background so he can't raise the questions on the Hill about the nuances of the Congress and the laws and things like that. He hasn't been in the business; doesn't understand what has happened. We should do something better with our career planning than just be fortuitous occasionally in having the right guy come along and get into the chair. That doesn't make any sense.

DRIESSNACK

A: Was there a problem in the middle 1970s of industry becoming obsolescent in a lot of their facilities, machine tools, and things like that?

D: It depends on who they were. I think we saw in the F-16 a great modernization in industrial facilities. At Fort Worth, certainly at McDonnell-Douglas, they went out and had a tremendous investment for the F-15. It was a completely different machine than the F-4 that they built. We saw Boeing on the commercial side. They lost what became the C-5 contract, but they made a conscious decision to build the big airplane. In fact, Boeing wanted to build the big airplane when we built the -141. They had an alternate proposal on that which was a wide body. They said eventually this was what we would need. Sure enough, that's what we went with. The working group didn't accept it at ASD for whatever reason, but it was an alternate proposal. Their investigations revealed that we needed a wide-body airplane, which would be a much better cargo airplane. Years later we did build the C-5.

Well, they went with the 747, which was the wide body, but they completely upgraded their tooling, a very modern facility. On the other hand, we had business as usual at Lockheed. It was the -141 blown up. It turned out they couldn't do it that way. It certainly was not the -141. They had technical problems with manufacturing that they and the Air Force had not anticipated.

A: Were they using a chemical shaping?

D: We use that today. You can get precision shaping if you want to take a thousandth off here or there.

A: Was that new in those days?

D: No. We had used that before. One of the big problems, by way of example, was that when we put the aft body on--the midbody of the C-5, it didn't fit quite right. They had to put a belly band around it to put the fasteners in. When the midbody of the 747 went together with the aft section, I happened to be there, and it went together like a hand in a glove--just so smooth.

The difference was in the tooling. It was all modern, up-to-date, automated tooling that Boeing invested in, and it was a work of art. The C-5 was the normal tooling, just great big tooling. It was a lot of trial and error as we went through that. There were two or three major titanium fasteners on the -141. The C-5 had a whole series of titanium fasteners. I think the standard hour content was something like 15 minutes. It was supposed to take somebody 15 minutes to drill, ream, shape that hole, and drop the fastener. In fact, it took them an hour and 15 minutes. Now you can't miss it by that amount and expect not to have an overrun. That is just one operation.

I went down to Georgia, got up on that wing, and looked at that. I was in the Air Staff at the time. I said, "What has caused this problem? Why have we gotten to this point?" That is by way of paying attention to the business side and looking at manufacturing and looking at the way we contract. What incentives do we give these people? If they are going

to save money, it should result in lower costs to the Government down stream, and we should be able to reap those benefits rather than just higher profits for them.

If they are going to get a cost plus a percentage of cost-- call it whatever you want to; call it a fixed-price contract if you want to--it is always a percentage of whatever the fixed price is. You have the target plus incentive fee. It is all based on what the target is. The higher the target, the percentage fee is obviously going to be a higher ultimate number. If you provide an incentive whereby he can come in lower, you give him higher profit, and he will accept that.

We don't have that kind of mentality. "What?!! Give them 20 percent profit!" If it results in lower cost to the Government, then we shouldn't care. You can't be obscene, but what is wrong with profit? The country was built on profit. This is the whole story of capitalism, because what do they do with profit? They take it and reinvest it in R&D. They take it and reinvest it in the future.

- A: Where would the fight against that come from; within the command or from Congress?
- D: Both. Congress is never going to let you get by with that, and there are certain fees that are acceptable within defense. There are still a lot of people within defense that say, "Look, there is no risk." It is not like the guy putting his money on the line and taking a risk, and then he deserves the profit; like in IBM, Ford Motor Company, General Motors, or whoever. You put your R&D money up, you

make the investment, you build the product, and it is whatever the traffic will bear. The market place will dictate what you are going to make. You see people make tremendous profits in the beginning because there is a pent up demand. After a while as it gets older, then the price comes down, and the profit disappears or gets lower. You don't make as much profit. We just don't allow that in defense.

- A: How would the contractors approach Congress on this kind of thing? Would they encourage Congress to look deeper into this kind of thing, or were they status quo; don't rock the boat?
- D: How can a contractor go to Congress and say, "We need more profit"? They are already considered the robber barons of industry. They can't do that. They are feathering their own nests.
- A: Could they say, "Not only would I get higher profits, but Air Force could buy it at a lower cost"? The minute you said "higher profit," that invalidated all other----
- D: Right. We need to "incentivise" the contracts in a way that you can reduce the cost of the contract; like a value engineering clause: He shares in the profit. You split those profits, so you are making a big profit on that particular piece. That is a return on sales, a return on investment. All those statistics are very important to industry, to the shareholders, to the market, and all the things that permit them to go out and borrow money or sell stock. You have to have those; you have to work those



DRIESSNACK

technical parts of finance. We don't care about that in Government. In fact, we don't understand it; don't teach it any place.

A: What about these guys you see coming over to the DOD office and the Office of the Secretary of the Air Force?

Supposedly they have been in industry someplace along the line. Packard is a classic example. Of course he is one that has tried to make some innovations.

D: Packard was unique. Not only was he a good businessman, but he was a good manager, a good leader, and a quick study. He learned his business very quickly. I briefed Packard twice as part of the Joint Logistic Commanders. In fact, it was on CSCSC. He accepted the approach. That is why it went to where it did at DOD. He said, "It seems like you guys know what you are doing. Just press on and come back and tell me when you get it implemented." We went back again in 6 months and told him what we had done, and that the three services had done it jointly, and he was very happy with that. He gave us an incentive to succeed.

In this case OSD adopted it instead of directing it. They adopted what we had done in the services, and they picked it up then. It was the services' operational implementation, and we drove that. I happened to have chaired that part of the JLC panel. I was in charge of the CSC panel. Packard has had his own experience as a businessman, and he has had his own experience in R&D. Hewlett-Packard is an R&D company. They treat their people very well. He has been through all that sort of stuff. He knows what it takes to be successful.

A: Did we talk about this integrated computer-aided manufacturing? In 1976 you became the DOD executive manager for the Systems Command, DOD Executive Manager for Manufacturing Technology.

D: We champion things like this periodically. Recently people have been into very high-speed integrated circuits [VHSIC], and components. It is something that Systems Command has pushed and the Government has funded. It is a technology that would be used throughout the industry. When ICAM came in, we were looking at eventually paperless factories. We are not there yet. What we would like to do is to take the manufacturing engineer, design the tooling on the computer, and then take the part that has to be machined or whatever on the floor, and run the simulation of that.

You could see whether in fact putting the tool in at this angle or that angle would give you the proper clearance or the proper cut. You could iterate that on the computer through simulation before you ever got anything on the floor. If you want to make a change in the process, the dimensions, or what have you, you send the instructions out on the computer. It becomes part of the software as opposed to being a process sheet that the operator has to read to set up his machine and so forth.

There are some people that have gone very far in that. At the time McDonnell was doing some very good stuff on the F-15 on integrated computer-aided manufacturing. It was by way of getting the cost down and getting the quality up. We want to enhance the quality and bring down the cost.

Somebody always has to take something like that and spearhead it or champion it. Otherwise, it doesn't get done. The industry may do it on their own, but it takes an awful long time. If the Government puts money behind it and puts out some seed money, then the industry boards say, "Okay, if that is where the future or the direction is, we will add to that." That is the purpose behind the technology modernization [tech mod]. We put out \$500,000 here or a million here or \$5 million there; and then the industry will double, triple, quadruple those investments. That is how you make advances.

Not only is it good for defense, but it is good for the total industry. If you get total industry involved, you eventually get the machine tool industry involved, and you get the total cost coming down. That is what keeps us competitive. If we want to be competitive around the world, that is what we really need to do.

Governments do that overseas. They fund or they own the companies, and they make the investments. We don't do that here. We provide some of the seed money. Just as in the tech mod and man tech and the industrial modernization and improvement programs, the Air Force has always spearheaded those, always put up the most money. The Army and Navy had money, but during this era we just went through, they decided to eliminate theirs, now they don't have anything in it. This past year there was nothing in those programs for the Army and Navy.

One thing that is happening since the President has come out with this policy on competitiveness is that they are trying

to figure out how industry gets competitive; and one of the ways we do it is that Government has got to put seed money in someplace. The quickest response you can get and the most accessible is defense, so you will see this get exercised again.

A: Was the AWACS a very controversial program?

D: I think the AWACS was. We had a hard time selling the AWACS. I give Davey Jones some credit here when he was the Chief. We had a hard time selling it in this country, and then we built the AWACS at three a month down to two a month down to three a quarter; we sort of bought them on a quarterly basis; a very expensive airplane--over \$100 million per copy. Congress just couldn't see why we needed this. They were bought really for this country's air defense. We have airborne radar with much further projections. We can see things farther than we could with anything on the ground. It turns out in operational reality---- The Europeans looked at it and tried to build something of their own over there; the British did.

A: Which they just recently dropped.

D: It is very expensive to do, and they don't have the facilities or the resources that we have to put into those things. We went to Europe to try and sell this for the NATO environment. The Germans were in here at one time, and the Air Force set up a "bread" board, a brass-board type of operation in General Jones' office. They brought it in and had a demonstration model which essentially was a link from the AWACS down to the Chief's office. You could read the

DRIESSNACK

radar right there. The airplane was flying halfway between Washington and New York. You could see all of New York, all of Washington traffic, Baltimore, and everything in between. This was General Jones' idea.

It so impressed the Germans with what could really be seen. With not too many of these over Germany, they could see the whole air battle. You could really look out. That really sold the Germans, so the Germans became involved with it. It is part of the NATO inventory now. We had a NATO office, and the Germans put up the money and provided the program director, and the deputy was ours. Interestingly enough, they had a German as the general officer in charge. He got paid at a NATO rate, which was higher than the German rate and something like twice what our deputy colonel was getting. Our colonel was paid US rate.

I remember going over to the office in Belgium and going through that. The first one went to Germany. They have a NATO base in Northern Germany built just across the Holland border. I was over when they were getting ready to bring them in. Look what has happened with the AWACS. Every time there is a crisis, we no longer send Marines; we send AWACS.

A: It is a battlefield controller.

D: And just the comfort of knowing that---- We sent them to Saudi Arabia when the Iraqi-Iran War started. We could look out and see what was going on. With any crisis in Europe we sent an AWACS; the Polish thing, movement of the Russian troops, or what have you. It sits there and gives us the intelligence we need to know what is going on. It takes the

guesswork out of the intelligence process. Not only that, but it's big brother up there watching.

If anyone starts anything, we are immediately responsive. It has taken the place of the Marines, essentially. International crises all of a sudden have put the AWACS in good stead. I can tell you in the beginning it was a hard sell. Larry Skantze was on this program. He fought vigorously for that program on the Hill.

A: Once again, look at the Russian version of the AWACS. The physical version----

D: Absolutely. They can buy the Revell kit.

A: I was tempted to bring the Revell and the Monogram F-19 fighters and set them in front of you and have you point. I won't do that to you because they have the Stealth fighter. Monogram has one out, and I think the other one is Revell. They are different in their configuration. Remember that with the Polaris submarine years ago? Somebody came out with a Polaris model, and it was right off the blueprints.

D: And they had the cutaway.

A: Yes; you could take the side off the thing, and it had the whole configuration inside.

D: Well, the IL-76 "Candid" is exactly the same as the -141; same model, wing sweep, the whole thing.

DRIESSNACK

A: Look at their supersonic transport, which they could not make fly, by the way. It is an exact copy of the Concorde; the droopy nose on landing and everything. I remember seeing films of theirs at the Paris Air Show. They were demonstrating, and all of a sudden the thing took a dive and fell apart.

Was there much emphasis, or was anybody interested, in building fighters with the Europeans like the Europeans have tried to do with themselves, like the advance manned tactical fighter? We have not gone to Germany or England and said, "Let's do this together"?

D: No.

A: Will there be a time when these things get so expensive that this will be?

D: It might. I think the Europeans are finding that to be so. When they built the Tornado, as an example, it turned out they built it together, even the SST. They built the Concorde, and it took two governments over there to do that. We were going to have that done here by private industry. That hasn't gone anywhere. It really hasn't taken hold because economics get into all of that. Saving time is one thing, but the economics will eventually determine what air fares will be or whether people will utilize them or whether it will be just for a select few people or whether the masses will take it like they do with airplanes today.

As far as the military things, I think the concepts, ideas, and leadership we have taken on as a result of World War II

has sustained itself. The French have gone on and designed airplanes and sold them internationally, but they are very poor; and the French Government has been behind all that. They had to have a government behind the industry to do that. They own the industry. They are very poor logistically. If you talk to the people that have the French Mirage airplanes, their spare part support is like the Renault demonstration you gave me earlier. It is just as bad. It is not like our logistic system. That is what the foreigners tell me, and that is one of the things I like about the US product. We do support them. Given the choice, they would much rather come to us because we do have the support. When we upgrade, we provide the upgrades.

A: South Africa can't buy anything any more, but they built a fighter that appears to have taken one of the Mirages and re-engined and reboxed the whole thing.

As an aside, what did the Israelis think they were going to be doing with this Lavi fighter?

D: Building an industry for sale.

A: They thought they were going to be selling these things around the world?

D: Right. They can't survive on what they need; and you can't sell to yourself very long. The biggest market in the world is right here in the US.

A: Did they think they were going to sell this in the NATO countries, or was it going to be Peru and places like that?



DRIESSNACK

D: Well, they could sell it to the Third World; but they are interested in sustaining an industry. Look at the fuss that has been raised as a result of it going down.

A: We were in effect building that thing for them.

D: It is the only country in the world where Congress has given them a waiver to take FMS money that we give and not buy things here but to spend in their own country. Nobody else has that option.

A: That is based on the historic ties between us.

D: And a very strong Jewish lobby.

A: Whatever happened to the C-133 aircraft? That thing had a very short and unimpressive life.

D: The C-133 was a large airplane, much larger than the -141.

A: Was it that big?

D: It was a much bigger body, but it was a turboprop. This country has never advanced turboprops very much. We went right to jets. We never stopped at the turboprop except for small airplanes. We make some very efficient small turboprops, but we do not make a large turboprop.

A: Are we going back to that now?

D: That is an unducted fan, but it is the same approach; sort of an in-between concept. It is much more efficient. The

-133 had four engines, and it was essentially a J-57 engine that was given a gear box and made into a turboprop, so we didn't have the horsepower that we needed nor did it have basically the thrust to carry that big load. It lifted huge amounts: 81,000 pounds. We traveled with that.

It pioneered a lot of things--that cargo handling system where we had rollers on the floor of the beds, and two guys could push the entire 80,000 pounds of cargo right off the back. That was all done and incorporated in the -141 plan and the C-5. That cargo handling system was pioneered on the -133 program. There were 35 A's and 15 B's built, and that was all. They were built like one a month; very inefficient. It was a Douglas airplane.

A: It is like a "never was" airplane; kind of there and then gone; and the B-58 was that way.

D: A beautiful looking airplane, but the B-58 was going to do a lot of things, including air defense; but it was too big for air defense. We didn't need that kind of thing.

(END SIDE 2, TAPE 12)

A: In this Air Force Comptroller magazine, this chart has a schedule of how the budget is prepared, the time frames; and then the little flow chart. That was the wiring diagram of the office when you became Comptroller. I have a note here: "The Comptroller of the Air Force has a problem of getting people to review cost analysis." That was a problem throughout the Air Force, not just in Systems Command.

DRIESSNACK

Everybody simply did not understand what things really cost, apparently.

D: There is now a movement whereby they are going to have a Cost Analysis Research Center; where they are actually going to build cost models and review all that database. That has just been organized within the Air Staff. I think it is located within Rosslyn [VA]. After all these years we finally came to the conclusion that something needs to be done in that area.

A: In the budget and comptroller office, outside of your office you had no authority to spend or allocate. It was just a matter of people giving you your inputs and your making these agree with the Air Staff?

D: It is a very formalized planning, programming, and budgeting process that you go through. The Air Staff meets, the boards meet, the Air Staff Board, and then finally the council. You agree on what the program is going to be and what the budget is going to be. That is what goes to the Hill. It is the Comptroller's responsibility to package that and write the justification for it and coordinate it across the Air Force. That is what goes to the Hill as the President's budget, and that is what everybody defends on the Hill.

Whatever Congress authorizes and appropriates money for, that is the only authority you have to spend. You have some flexibility within that on programming dollars within that, and there is some flexibility to go back over. There are some programs where you have a single program element, and

there may be hundreds of millions of dollars in that element. Within the tasks in that line, you have some flexibility.

A: What was your relationship in the days of budget and comptroller between the GAO? What was your interaction with those people? Did they ever come in and check your figures? Was that part of their responsibility?

D: No, they never did. They never got into that. Mostly they checked on the contract audit side; not necessarily in the internal budgeting and things that we do to build a budget.

A: You had mentioned earlier in your days in Systems Command about how you saw inflation coming down the road. By the time you were in the budget office/comptroller's office, it was really a screaming problem. Did this wreck your estimates and ability to come up with a budget and control it?

D: Of course the budget is made a couple of years in advance. We go in with the budget, and we have inflation factors that are applied. OMB finally dictated what those factors were, and they got more realistic after a while, and we used their factors. The argument was that the Administration was not going to let inflation run rampant but was going to put a damper on it or control it.

When projecting the budget, you are saying the inflation factors always come down. No matter who the Administration is, they are going "to come down." The way you compensate for that is to go to the Hill with a supplemental. We

DRIESSNACK

called it The Inflation Supplemental to try and compensate for the increase. For instance, we may not plan a pay raise because it is triggered by the cost-of-living index. It is indexed, and we may not have money in the budget based on what we are really going to have. We may have a 2 percent pay raise or something. The index turns out to be 6, then you ask Congress for the supplemental to provide that. More chances than not, Congress won't give you the money. They will say, "Reprogram it from other sources." They are off the hook because they don't tell you which other sources, so you give them the candidates. That means you don't do something you originally planned to do. That is what happens to you.

A: On these supplemental requests, in a practical sense it was really a case of them sending you back to spend what you have.

D: That is right. We had the problem overseas a lot because as inflation took over in Europe and the Far East--Korea, Okinawa, Japan, Philippines--we were budgeting with American dollars, and the exchange rate plus foreign inflation get to you. We pay people that work for us on those bases in their coinage. They are indigenous people; we have country-to-country agreements that say who we can hire, how many of them, how many of our own folks; and we pay those folks in their currency. When that happens and their inflation rate is different than ours, we have a problem. When the exchange rate changes, you have a different problem.

We had a bonus when the dollar was strong, but now the dollar is weak, and we are paying those people in their

coinage. That is tough on the people that are working those budgets because those payrolls are tremendous.

A: Yes; figure a place like Clark [AFB Philippines].

D: Or even in Germany; figure all the folks we have working in Germany.

A: Was there a problem of promotions for blue-suiters in the comptroller field; or was this similar to what you were talking about in Systems Command?

D: Every wing commander has a comptroller, accounting and finance, a budget office--people working for him. If they are good people and are doing their job, I feel they will get recognized. When I was the Comptroller, I tried to get wing commanders to make an effort. When I went to a base, I went to see the wing commander, and I always took the [base] comptroller with me. I talked about the things they ought to be working on: trade-off studies, a better way to operate, a better way to do the supply thing. They are always short of money for doing something. I said, "Whatever money you save in operations, you can have, and you can do those things."

I would go to the flight line and talk to crew chiefs, flight chiefs. We would talk about an airplane taxiing in with four engines running. Commercially they don't do that, and the reason they don't is because there is an incentive for them--each airline captain--to save money. I said, "Now why don't we taxi in with two engines? Shut down two. A crew chief out there running up an airplane on a check; he

DRIESSNACK

sits there and lets it run because he likes it. Do you know how much money you could save by shutting those engines off? It will buy you a color TV for the day room." When you put it in their terms, then they recognize that it is real money. He said, "Is that right?" I said, "That's right. That's what it costs. If you save it, you can keep it here." I had those kinds of deals going with folks, and we made a lot of them come true.

A: I don't know who said this: "The public's money is so easy to spend; it does not seem to belong to anyone."

D: That is exactly right. It is like your income tax. It is "they"; it is somebody else. You don't realize that we are the Government; we are it. When you cheat the Government, you cheat yourself. People find it very easy to slip things on their income tax; forget to write something down or report something or embellish it--round the numbers up when you have deductions of one thing or another. It is the Government, whoever that is, that amorphous mass out there. You do the same thing when it's the Government, it's the Air Force, it's Defense or somebody. You don't treat it like it's your own. We have a tendency to overspend. It is human nature.

A: In the middle 1970s they had this OER system and the Air Force's controlled promotion plan. Did that cause a lot of heartburn for a man like yourself?

D: The 1, 2, 3 system; terrible; worst thing that ever happened.

A: How did that ever come about? Did you know who started that?

D: I don't know who started that. It was during Davey Jones' era. The first official action that affected the entire Air Force that Lew Allen took when he became the Chief was to change that system. He had a lot of pressure coming in from the field. I will tell you where it came to light with me.

At General Brown's retirement, they had a fly-by at Andrews. I was standing on the ramp, and we were watching the Thunderbirds come by--four guys in flight. The fellow next to me said, "Just think, two of those guys are '2s,' and one of them is a '3.' They are the cream of the crop." In order to make it work properly, Davey Jones rated his outer office, his staff, that way: 1, 2, 3. Some guys did not get promoted. You handpick people to come to the Pentagon or to come to the headquarters, and then to put them in the same category with some supply officer out at "East Cupcake Air Base" is ridiculous.

A: You have told them, "The reason I want you up here is because you are so good." They found that out in SOS down at Maxwell. "You have got to come down here to the faculty because you are the best; we want the best on our faculty." When it came promotion time, everybody got chopped off at the knee. So much for all that logic and reason.

D: Well, we don't know how to write OERs very well. If you sit on a promotion board a few times, you begin to see what people are saying; and then you reflect on the way you wrote your OERs, what it takes, and what is required. I used to



try and get my people to sit on boards; "Volunteer for them," I would say. You get an education you can't get anywhere else. When you write OERs, you need to write them in a way that reflects either the true situation or something realistic. I always tried to write them that way.

A: Is that the promotion breaker; you disregarded the numbers and read the narrative part?

D: You have to read the narrative. You don't have much time to read them, but you read the narrative because the narrative tells you lots of things. People put a message in the narrative; good or bad, you will get a message.

A: The one I always liked: "I would follow this man anywhere out of sheer curiosity." Did you ever find comments like that--damned by faint praise?

D: You see some. I remember one that said, "This man definitely should be promoted to general officer but not this year." You just set that aside. He may not be the author next year, so the guy may never make it, but he can flat tell him that he recommended him for promotion.

A: You hear much complaint about all of these square fillings; got to go to SOS or take SOS by correspondence; got to have my master's degree; and you see this whole ticket-punching routine. Is it justified, or did it become a ticket-punching routine at some point in time?

D: I don't think it is justified. People certainly shouldn't work that. It never bothered me; you went to school. If

you got selected for school, you got selected for a reason. They went through all the records, and they selected people to go to school. If you get selected, you should go. I have always told people to never bypass a school because a selection process picked you out. When you look at the selection folders for promotion and somebody went to school, or he has already been selected, I think that is one thing in his favor that you can add to the other pluses that he might have.

When I was a captain, I had a master's degree. LeMay was the Chief, I think, and additional advanced education got to be a big thing in the Air Force. People were scurrying around like crazy, and they put the graduate programs into Command and Staff, War College, Navy War College, the Army War College; and they all had that. I signed up for the one at Command and Staff when I was down there. It was terrible; absolute disaster. I went to one course on statistics.

In the first place, they used a "terrible" book. It was an old book, and I had the same book when I went through my MBA program years before. It was acknowledged to be a very poor book. The instructor came out of the computer center at Maxwell who had some knowledge of statistics but certainly was not a teacher. The people in my group that were in the course used to come back from the class, and I would go over the problems with them because I had been through the problems. I went through and took the midterm, and then I decided it was ridiculous to go through this stuff.

DRIESSNACK

I talked to the academic dean, who was a civilian, and complained about the course. It came down from George Washington [University] or someplace, but they eventually changed that and Auburn [University] got it. You can't do this; you can't have this long distance education because they don't even bring in their own instructors. They hire them locally, and that has nothing to do with George Washington University. There is no control over the quality of the thing. They think any person can teach statistics. If you are teaching at the graduate level, you have a right to expect something more, so I never gave much for those degrees.

A: It is interesting that in the middle 1970s word came down from AU that "You are here to go to War College and ACSC, and we don't want you running off and getting your master's degree. That is not why you are down here." Of course now the world has turned, and by War College time most guys have their master's.

D: It runs in cycles. My son goes to night school and is working on a master's.

A: This has killed the problem at Air War College because everybody has their master's by the time they get there. Ten years ago that wasn't necessarily true. That has been cured simply by the evolution of time.

How were you selected to go to Navy War College? Any particular reason?

D: A couple of things happened. One, I was selected for ICAF earlier. I was working in the Secretariat. My boss was Ernie Fitzgerald, and he was all upset about me going. We were just working out some things. I went down to talk to the Assistant Secretary, Ted Marks, and I said, "I think I would like to get taken off this list." He strongly advised against it. I couldn't tell you how strongly he advised against getting off the list. I kept after him, though. At the end of a few weeks, he finally said, "Look, if that is what you want to do, we can do it, but you are making a mistake."

I was a lieutenant colonel, and they were taking lieutenant colonels at ICAF. Vietnam was on. Zuckert wrote a letter and said I should be taken off the list and should be a candidate next year for the National War College, NWC. Those are the same initials as the Navy War College (laughter). So the next year they changed the criteria and were taking only colonels instead of lieutenant colonels. They went back up to the old criteria. I was not a colonel. Another year passed, and I was selected for colonel and for NWC.

In that interim the Navy War College complained to the Air Staff, probably Chief to Chief or something, saying that the people we were sending up there were not their best folks; whereas on the other hand, they were sending their topnotch folks to the Army and to the Air Force. They wanted to have a good representation, a cross section, of the Air Force, which included below-the-zone people. I ended up as one of the below-the-zone people going up there. Jerry O'Malley was in that class. He was a below-the-zone colonel also.

DRIESSNACK

In that class, I think 16 of us went, and four of us made general officer. It was very interesting.

I had a year in the Navy as an enlisted man back at the end of World War II. I felt like I really didn't have to learn any more about the Navy. Nevertheless, I got selected and went. I remember one fellow in the Air Force who graduated from Annapolis got selected to go. He said there was no reason for him to go, and I think he did get taken off. I tried to parley my years as an enlisted Navy man, but it didn't work, and I went up there. I enjoyed the course, but I was looking forward to going to the National War College or to ICAF, and I didn't.

A: You never got to Southeast Asia. Was that simply because of what you were involved with?

D: Yes. I was involved all right. At that time I was on the Air Staff. I was at the Secretariat, and then I was over in Systems Command. I had a directed assignment, so I never got over there.

At the Navy War College the paper I worked on was the all-volunteer force. Our premise was that in an all-volunteer force we wouldn't get enough officers to serve. We went out and did a national survey and wrote a paper on that. It got selected as the outstanding paper of the college for that year, so we got a nice letter. There were four of us: a Marine colonel, an Army colonel, myself as the Air Force colonel, and a Navy captain. Two of those people were also working on their master's so they were busy doing other things. I already had mine, so I did a lot of the

development of the questions and things that we asked in our national survey.

We went out to ROTC units all around the country. We took a cross section of the country in the same pattern as we have for the census so we could get some correlation--northeast, midwest, west coast, etc. We ran a sample survey which was way beyond adequate according to the folks that do surveys. We also ran it at OCS [Officer Candidate School] and at the naval OCS up there at Newport. That is where all the Navy candidates went. The naval OCS came out 100 percent draft motivated. They had people from all the Ivy League schools up there. In fact, the ensign who put all this on a computer and ran the statistics for us had a bachelor's out of Harvard and a master's out of MIT in computer science. He was there strictly because of the draft. They did not want to be drafted, so they went to Navy OCS.

The Gates Commission was in being at the time. This was the 1969-70 time frame. Southeast Asia, Vietnam, was at its height. They were burning ROTC buildings at different places. At my alma mater, Syracuse, they burned the Army ROTC building, and they did at St Louis. At Rutgers the ROTC Commandant, the professor of air science, said, "Please don't ask me to hand out these questionnaires. I'm on tender hooks, and anything like this is just going to destroy us." I said, "That is what we are looking for; we are looking for real facts," so we asked him to send it out.

We got all the questionnaires back. They did not have to sign them. They were handed out in class. We tested it at the University of Rhode Island. We went over there and

DRIESSNACK

talked to the ROTC people, and we built the whole premise based on that sample visit. We said that unless something changed, we could not get enough officers to serve. It was too big a problem to address, so we just addressed the officer problem. We made some recommendations about what motivates people based on our visits to campuses.

They would have to double the monthly ROTC stipend. It was \$50; it would go to \$100. We said to double the scholarships. People will give years in service in order to get through college. They will give up a year, 2, 4 years for an equivalent amount of college. That was two things that could be done easily that needed to be done. The third one was that the pay would have to be raised substantially so that, say, a school teacher coming into the services looks at his worth or his starting salary at a certain level.

If you are going to be an engineer, you look at your salary at a certain level. If you are going to be a lawyer, you have an idea of where your entrance salary is going to be. The closer the services could get to that, the more chance of getting good people in, then they can work on them while they are there. All three of those things were eventually done.

We delivered that paper to the Pentagon. It was selected and briefed to all the visiting admirals and the Pentagon people that came through Newport. We briefed Senator Kennedy. He came to the War College for a meeting or a speech; we briefed them all. The OSD took that paper to the Hill just as it was developed and justified the additional

scholarships and the ROTC stipend; and since that paper (1970), we have never gone above \$100 a month in ROTC.

A: While we are on the subject of officer recruitment, there has been writing about "the great divorce," where, during the Vietnam War, the Ivy League commissioned officers were not represented in Southeast Asia. Since then you have all the Ivy Leaguers, the traditional sources of officer strength, who have nothing to do with the military. What we are getting now--as someone once said--are the kids out of the Catholic colleges and the south as the officer corps. Has this, in fact, happened?

D: I think so. They started coming back later on. Princeton asked for ROTC to come back on campus. We got to the point where ROTC could just have them wait in line because we were generating enough officers. My complaint to the Ivy League people---- I went up and talked to this one economics professor at Brown who was doing the Gates Commission thing, and he was into a strictly monetary solution. In other words, you have got to pay for it. If we wanted MBAs, we are going to have to pay the going MBA starting salary. Well, that is ridiculous. We can't do that. From an economic standpoint, we have to pay for the service, so if you want to have guys drive airplanes, you have to pay whatever the going rate is.

Gates came up with a number, and there was a substantial increase in the pay as a result of that, and we ended up with a higher paid all-volunteer force. The thing that brings people in at the other end--I'm convinced, based on our questionnaires and the answers we got in our interviews



with people--is the fact that when I'm a college student and I'm trying to get through school, I'm going to do most anything to get through school. If I can join ROTC and get \$100 a month; if I can work on a scholarship and get through, I will very gladly give the Government 4 years of my life. Otherwise, I'm going to borrow it and pay it back some way, and I have got to work that out. This way I can serve and get paid at the same time. What is all that bad about that? With the Reagan Administration, all of a sudden the uniformed service became not so bad. They were accepted everywhere again.

The further we get away from Vietnam, the more acceptable the military has become as not only a career but an honored profession and way of life. As you said, people are still going back and writing about World War II, and that is what you are going to read about. People are going to go back and look at all those things in a different light.

I do think the Ivy League, by taking themselves out of that, will never be on the inside again to say anything about what happens in the military. The history of this country is the military. Look at the history of this country: opening of the West, settling of the Colonies, everything. It was the military that provided the leadership. The military history of this country is the history of the country. You can follow the development of the country just by the military history--the battles, the openings--no matter what we did. Ivy League colleges just won't be a part of that. I don't know whether they accept that; they don't care. The professors that were there at the time didn't care because the eastern establishments are very liberal, so you have a

hard time. There are a lot of good State schools in the East that kept ROTC units.

A: This fellow Hadley used to be a military writer.

(END SIDE 1, TAPE 13)

A: Over the years Congress has sometimes authorized and allocated money for programs that the military did not want. How was it handled when they would give you monies for certain programs that the Air Force hadn't asked for? Maybe the A-10 is an example. Do you just go ahead and spend it like Congress has told you to?

D: Yes. They gave us -130s every year. They gave us airplanes; things that we didn't ask for, but it meant we didn't get something else, but we bought those. They didn't have the priority, but we could use them so we just bought them.

A: So by law you have to spend the money on what it was allocated for?

D: Yes.

A: Could you just hold the money back?

D: Oh, yes. You could at one time hold the money back and not do anything with it; but a while back they passed a law so the President can't do that anymore. It was the Recision Act. He has to actually go to the Congress and tell them,

DRIESSNACK

"I'm not going to spend the money for this," and then they have a chance to overrule on it.

A: The Carter Administration went to zero-base budgeting. Did this effect how the Air Force prepared its budgets?

D: It was a little bit of a disaster. The theory behind zero-base budgeting was that you essentially started from scratch every year. Just think about that a little bit. Our programs start with a concept formulation stage. First, it has to be a statement of need. You go through a concept formulation stage. We had gone through a long development cycle and finally a full-scale development into preproduction and then finally production. There is a test phase. This is a long, long cycle. It takes too long--anywhere from 7 to 15 years-- depending on what the system is.

Here comes a group of guys that don't understand this at all. They are saying we are going to zero-base budgeting. It's like running your local garage. You can't do that. There is no continuity in programs. Well, the argument is, "You can just give them the priorities." If they have the priorities, why zero them out and then put them back in; just keep them.

There has got to be some continuity. I can see examining new programs each year and examining the old and saying, "Should we continue on," but you don't go back and clean the sheet off. We got into this, looked at it, and decided for 4 years--at least the period of time I was going to be there in budget--I was going to have to live with this. There is

no sense arguing with it. You have to figure out what it is they want, and you really have free rein because no one in National Government has done it before.

I went to a meeting over at OMB. The OMB director came out, and then President Jimmy Carter came out. He was introduced, and he explained what he wanted to do and how he wanted to get a handle on the cost of Government. This technique worked for him in Georgia, and he wanted to try it in the Federal Government, and he wanted our cooperation. Well, when the President says he wants your cooperation, if you sit there as close as from me to you listening to the President talk to you--I don't care who the President is--and if you were raised in the uniform, then you are going to go back and give it your best shot.

I went back from that meeting and said, "Okay, we have got to figure out how to make this thing work." We had to put the programs in some priority. Well, in the Air Force our mechanism on the Air Staff Board and Council was such that we did that already. We essentially had priorities, but we didn't formally list priorities. We didn't list them 1 through 10,000. We had on-going programs that we put in there. There were some things that had to be a given. We had 900,000 men in uniform. We said, "Do we go by name and put them in there? Who is the first guy with the first priority? The Chief? And then we work our way down to the new recruit." We didn't do that. We said, "Okay, we are going to have 'personnel.' We have to have the Strategic Air Command; the missiles in the holes are going to stay there. If we have to man them, we have to have people for them and spare parts."

We put the strategic things in; we put the air defense things in. We had treaties and commitments overseas; we put those in. Some of those are obvious. But as we put them in, we were prioritizing. We were saying, "Okay, these are our priorities." While we unconsciously did that before, now we had to consciously make an effort to do that; so the only thing new about all of this was formally prioritizing the marginal programs, those things at the margin that you could, in fact, identify.

We put them on a machine. I would like to say computer, but it turned out that it was an automatic typewriter that we put this on, but we used computer paper. We actually had it on a computer, but then we had to type it because it only printed by single sheets. We took all those marginal programs--we were given a level, and everything above that level was looked at by OSD and then OMB--and we calibrated them, and we had a running total, which was part of the ruling.

We were at, say, \$20 million; and then everything that got added, every million above that, went to program A; now the total was \$21 million. Program B was \$5 million; now the total was \$26 million. We had the running totals on the margins along with the program. We kind of stacked those up. When we came to the bottom of the sheet--we actually went up on the sheet--every place we added a program, we added total dollars, and we had them prioritized.

I took that in to the Comptroller, who was Buckingham [Lt Gen Charles E.] at the time, and then we took it to Davey Jones to get him ready to go down to the OSD meeting. The

Air Force was going to be the first one at what they called the "budget issues" meeting. I made a copy, and he wanted a copy for the Secretary; so I made one for the Comptroller, the Secretary, and Jones.

Well, they got in the meeting, and Buckingham came running up and said, "We need about 10 or 12 copies." We tried to run these on automatic typewriters. We tried to type it out and just keep printing. We got maybe half a dozen for the meeting because the Secretary of Defense wanted one, the Under Secretary wanted one, and the whole staff wanted one. It got to be a best seller. I think the Army was up next. They said, "Okay, we want the same format that the Air Force came down with."

My counterpart called me and said, "What the hell are you guys doing over there?!!" I tried to explain it to him so I sent him over the thing. He said, "Geez, we have got to go do this," so they had to change their whole format around. Anyway, that is the way we looked at it. We used that format, by the way, in OSD for the 4 years of zero-base budgeting. It made us all look at the margin. Now, as much as we bad-mouthed zero-base budgeting, when we continued the normal system later on, we did prioritize at the margin; we just kept that up because that prioritization of the margin got to be a method of operation. We didn't have to format it that way, but the computer now took care of it, and we went into that kind of a mode. It worked out pretty good.

A: You mentioned your counterpart in the Army. Would you, as Comptroller, talk to the Navy and the Army as to how you were doing things and why?

DRIESSNACK

D: Absolutely. You couldn't survive without doing that. In fact, it was funny because OSD wouldn't give us the OSD position; they would only give us our Air Force position. They gave the Navy theirs and the Army theirs. We would go back to the office, xerox a copy, and swap between the three of us just so that we knew as much as OSD did when we went down to argue with them. That is the way we survived. I always had a good relationship with the Directors of Budget and when I got to be the Comptroller, with the comptrollers. It was a very good relationship. As far as I know, it has always been that way.

A: Did the Army and the Navy run their comptroller business the same way you did?

D: A little different. By law the Navy was set up where the Assistant Secretary/FM [Financial Management] was the Comptroller; and the Army was set up the same way we were. The law reads that if he (Comptroller) is a civilian, then his deputy is a military. If he is military, his deputy must be a civilian. For the Comptroller in the Air Force and Army, the Deputy Comptroller was always an SES. Joe Popple [Joseph P.] ended up as my SES. When I was the Comptroller, I brought him over as the Deputy Director of Comptroller, and he is still there.

The thing a little awkward about that is that you serve two masters. You had to report to the Secretary's staff, the civilian by law, and you also reported to the Chief. You had to walk that line of keeping both those folks informed and happy.

- A: Knowing that you were reporting to the Chief of Staff of the Air Force, would the Office of the Secretary of the Air Force take less interest in it?
- D: Oh, no. When it came budget time, depending on who that Assistant Secretary was, some of them got very much involved; some of them just became informed. Some of them wanted to get involved with the nitty-gritty practice, and there you get a little bit into backgrounds. If you had somebody that came out of industry, or whatever walk of life he came out of, he was at a higher level, and he did some oversight kind of thing. If you had some people that were hands-on folks, they wanted to get down and actually work the numbers, which was sort of silly because you had an entire staff that had worked a year putting this together; and all of a sudden they wanted to get in and muck around in the numbers.

(Looking at papers; side talk)

Jack Hewitt [John] came in and then Hale came in under the new Administration. He came off the Hill. He had been a lieutenant, an Annapolis graduate. He put in his minimum years, went to work for OSD in the comptroller office, and then when the budget committee started on the Hill, he went over and worked on that staff. He came back as the FM. His experience was his Annapolis experience. His father was a colonel in the Air Force, Russ Hale; and I remember him as a teen-aged kid out at Wright-Patterson. He worked a few years at OSD, and then he was on the Hill. He then came back in and was one of those folks that was always at the worker level and wanted to work.



DRIESSNACK

A: That is a two-edged sword because they know what is going on and want to do more about it.

D: Absolutely. He was never in the decision process; he was at the worker level. Now all-of a sudden he is the decision maker, and he has no experience in making decisions. Bringing staff members over from the Hill to work in OSD--and there is a lot of that that goes on--is not the brightest thing to do.

A: I wasn't aware of all that going back and forth. I heard Kissinger getting sarcastic on a TV show. I don't think many people picked up on what he was talking about, but he was grumbling about--as Secretary of State--the fact that he had to contend with foreign officers that either quit or had gotten passed over for promotion. They went up on the Hill and got jobs on legislative staffs dealing with foreign relations and were now coming back this way using the power of their sponsor's office to impose things they couldn't get done otherwise.

I wish I could remember his exact words; something like, "We now have agendas from Foreign Service officers that could not make it as Foreign Service officers," or something. Would that have been a problem, too?

D: We have had that. We have had retired lieutenant colonels, people who never made colonel, that are now over there reviewing our programs.

A: It is almost a revenge-type situation.

D: There are quite a few. All the services--Army, Navy, Air Force--have retired people on the staffs over there. Derek Vandershaft was an Army lieutenant. He didn't make field marshal after a couple of years, so he went over to the Hill. He worked on the House Appropriations Defense Subcommittee. He used to give us fits. He was an expert because he had been a lieutenant in the Army. He also worked at OSD. He got out of the service and worked at that level, plus he was in budget. He went over on the Hill. He came back and is now the Deputy IG. He knows everything there is to know. If you don't believe that, you can ask him.

One of the things I did when I was Director of Budget was to take a hard look at how we were doing things. I walked in there, and the first thing I realized was that people were working 7 days a week during budget time. There was somebody there all the time. Saturday was a normal workday over there. It was just an accepted fact. People worked around the clock. I said, "I really don't understand why we are doing this because we have a much more sophisticated process in the field for putting together a budget. I don't understand what the problem is here."

As I got more and more into it, I realized that we had an antiquated hand-operated system being used. The computer we had was a batch process type of thing. They were so busy they had never taken the time to upgrade anything. I decided we were never going to put the budget together that way again. I asked Joe Popple, who was one of the deputies, asked him about it because he seemed to be more sophisticated and had had some conversations with me about

## DRIESSNACK

adding some computer power and getting into a different mode. I said to him, "How did we get the way we are?" I met with my folks, and they had always experienced it that way; a stubby pencil kind of thing.

The thing that got to me was one Saturday morning when I walked upstairs and found some folks sitting there with 10-columnar accounting paper putting numbers down by hand. I said, "What are you doing?" They had an actual sheet from a computer printout that had come out. They were taking the numbers off that sheet and putting them in their 10-columnar page. I said, "Why do you do that?" They said, "We want to make sure the numbers are matched right."

Quite frequently they found that whatever we sent down had to be card-punched and then was batch-processed overnight. It came back the next morning, and if it wasn't right or if it crashed, we had to do it all over. Things got lost, what have you, in this laborious system. I said, "Why don't we have an iterative process where we just go back and forth?" It turned out we didn't have that kind of computer.

We talked about ways to upgrade. I said, "Okay, here is what we are going to do." We had a very good computer system in Systems Command and some far-thinking people on what we were doing, so we had a much greater capability over there--even out in the field--than we did in the Pentagon. I started in to upgrade that. I said, "Next budget cycle we are not going through this. Let's get started."

We got started. I found somebody in GSA that was interested in modernizing offices. They had done one for OSD when OSD

went to an upgraded system. I went down and looked at that and thought, "Why not? Why don't we take advantage of GSA?" I told them I wanted to do the entire budget organization. I wanted to have an upgraded facility there in the Pentagon and do what I wanted to do with a computer. This was going to be secure.

The Air Force was the executive agent for the computers, so we owned the computers, essentially. We operated them for OSD. I wanted to get locked into an iterative process, and I wanted the people to have remotes on their desks. We were going to work a different approach. I didn't want to have this 7-days-a-week kind of stuff and junk coming up.

GSA came over and said, "You put up \$800,000; and we will put up the rest." I think they were going to double what we had. They ended up with three or four times that because they did it over. On the secure part, something went wrong. It didn't take one budget cycle; it took three. It would never have been completed, I don't believe, except that I became the Comptroller. I watched it from over there. I was over at the comptroller shop before this thing ever really got on line. Now that is what we do routinely. As you walk through the place now, they all wonder. They can't believe there was an old system, but that is exactly what we had until I changed it. Now we are on an iterative kind of response, and they don't work 7 days a week; they work 5. That is being copied. People want to know how we did that.

One time I showed the Chief a definition of slave in Webster's Unabridged Dictionary. If you look up slave, the fifth or sixth definition is "someone who works the budget

in the Pentagon." I said, "That is exactly what they are: slaves. The way they are working here is ridiculous. Why somebody hasn't taken upon themselves to change that is beyond me." When I went there, there were 15 four-drawer file safes around that office. Whoever was there ahead of me, all those good folks, had a hell of a lot better memory or capacity than I had. I said, "It is actually ridiculous to think that I need to know that information in there. If I know all of this, why do I need this staff?"

I had them all taken out. I said, "I don't need all that stuff. Take them all out." My exec took them all out. They went back 4 or 5 years in history. What good that information was is beyond me. It had nothing to do with this year's budget or any of the problems that we were currently having.

I felt that was the problem. People lived in the past and what they were doing in the immediate, and nobody took a look at the future. If we wanted to advance ourselves, we really needed to take a look at the future. If you plan for the future and take care of that, then things can turn out a heck of a lot better than if you handle everything on a day-to-day basis.

A: One of the worst arguments in the world: Well, we have always done it this way.

D: That has changed, and now the modus operandi over there is an iterative way, and it still works pretty well.

- A: In 1978 the fiscal year 1980-84 POM to the Secretary of Defense for the first time was developed at three distinct funding levels--major command inputs; specifics contained in consolidated guidance from OSD and Air Staff initiations. Was this something radical that came about?
- D: I think it was just an evolution on the kind of guidance that we got from OSD. They decided to ask for different levels. It was always changing, evolving; we went from one to another.
- A: Note: In 1978 "Increasing role of Congressional committee staffs; more inquiries, surveys, reports, zero-base budgeting, mission area budget analysis, more face-to-face contact with the Air Force OSD, OMB, and Congress." What is this flash obligation data?
- D: Anytime we broke a threshold or had a problem we were supposed to go with a flash notification to the Congress. We shouldn't wait until the next year's hearings to tell them something. The mission area analysis of the mission area budgets never did come into being. The Budget Reform Act in 1974 set up the authorization for 2 years in the budget process. They never used that. It also said it ought to be done by mission area, and for Muskie [Senator Edmund], who headed the Senate Budget Committee, we used to submit our budgets by mission areas: air defense, strategic, airlift, tactical air, this sort of thing. The rest of the Congress didn't want it. They wanted it the way they had always gotten it, and they didn't want any of that mission area sort of stuff.

DRIESSNACK

I gave a briefing over there with Andy Anderson [Lt Gen Andrew B., Jr.], who was the XO that year at Plans and Operations. We went over and briefed air defense. When we briefed the House Committee on appropriations, they said, "We have never had a briefing like this, and it has really been an eye opener"; but they never asked us to come back and do anything else. The two of us went over and briefed on why we needed the total systems and the dollar impact of having all of this. They were used to seeing every system by itself, and that is the way the Air Staff built it.

If you do it that way, then you lose the context of the totality of the thing. It is like building a college curriculum or a school curriculum if you do it subject by subject, and you never tie the whole thing together. Mission area analysis was supposed to do an analysis of the total area. When we first got into mission area analysis, we found that we graded things on our capability today, what it would be in 5 years and in 10 years, and then where we were funding. In other words, did we have adequate programs and were we looking at where they were going in the future?

If they were in the red (inadequate) this year or 5 years or 10 years, did we have something that was going to work towards correcting that? That is where we should put our money. It turned out where we were very strong, we also had three or four R&D programs getting stronger. Other places where we were very weak, we didn't have anything going, clearly a misapplication of priorities. We ought to be looking or searching for solutions in those weak areas. That is what mission area analysis does for you; very good technique and not well used.

A: What was this Air Force Monthly Budget Execution Book--to compare obligated status against the program as it operates?

D: You do that every year. There is a law that states you can't spend any more money than the Congress authorizes and appropriates. Otherwise, you are in technical violation of Section 36.79, which is the paragraph in the law. You compare actual versus plan, and then OSD looks at it, and they decide on a quarterly basis how much money you are going to get.

In the field the young officer lives in fear of going to jail if he spends more money than he is authorized. On the other hand, if you don't spend the money that Congress gives you--and we worked so hard to get that, and we didn't get what we wanted--then we need to set up a mechanism whereby we could spend all the money that they gave us for the things that they told us to do. If you don't do it that year, the money lapses. In O&M it's gone. In Procurement you have a few years. In R&D you may have a few years. What happens to us in this case is that we have---- This year I forget how many hundreds of millions of dollars were lost. Someone told me it was billions in defense; the money just lapsed, expired; and that is ridiculous to have something like that happen.

A: The follow-on is that if you don't spend it, then you will never get it again.

D: We went through all of the effort to get it----

(END SIDE 2, TAPE 13)



DRIESSNACK

A: I have a note here that John Hewitt, Jr., came over to be Assistant Secretary of the Air Force, Financial Management; a former Air Force Academy graduate. Was he a help?

D: He got out as a captain and went to work for Sinclair Oil or somebody. People like that, when they leave the Air Force, their service maturity is at the level of a captain. Now you are putting him in an Assistant Secretary job. I have problems with that. Jack was a nice guy, and I worked with him, and it was a learning process for him. He had trouble doing some things. I mean, for the first year or so he called me "Sir." I was the Director of Budget; Buckingham was the Comptroller.

I remember during the zero-base budgeting thing, we had worked long into the evening. It was like 9:00 at night. We had to drop off some of the zero-base budgeting formats downstairs for the meeting the next day. The one that I took over for him to look at he started adding numbers with his pencil in the column on the right. He was essentially checking the computer. I said, "What are you doing?!!" He said, "I'm just checking." I said, "That is not a worksheet; that is the finished copy for the Secretary! Goddamn it, Jack! Stay out of this. You are going to screw it up!"

I took it away from him. He apologized and what have you. We were sort of ordering him around. He was learning. He was trying to come down to find out what we were doing, could he help, and this sort of stuff. That is not the kind of guy you need around at that period of time.

A: I have often wondered about the Office of the Secretary of Defense and Secretary of the Air Force. They bring in these civilians, which in many cases have no appreciation. They are political appointments, rewards, and so forth. Ignorance, once again, is a two-edged sword. You can now educate them. They have no preconceived prejudices, perhaps, so they are open to what you want to do and why. At the same time, why should you have to educate somebody that is looking at your work or is supposed to help you? How do you do that?

D: Well, that is the way the system is, and you have to operate within the system. It sometimes gets to be a burden. Now there are some people who come in that bring something with them, and they make a contribution while they are there. It is a learning experience for everybody. We have had people like that. Ted Marks is an example. I was a major and lieutenant colonel when he was the Assistant Secretary. He is a tremendous person. He was a professor at Stanford, but he was an advisor in business and started the Pacific Basin Cooperative Training Program at Stanford. He did a lot of work with that.

He had a breadth of experience in other things. From a business sense he was an excellent person. Also, he was a personal friend and classmate of Bob Anthony, who was then the Comptroller at OSD, so we had ready access to the OSD comptroller shop. People like that. They can open doors and make your life a little easier for you. It is well worthwhile.

DRIESSNACK

A: For example, Secretary of the Air Force Seamans [Robert C., Jr.] had worked in industry, had been at NASA, had been at MIT; so he would not have to be educated as to how Government or industry works. I often shudder when I see pure and simple political appointees.

In 1977 the Air Force became the DOD executive agent for centralized foreign military sales financial management. The Security Systems Account Center [SSAC] was established.

D: Very reluctantly. OSD never wanted to give that up.

A: Why was that?

D: They wanted to keep control. In fact, when we first started it, we ran it; we had to fund it; we had to house it. The Chief of that, who was then the GS-16, reported to OSD--it was before the SES days--to SSAC, and they reported to the Security Assistance Group down on the third floor in the Pentagon. It was a weird arrangement. That way they kept their hands on it.

A: Was this Operations Budget Review Committee [OBRC] to make sure there was accurate distribution of funds to MAJCOMs and special operating----

D: The OBRC has to do with the O&M accounts that go to the operating commands. They review the inputs for all the operating commands and make the distribution of the funds.

A: And the Director of Budget is the OPR?

D: Yes. He, the head of the OBRs, reports to the Director of Budget.

A: When these operating commands would come in with their budget, they weren't trying to sell you as much as they were trying to sell the Chief of Staff, who in turn would sell you on a program, a mission, or a role; or how did that work? Did they give you the dog and pony show?

D: There is a procedure they go through. For the annual budget for their operations, they go through the Operating Budget Review Committee. That committee is chaired by the head of O&M in Budget, then it is staffed by representatives from the Air Staff. They all sit on that. They prioritize that, and then we have to sell that O&M account as a service to OSD and to OMB.

If the using command has a weapon requirement they need, because of a new threat of some sort, they now have to have a faster, shinier, more lethal--whatever it is--kind of thing, there is a normal procedure they go through with a statement of need, which is a formalized procedure. From that comes a specific operational requirement, an SOR. That is the way that process works. They come in to Systems Command and say, "This is the kind of requirement we have." It gets staffed and prioritized.

A: We had talked earlier about historical data on weapon systems and how you can cost an airplane by pounds; and you talked about having 15 filing cabinets of old budgets. How useful were historical costs or information when you came into Budget and was later Comptroller?

DRIESSNACK

D: History in that business only goes back a few years. You can only go back a few years. What did Congress do last year or the last couple of years? What they did 10 years ago is completely irrelevant. There is some history that says Congress will take last year's budget as a base line and go from there. When Carter went to zero-base budgeting, the Congress never went to zero-base budgeting. They looked at it their same old way. We had to have the same justification sheets, the same Congressional justification books, whatever they wanted; and they are all different. The Senate wants something different than the House. The four committees all get different stuff.

A: When they went to the fiscal year starting in October, they did that in 1978. You had 1976-T or temporary. Did that cause any real problems?

D: We worked it out. It was the 7-T in there; 3 months. It was like a 3-months' supplemental.

A: I notice they still can't get a budget.

D: I figure that somewhere along the line they will move it again. There will be lots of argument to say the fiscal year ought to start the first of January. Why not? We will move it to the end of December so they will get a budget of 1 January. Because of the holidays and the press of elections, that obviously is not going to work so we will move it again. Pretty soon we will get to a point in 50 years where we will miss a whole year.

A: Look at the money we will save. (Laughter)

In July 1978 the Air Force Audit Agency became part of the Secretary of the Air Force's office. Was there any reason behind that?

D: They just wanted to have an independent audit agency reporting to the Secretary. There again it depends on who the Secretary is. There is an internal audit in the Army, and it is a very large organization that reports to the Comptroller. If the Comptroller wants to do something; let's say as the Comptroller you want to go out and audit a command or a particular appropriation some place, or an accounting and finance operation. You ought to be able to send your auditors out there and do that.

In this case they operate completely independent of the Comptroller, and they report to the Secretary. Actually the Secretary is one of the Comptroller's bosses. Then it becomes not a working audit function but kind of an IG function. Who are they working for, and what are they looking for? They are looking for "gotchas," or they are looking to make sure of something being done properly.

The thing that I looked for in the audit was an oversight-- to make sure things are done legally. You have to do enough audits to make sure that we don't have people misappropriating money or lining their pockets or something. The nickel-and-dime stuff you get into with travel vouchers and stuff like that, while it's bad, it's not catastrophic. What you need to do is look at a broader view.

There is a lot of money that gets spent in the Air Force. You really need to take a look at some of the accounts that

DRIESSNACK

have very little oversight. It has been done by what we think are people with integrity, and we haven't had any problems, so some people would argue, "Why look for problems?"

A: Would it be easy for a person to line their own pockets?

D: It would be very difficult for somebody to get big money out of the Air Force. You can set up an account. With enough collusion, you could set up a false contractor someplace and make the money available out of Accounting and Finance and contract out for it with a dummy account, but it wouldn't last long.

A: Was there not an Air Force general who got in trouble with some black program over in Europe where they accused him of putting money into a Swiss bank account?

D: Yes. Let me tell you that story. When I was the Comptroller and the black money started getting into really big figures, I asked my deputy whether we had ever audited those accounts. Joe Pople and I had a conversation to this extent. He said as far as he knew, no; so I asked the Audit Agency. They said, "No, they never had the tickets to go in there."

I had a captain working for us that came out of the Audit Agency. He was out at Wright-Patterson at ASD. We took him out of the Audit Agency because he was a very bright guy, and the resident auditor out there used to sit at my staff meetings. He was independent and reported to the Audit Agency. He was part of the family, so to speak, so I used

to invite him to the comptroller staff meetings. Barney was his name. When he was getting ready to retire, he said, "I have a young captain working for me that I haven't told you about. I think you ought to get him out of Audit and into your business because he is the brightest captain I've seen in years."

I got hold of him, and we did transfer him. He came over into Cost Analysis. He got reassigned some years later and was in the Pentagon. By the time I moved over to be the Comptroller, sure enough this young captain arrives in Cost Analysis and now they are going to transition him over into Budget. He was learning the business. I guess he was in Budget, and we were going to move him to Cost Analysis. We were rounding him out because he was a very bright young fellow coming along with an excellent accounting background. He had this good audit experience. At Wright Field he had all of the black tickets because he was into those programs.

I said to the Auditor General, "We have a guy that is authorized to get into the black programs." He was auditing for them at ASD because he had the tickets. They had put him in that business. "Let's transfer him back to the Audit Agency, and I would like for him to run an audit on these black programs." He agreed to that, so we transferred him. He was assigned to do that audit. Going through those books that had never been audited, we didn't find anything that we could not explain except one incident, and it had to do with a Swiss bank account during the Vietnam era. That is now history, but we found that money went into an account over there.



DRIESSNACK

Years later the same amount of money came out, and then one wondered what happened to the interest as we kept transferring money in the thing. Someone was fooling around with the interest where the money went from one account to another account: draw the interest; the principal came back; the interest stayed. When you are dealing with large sums of money, that adds up. This was a case where it seemed like somebody got caught with his hand in the cookie jar. We turned that over to Justice, but that is where that came from. It was during my tenure as the Comptroller.

A: It seems eventually the whole thing was dropped.

D: I think he was going to trial and threatened that he was going to expose the whole security system. At that stage, my opinion is that they should have just hung him. To threaten the Air Force that he was going to expose the whole security system; what kind of officer is that? It's crazy. He probably had advice from a lawyer, and he was saving his neck, but he was clearly in the wrong.

A: It seems that just within the last year or two I remember reading something about that.

D: You ought to be able to take his retired pay away or something, but you can't. There are no provisions.

A: Is the name General Bennett Meyers [Maj Gen] familiar to you? He was in charge of airplane production in World War II. It turns out he had set up a company to manufacture some items. He made his girlfriend's husband in charge of this corporation. He was buying things from them and was

getting profit on all things. They caught him after World War II about 1947, and he went to jail for a couple of years. He was a two-star general, apparently extremely brilliant. I have never been able to find out from anybody what happened to him. The generation that knew him is now gone. Apparently he really did great things for aircraft production in World War II; was a personal friend of Arnold, and all that stuff.

The only comment from Kuter and Eaker, for example, was: "Considering all the money spent and all the people involved, that was the only bad apple we had, which 'ain't' too damn bad." That is true when you figure all the shady characters in the world, so the military has been relatively unaffected.

D: I felt as the Comptroller we had an obligation to the Air Force. I didn't want anything coming out some day that we didn't find ourselves, because it had never been audited. I went to review some of that stuff when I got to be the Comptroller and decided we owed it to the Air Force to look at it.

A: Now are they audited on a regular basis?

D: Now they are, once it started. We have people that are cleared for classified to look at those accounts.

A: I read the other day the percentage of black programs in the budget is getting bigger and bigger all the time.

DRIESSNACK

When you came out of Systems Command to be in Budget, were you surprised that you got the budget job?

D: Yes. It was the last job in the world I wanted.

A: Had you had enough, or what was it?

D: It was a tough job. You talk to the people who have been in the job, and it is 7 days a week. I went through all that, and I was determined to change that, and I did change it. I was only there a couple of years, and then I went over to the comptroller job.

A: Is it a normal progression for the Director of Budget to become the Comptroller?

D: Yes and no. They have, and they have not. Recently the Director of Budget has become the Comptroller. Deluca, as an example, was the comptroller at Log Command. General Crow was the Director of Budget. General Jack Merrell came in from outside the Pentagon. Other people have come in from other places. It has not always been the Director of Budget going into that job.

A: Has it always been comptroller type people?

D: No.

A: Can you do that job if you haven't had experience in that area?

D: You can do the job because you have a lot of good help, but if you don't understand the nuances of that---- We have had a lot of people in the comptroller job that have been budget officers. They have had budget their whole career, and their strength has been in budget. They don't understand the cost analysis side or are not interested in it. They let other people do the other pieces of it. Because I had also been in the procurement side and had been in the project offices, I found I was a lot more effective.

If you are looking for somebody from a business sense, of asking the right questions and picking up on subtleties and things that go on, then you are better off to have somebody that is rounded, that has had more than just budget or more than Pentagon experience. They really ought to have the field experience.

A: Including some operational experience. In looking at your biography, you were chairman of the Finance Committee of the Board of Directors of the Army and Air Force Exchange Service; member of the Board of Trustees of the Air Force Aid Society, and member of the Board of Commissioners of the US Soldiers' and Airmen's Home. Did that take a lot of your time?

D: No. You take things like the Exchange Service, as an example. As far as the morale and welfare of the troops is concerned, there is nothing more important that we do. In the first place, if people have a good BX and commissary, the families are happy. If they are overseas and they have a bad one, you will hear about it. If they have a good one, they are very happy. Americans are funny. You and I might

## DRIESSNACK

be different than that. If you went to Europe, you might shop in Europe and go out into the community because of personal interest or educational background, but the average GI will stay on the base. He will not go off base. He doesn't want to venture out and do those kinds of things. Now if you get a lot of guys milling around with nothing to do, they get in trouble.

One of the things you do is satellite in the college games on Saturday and a pro football game on Sunday, and the crime rate goes way down, way down! Guys go out and get a six-pack of beer, go back to the room, and watch a football game; and this is just like everybody in the US is doing. It doesn't make any difference whether it is 2:00 in the morning. They will sit there and watch those games; or get up early and do the same thing that they are doing in the US.

- A: When I was a radio operator, we had our base station on Clark and our transmitter site at Camp O'Donnell. I knew civilian radio operators, especially the married people, who would fly into Manila, get an Embassy car up to Clark, come on the base, and stay there 2 years. When it was time to leave, they would take the car back down to Manila and get on the airplane. They might as well have been in Arizona or Maine.
- D: The BX system generates the bulk of the MWR [morale, welfare, and recreation] monies. It comes out of that system. The profits get divided up between the Army and the Air Force, based on the number of soldiers and airmen that we have. We guarantee that a certain amount of money each

year goes to the MWR activities, so we manage that business. It is like the seventh largest retail chain in the country. It is a very big organization.

A: I hear complaints all the time that "the prices are not that good in the BX." Is there a certain amount of validity in that?

D: It depends on where you buy. You can now buy at discount stores, but if you go shopping--we have independent people do this--in the BX and commissary, you will save 22 percent over department store prices.

A: At Maxwell you automatically save 8 percent sales tax within the city of Montgomery on every item.

D: They will take a shopping list and go to a department store and the BX and do some comparable shopping. Now if you want to select around and go to Circuit City or K-Mart or someplace that is having a sale, you can do better, but then you are doing a lot of running around, too. It is not the one-point shopping.

A: Did you have to get in this business of defending AAFES to Congress every time a local businessman wrote in saying, "Hey, they are breaking me out here"?

D: Dan Daniel from West Virginia is the Congressman that is in charge of all that. We used to go over and see him periodically. When I was there, I was chairman of the board. We got into the Playboy/Penthouse rap. We also got into the scandal with people taking kickbacks.

DRIESSNACK

- A: There for a while it seemed like once a week some guy was getting nailed.
- D: I got into it, and it was a hornet's nest. Anyway, the Penthouse and Playboy people came in, sat down, and talked to me. They wanted to push issues and take us to court and so on. I said, "Come on; let's go to court." They were talking that I was inhibiting the freedom of speech.

I said, "I'm not inhibiting the freedom of speech at all. I just said I'm not going to have naked women on a shelf where a 7- or 10-year-old can pick it up and flip through the pages--not if I can control it. You may win your case in court, but have any of you guys ever been in the service?"

"I've got sergeants out there that may lose your bundle of magazines. It may arrive on the base, but nobody knows where it is; or the stock clerk never put it out of the stockroom. It never got to the shelf. I don't control that, but those things do happen. While you may win the case, you will never sell another magazine. Is that what you want to do?" They disappeared.

We had a wrap on it. It said Playboy, Penthouse; but it was a brown paper wrap. It was opaque so you couldn't see any girls. Also, the kids can't pick them up, flip through, and read them because the wrap is on. Also, they were at the top of the shelf where the adults could see them, but the kids couldn't reach up there and grab the magazines.

- A: But they wanted to go to war?

D: Oh, yes! They really wanted to sell magazines. The GI was a great market for this magazine.

A: What about the more raunchy ones like Hustler?

D: The three of them were in there: Hustler, Penthouse, and Playboy. It is also up to the local commander as to what he wants to sell. You can't challenge that. That depends on the people. If the people don't want it; and there are some local laws that have come out as a result of that saying, "We don't want them sold in this community"; then they don't get into the community. If they do, nobody buys them, so why have them? The guy in the store says, "I don't want them." He doesn't take every magazine that comes out.

(END SIDE 1, TAPE 14)

A: What about the Air Force Aid Society?

D: The Air Force Aid Society is a good organization. It helps the GI. There were cases where we would get a young airman overseas, and his wife has never had any dental care. All of a sudden she has to have false teeth; or his mother dies back home, and he doesn't have airfare to come to the funeral. That is where Air Force Aid goes in. You can either give them the money as an outright grant, or you can give them a no-interest loan. They have no credit. They can't go to the credit union and get anything, so you just make it available to them.

In those days we also underwrote educational loans; gave scholarships, provided loans. When the Federal educational



DRIESSNACK

loan law came through, then we became a sponsor. Chase Manhattan ran it. We put up \$10,000 and controlled maybe \$10 million in scholarships. There was some phenomenal leverage that we had. We had to put up a certain amount of money to be the risk between the people we were sponsoring and what they would actually pay back.

A: Was this geared more to the enlisted force?

D: Yes. It was for everybody, but it was geared more toward the enlisted force. When I got into Air Force Aid, they had a leader running it that was the first JAG of the Air Force. He had been there since the beginning. He invested the money. There was something like \$25 million in that pot. I don't know how long they had had \$25 million, but if he had put the money even in a savings account, we would have done better than that. These guys were into stocks, and they had brokers that were doing this, and it just wasn't very satisfactory.

There is a board made up of outside people as well as inside people. We got together, finally, and got a new director at my first or second meeting. We ended up retiring the one man, and General Ted Seith [General Lewis T.], who had come out of Europe, was the new director of the Air Force Aid Society and still is today. We started a whole new program. We had quarterly meetings, usually in New York on Wall Street at US Trust or whoever had our vouchers, bonds, and stocks.

That is a lot of money to have around. We parlayed that money and started it growing. We could have put it in

savings bonds and done better than they had, especially in that era of double-digit inflation. They just sat there playing with stocks instead of putting it in some instrument like CDs where we could compound that interest. Compounded interest is awesome.

A: And then there is this Soldiers' and Airmen's Home. Is that the one here in DC?

D: General McKee [Lt Gen George H.] is the governor there, and that board position gets to be part of the comptroller's responsibility. The Air Force Aid and the Army and Air Force Exchange Service and the Soldiers' and Airmen's Home are three things that you inherit as the Comptroller by virtue of the position. I used to go out and visit. I took a real interest in the place. We did make some changes. Again, we changed the governor. It seems every place I went we did. McKee is the first Air Force governor. That place was always Army even though it was a soldier's and airman's place.

A: Is that funded by a deduction from pay?

D: Yes. They have pay deductions. In World War II they took 10 cents out of your pay, then it got up to a quarter; then it dropped down again. They didn't need the money. If you can imagine how wealthy it got during World War II with all the millions of people that we had and taking a dime out of each pay check. It gives the GI, the enlisted man, the right to live in that home in his retired years. He gets all his room, board, and medical care. They go over to

DRIESSNACK

Walter Reed for their medical care. It is a beautiful facility.

One thing we did was to take squad rooms where they had four in a room--it was built under an old Army concept--and make them into private rooms so they are now all private rooms. The new thing was that now we had women that had served 20 years, and they started to come in out there. We have one building that is dedicated to the women. It is a great place to visit.

You can go out and talk to some of them, real old-timers. A lot of them are now gone, but there were people who were in World War I. They were handicapped or had lost limbs or what have you. If you walked in there in uniform, the guys would sort of come to attention in bed. It really tugged at your heart strings to go in, visit, and talk to some of those old-timers. Actually the site was Lincoln's Summer White House. The guest cottage right in the middle of the place is where Lincoln stayed--his bedroom and his wife's bedroom.

A: In those days that was far above the city of Washington?

D: Oh, yes. In fact, the first assassination attempt on his life was going out 16th Street to that Summer White House. An empty carriage went out on a trial run, and they captured that empty carriage. Had Lincoln been in it, he would have been assassinated on that trip.

A: That is a piece of trivia I never heard before.

There was a lack of uniformity of cost accounting structures across major DOD contractors. Today are there different accounting methods?

D: You don't necessarily have to have uniformity. The reason we wrote those cost and schedule control system criteria was that they would meet a certain standard. There are a series of Federal cost accounting standards that were put together by law. If you meet the IRS requirement in a normal CPA requirement, we don't care what kind of an accounting system you have as long as it meets certain criteria and a certain standard.

A: Did you ever run into contractors literally stealing?

D: No. I have never run into a major contractor that stole anything. I think some of them, at the lower levels, may have books that are a little loose, or they didn't have the internal controls that they should have had. There are checks and balances. We have people in the plant that actually do audits, and they do bench audits. They will make sure that somebody is not charging to the wrong contract. That happens. Unfortunately, it happens by direction sometimes. It is hard to say "the company"; it is "somebody."

A: Like GE; a few year's ago the third or fourth level guys went to jail. I forget whether that was on conspiracy to set prices or something else.

D: Well, they were overrunning contract A and underrunning contract B; so they will say, "Charge A to B." Whoever the

DRIESSNACK

workman is, he takes direction from his foreman on where to charge. He tells him where and so he charges. Chances are he may or may not know that part is for contract A and not contract B. To the extent he knows, some of them have blown the whistle on the thing and reported it; "My boss said to do it, and I'm just doing what the boss said to do."

A: Wasn't there a guy at Lockheed on the C-5 by the name of Henry Durham? They interviewed him on "60 Minutes." Didn't Fitzgerald sue you? Whatever happened to that, and what was it for?

D: Fitzgerald sued me as part of an alleged conspiracy with the President, the Secretary of Defense, the Secretary of the Air Force, the Comptroller of the Air Force; a whole series of people. I was the seventh one in the chain of the conspiracy to fire him. That whole thing eventually went to court and got thrown out. I really suffered from that in the sense that the lawsuit came into being about the time I was nominated for brigadier. We held up the whole list for several months until I could clear myself, and then they let the list go. Some of the Senators over there wanted General Brown to take me off the list and put me in separately so that they could approve the rest of the list. He said, "No way. That whole list goes or nobody goes." They had the pressure of all those people.

A: Who were some of the other generals on the list?

D: Jim Ahmann [Lt Gen James H.] was on the list. He was also part of a -111 raid in Cambodia. He was the other guy being investigated.

A: Did you lose any seniority or money to amount to anything?

D: Not on the brigadier list. By law there can only be a certain number on board at a certain time, so each one had a time frame; but the old-timers did. I don't remember whether I lost any money or not. By the time I was nominated for my third star, the whole thing got resurrected again. They said I had perjured myself on that first testimony, and they were looking at it again.

A: What had you testified the first time?

D: I signed an affidavit. I went over to Congress, and they took a statement. Senator Cannon had the subcommittee looking at it. I went over and talked to the staffers and gave them an affidavit.

A: What did that say?

D: I didn't know anything about Fitzgerald firing him. He was released long after I left. I was no longer in the Pentagon when that happened, but he said I was part of it. What happened was: The OSI came to see me when investigating something on him. They asked me a series of questions, and I gave them answers and suggested they also talk to some other people who were more involved with the current situation. I was at Systems Command. It turned out when they came to see me, I was the first one that they talked to talk to. I got to be--in their terminology--T-1; then it was T-2, T-3, etc. By virtue of being T-1, it looked like I had set off the investigation. Ernie was convinced that I

DRIESSNACK

had done that; but that is not true. I did not set off the investigation.

I got involved in the first place when an article appeared in the Washington paper. Ernie owned a small company, and when he came to work for the Government, he sold that company to his partners. He was from Birmingham and went to school at the University of Alabama. He sold a company in California and came to work where he is now. I was in that office when he came in. Ted Marks was the FM, and Ted had hired him. He had interviewed several people. I don't think the others wanted the job. Fitzgerald came in. His company was small, six or seven people, a consulting firm, and essentially took over his contracts. They had to pay him for those things. Their ability to pay was based on their ability to generate more business. They had a contract with Systems Command.

Ernie went into this position, and one of our jobs was oversight of what his former company was doing because it was helping AFSC implement cost schedule control systems criteria; so there was direct oversight. In today's environment you couldn't do that. Anyway, one of the things that appeared in the paper was that this company was going out of business because the Air Force was forcing the small competent company out of business by not paying them on time.

I went to see the person that had the contract. I said, "Is this true? Haven't you paid them?" They said, "We have paid them every time they have billed." They showed me the history of the billings. What they were doing, they were

building up. They were told to use a given number of man-years, and they kept building up more and more, and they were delaying their billing. They had developed a training program. Along the way, the Air Force Systems Command decided that they would do their own training and put it into AFIT or some other training system and not have this company do the training. Where they had anticipated getting more business, it was in fact drying up. They had hired people to do the training, so now they had to pay them in some way. Anyway, it turned out that delaying payment was not true.

A week or two later an article was in the Washington Star and then another one appeared in the Washington Post. These were front-page things. I was upset because I had come out of that environment, and now I was in charge of CSC and the guy that was running it, but I didn't have the special contracts. The guy that was administering that said----

I went again; I said, "Look, here is the stuff again. Now we have got to get to the bottom of this thing. Let's do something about it." We went up to see the comptroller of Systems Command, General Hal Tubner at the time. I said, "Look at this. These two articles appeared in the paper. It is not true; we ought to take some action; just tell them this is not true."

At the same time they were doing some work with the Navy. They were getting a hard time over there, I think. Tubner said, "Let's go over and talk to Crow," so Tubner and I flew over in a helicopter to talk to General Crow. I said, "I'm concerned that the Air Force has taken a black eye here in



DRIESSNACK

the paper for putting a company out of business, and that is not true. We have paid when they billed. I have checked into it, and somebody ought to call the damn paper and correct them. Just say, 'You knew when this came out, we would check the contract. No one has asked.'"

As we talked about earlier, there was no investigation done at all. They merely took the input from the contractor, I assume, or from somebody. They never asked a question in Systems Command on whether that was true or not; they just printed it. I'm not sure what the purpose was behind all that. It was by way of showing that if the Government doesn't want you in the business, they will just put you out of business. That was the gist of the article.

A: Otherwise it was really small potatoes.

D: Yes, but it impacted me. In retrospect, I should have left it alone. It is the old adage: If you are going to get in a pissing contest with a skunk, you are going to get wet. That is all that is going to happen. Anyway, I decided to pursue it. Well, Crow took that and started another investigation. I guess other things had happened. The next thing I knew, I had the OSI out there talking to me, so I talked to them. I answered their questions. It turned out that I was supposed to be T-1. Well, that all went to court. Judge Gesell [Gerhard] was the presiding judge. I thought he was essentially a liberal judge. He is here in the district and has handled some very famous cases. I thought, "Well, we won't get a very good reception there because the establishment is against some poor citizen that has been ousted." But Gesell threw it out.

He wrote a specific case in there, and he referred to me. Clearly I wasn't involved because he referred to me as "small fry" in legal terms. As far as this "conspiracy" was concerned, this lieutenant colonel really had nothing to do with it. You have the President, the Secretary of Defense, the Secretary of the Air Force, and all those stars and politicos involved. Clearly I wasn't starting this conspiracy. Anyway, that got thrown out. I think they appealed, and that was upheld. You can argue about how that was handled, which was kind of dumb, some of the things they did back then. Anyway, it made Ernie very famous.

A: You say that came back later?

D: It came back; there was a complaint filed by a private citizen in the District against a Federal officer. When that happened, I found out, they investigated in the District of Columbia. The district courts go have jurisdiction.

A: Was this a repeat?

D: Same thing but this time it said that I had perjured myself. In other words, on the affidavit I signed, which was a dozen pages, and I responded to questions from the lawyer, but there was an unsigned affidavit in the files; and one sentence was different than it was in the signed one. They made a Federal case out of this. You know how that goes. I was asked a bunch of questions; I gave answers, and then they typed them up and said, "Is this essentially what you said?" I read it and said, "Yes." When I got the final version, I signed it. It got typed a few times; they

DRIESSNACK

changed some phraseology and corrected errors, so I signed it.

I got three phone calls within 5 minutes after my nomination went to the Hill for the third star. I was selected for Comptroller; next thing I know the phone rings. Some gal on the Federal Times wanted to know whether I had perjured myself. She said, "Aren't you being investigated for perjury by the FBI?" I said, "I don't know what you are talking about." The second phone call came from some staffer on the Hill. I said, "Listen, I really don't know what you are talking about. I am going to close off this conversation because it is nonsense."

I got up from my chair and went up to see our general counsel. I said, "I just had two phone calls in 5 minutes, like it had been orchestrated. Talk about a conspiracy! This thing hit, and all of a sudden the papers have it already. You can't tell me that this wasn't planned and ready to go."

There was an article ready to go in the Federal Times. It got delayed for a week or two but finally was printed. It was horrible! I have been the subject of articles in Fortune magazine and what have you, and they all had to do with Ernie, about the fact that I was one of these bad guys and was a general officer; well, he accused me of being a bad guy when I was a lieutenant colonel. The fact that I had made general officer in the meantime made it seem like "the General" had conspired, and I was the only guy around on active duty. Everybody else was gone. Nixon was the President.

The general counsel called the FBI and wanted to know if they had a case. They said, "Yes, they did." "What is it on?" We found out the private citizen was Ernie Fitzgerald. This was the Civil Liberties Union, the ACLU, and Ernie. So they went through that investigation. Just as soon as the FBI investigation went through and got cleared up, then we had one by the Attorney General's office asked for by Proxmire [William]. It was really well orchestrated--one ended; the next one started.

Proxmire and Leahy [Senator Patrick J., VT] were holding up my confirmation. I could never get to see Proxmire. His staffer said, "The Senator just wants to give you the opportunity to clear your name once and for all." What they were doing was dragging the whole thing out again. Leahy told me something that I have never forgotten.

I went over with General Blanton [Lt Gen Charles C.], who was L&L at the time. I said [to Leahy], "You don't know me. I have never met you; never had occasion to talk to you on the committee"--he was on different committees. "You make these accusations against me without knowing me, without talking to me. I just don't understand it in this society. You have no basis for this." He said, "You may make a very good Comptroller. You probably will, but I have bigger things I'm looking at."

He was sponsoring whistle-blower legislation, and he wanted to make examples of the fact that if you hurt whistle-blowers or even give an appearance of hurting whistle-blowers, then something bad is going to happen to you because they want those whistle-blowers to come to

DRIESSNACK

Congress and air all of this stuff. I said, "But you have no proof." He said, "Your story is too pat." "Too pat? It is easy to tell the truth because you just repeat it. I don't have to remember lies. I don't have to remember myths. I just tell the true story. What do you mean, 'too pat'?" He said, "Just too pat." I said, "You don't have fact one to dispute that."

He said, "Let me tell you something. I was a district attorney before I became a Senator, and I have convicted a lot of guys on circumstantial evidence." I said, "That is a hell of a thing for a US Senator to say!"

A: What happened next?

D: They held it up for a couple of months, then they took a vote. Davey Jones went over and talked to Leahy. He had known him for some length of time. Proxmire put a big thing in the Congressional Record; essentially printed the article that was in the Federal Times. That is how they get out of this. I have thought about suing people many times for all the slander and defamation of character and what the kids went through when they were at school. People used to seek them out and say, "Is this your father?" Driessnack is not a common name. "Is your father a General?" They would say, "Yes." "Did you see this article? He is really a bad guy!" And it is all nonsense, fabricated stuff, innuendo.

I really empathized with Bjork [Judge Robert] as I listened to the stuff going through there. It makes no sense. They are working on a bigger agenda. John Marshall could have been nominated by President Reagan, and this Senate would

not have put him in because he was the third appointee, and they did not want him to get another appointee on this court. It was that kind of thing. Anyway, I went through that, and it really gave me lots of nightmares. I'm sued; I had never been sued.

A: Did you have to hire a lawyer?

D: No; Air Force. One thing I did do, I had a very bright young captain, Harvard Law School, Bruce Clark. He had clerked under some justice in New York. He was back with a New York law firm in private practice. He happened to be the one that they assigned to me. He was on active duty, and he went through all this with me. He said they should have pleaded the case on the Statute of Limitations and not fight all this stuff. In fact, when Judge Gesell threw it out, he said, "Statute of Limitations have expired," which was like 7 years, so he was just going to dismiss it, but that harassment went on until I left the service.

I even was looked at by the Judiciary Committee one time when I was the Assistant Vice Chief. I got a phone call one Christmas holiday period. The Judiciary Committee was going to investigate the way the Justice Department had looked at cases. They had at random picked some cases out. One of the cases "happened" to be the Fitzgerald Case. They wanted to talk to me about it. I said, "Sure, come on over." There were two staffers involved.

They came in, sat down, and said, "We are really surprised that you saw us." I said, "Are you really? I'm not surprised. Let me tell you something." One of the staffers

DRIESSNACK

was named Mullenhoff, the son of Clark Mullenhoff, who worked for Nixon when he told Fitzgerald about the Nixon tapes.

(END SIDE 2, TAPE 14)

D: I said, "The name of the game is 'get the General.' I'm the only one left that has been in this whole case. You guys haven't been able to touch me because you can't touch the truth. I don't know why you are over here, but I'm glad to tell you anything you want to know that you don't already know; but I'm sure you have read this a million times. You can't tell me that you randomly picked some stuff out of here on this case. You are after a particular thing. I happen to be the target of that. Now what is it you would like to talk about? I understand this process very well. Your father was the guy that wrote up all this stuff one time. He is still writing. You are telling me that this is just a random selection? I'm not buying that." The other guy said, "I told you it was a mistake to come here. You shouldn't have done this to him." He was almost apologetic; he wanted to leave.

In the interim, and at one point, they tried to get me to say I really went over to try and report a conflict of interest. He said, "That is natural to assume that you would report a conflict of interest." I did not, but they tried to get me to say that. As I looked at it later on, I'm sure they were trying to get me to say that so that would be a change in anything I said before; but that is not what I went over for at all. I went over to report these newspaper articles and said we needed to challenge that

stuff. The conflict of interest stuff is somebody else's fabrication, not mine.

A: Yes, because you just went over and said, "Have we not paid these people?"

D: Sure, and we had paid them, and I didn't want to have that accusation because I was directly involved with that. I felt a sense of responsibility on that thing. I thought somebody with stars ought to call up the paper and challenge them. Anyway, when Fitzgerald was hired back in the Air Force--Verne Orr hired him back--I went in and told Verne Orr my story. I said, "I don't know whether I can work with Ernie Fitzgerald; somebody that falsely accuses you, holds up two promotions, drags your family through all this stuff on a false basis, and has never said a word to me. I thought we were essentially pretty good friends at one time, except toward the end I didn't particularly care about the way he operated. Be that as it may, I have never done anything to harm Ernie."

A: Do you think Ernie Fitzgerald believed for a minute that you had tried to do something?

D: I think Ernie might have believed that, or they convinced him that I was part of that; or since I was "T-1," he thought I probably started something. Well, I'm sorry; I wasn't the guy that started that thing.

A: Have you ever seen him at all?



DRIESSNACK

D: Oh, yes. As the Assistant Vice Chief, I became the interface with the Secretariat in the Air Staff. I sat at his staff meetings. I told Verne Orr, "I can't really do that very well if I have my own problems. If you insist on hiring Ernie back in the Air Force, then I'm going to have to go make peace with Ernie Fitzgerald, and that is going to take some deep thought on my part as to whether I want to do that or not." He said to me that he had decided that he was going to get Ernie in because he wanted to clear this whole thing up. It turned out he got bit by it later on anyway.

Before he left, the Brooks Committee tore him up one side and down the other. Verne Orr said it was all Ernie's doing. He left here very bitter about that; in fact, he told me that he went over. He tried to do the right thing, and he couldn't do it. They wouldn't let him do the right thing. He hired Ernie back. I went in to him and said, "Okay, if this is what you are going to do and I have got to work in this environment, I'm not going to work in it in a belligerent way. I have got to somehow make peace with myself." Well, long ago I had made peace with myself.

I got up out of my chair one morning, and I went to Ernie's office. I said, "Ernie, welcome back to the Air Force. You and I are working in the same area, and there is no sense crossing swords. We might as well reinforce each other for the good of the whole Air Force."

Ernie was physically taken aback; I mean, he sort of reared back in his chair. I didn't know what he thought I was going to do when I walked in, but I just marched in; saw him in there, and I walked in. The secretary wasn't sure what I

was going to do, and Ernie wasn't sure what I was going to do. I walked up to him and offered him my hand, and he took it.

After that things kind of died down a little bit. I did do some things for him like work measurement systems that Ernie tried to get through OSD and couldn't because he was Ernie Fitzgerald. The other services were not going to cooperate with him, so I got that through. I went down and presented it as an Air Force thing; said the Air Force wanted to do this because the Air Staff wanted to do it. I took an Air Staff guy down and we got it through. Anyway, I did make my peace with Ernie.

During that Christmas visit that I had from these two staffers from the Justice Department, one of them commented on that. He said he was really surprised; said, "It was big of you to be able to do that." I said, "Well, I live in an organization called the United States Air Force, and I do whatever is necessary for the good of the Air Force. If that means sacrificing some of my own self-respect, I might have to do that. I can go so far but no further. While I can make that peace with him, I don't consider myself a bosom buddy of Ernie's, but I can work the problem."

Later on when I got out of the service and went to work with United Technologies, [old] Mullenhoff kept calling the office. "General Goes to Work With Defense Contractor," read his article, like I was the only one that ever did that. I wouldn't talk to him, and they wouldn't talk to him. As a Federal officer, I had to talk to some people; but as a private citizen, I didn't have to talk to anybody,

DRIESSNACK

so I didn't. Later on Mullenhoff was fired by the Washington Times. He had a byline, as I understand it; at least it was told to me by the Public Affairs person. He had a first-person article in the paper, and he was really giving a lecture down at a university in the Carolinas somewhere, so he wasn't even there. Some cub reporter on the Post or someplace picked him up on it.

A: A friend of mine used to be head of the Chicago Tribune office here in town. I remember Mullenhoff made an ass out of himself in some news conferences back in the late 1960s during the Nixon era. In fact, he even worked for the Nixon Administration for a short time. I remember my friend saying there was some question about Clark Mullenhoff's mental stability at that time. This would have been 1969. The only time I had ever known of Clark Mullenhoff used to be as the Des Moines Register Washington correspondent. Of course growing up in Iowa I would see his byline on a lot of stuff coming out of Washington. I can remember that one news conference that was televised. He was shouting and screaming at Nixon about something--on camera! It was live.

D: Did he win the Pulitzer Prize one time?

A: He may have; I really don't remember.

D: Someone told me that he did, and he was always trying to get that next one; that he was desperate. As he got older, he got more and more desperate.

A: And as he got older, he was almost a generation that was beyond its time.

D: Nothing came of the Justice Department investigation or the Justice Committee. They never got into anything, and I never heard anything more about it. It was just a fishing expedition. They came over, and the first thing they said was, "I'm surprised that you would let us talk to you."  
"Why wouldn't I?"

A: That tells you they were after something.

(END SIDE 1, TAPE 15--no side 2)

A: While you were in Budget, Comptroller, sitting over at Systems Command, and later when you were Assistant Vice, what was your observation of the contribution of the Office of Secretary of the Air Force; or did that change from issue to issue, person to person?

D: I think it depends on who those people are. As you mentioned earlier, where there is a technical Secretary like Seamans or Brown, then you will get more involved with the R&D; and they will get more involved with the actual weapon system development because they can understand the technical input.

When Hans Mark became the Secretary, he was clearly space oriented. His attention was given to that. Also, the Secretary reviews when the program offices come in to brief the Secretary. They go forward through the Air Staff and on up to the Secretariat, but he was always geared to the technical; didn't pay much attention to the cost side. It had to be for the Assistant Secretary for Financial

DRIESSNACK

Management and others to say, "We want to look at some of this other information."

Sometimes they looked at it off line. While the people were in the building, they asked them to come by and explain some of the financial data. Clearly he was first technically oriented and secondly space oriented. That is where he put a lot of his emphasis.

If you get somebody like Verne Orr who came out of a business environment, he is more interested in the business aspects than, say, Hans Mark would be and got involved with the performance measurement and some of the performance on the contract. He took more briefings along that line than Hans Mark did, so it just depends on the Secretary. Pete Aldridge, who is there now, who was the Under Secretary under Verne Orr, clearly is a space man also. He is an engineer out of Texas A&M, and he is interested in the technical aspects. When you get somebody like that, they leave the day-to-day operation of the Air Force to the Chief or to the Air Staff and don't get involved. It waxes and wanes.

- A: Historically the Secretariat started out as cabinet members. As the years progressed, I sometimes wonder what the offices of the Secretary of the Air Force, Army, and Navy perform.
- D: Clearly in the case of the Secretary of the Navy, Lehman changed the nature and the tenor of that whole office. He molded the Navy; got into the promotion systems and what have you. He was really involved with it. I think Verne Orr took a hand in that so far as providing guidance was

concerned. I think the fact that the Air Force has a lot more women, and they are in key jobs, is testimony to Verne Orr's thumb print. He was very much for that. I don't think he gave us quotas, but he wanted to make sure that we kept improving or increasing the percentage of women that were being considered for jobs. Between the time he came and the time he left, we have more than doubled the number of women in the Air Force.

A: In 1980 while you were still Comptroller, President Carter revealed the existence of the Stealth aircraft. This was said to have countered Reagan's criticism to cancel the B-1. Was the existence of the Stealth ready to be revealed at that time?

D: No. I think the blue-suit Air Force was very upset with all of it. Like with any black program, you want to bring the black program into fruition without the rest of the world knowing about it. That puts you many, many years ahead. If somebody even knows about the technology you are working on, then they know where to gear their source information. They know where to go and focus their interest. Anything like that helps the other side. Certainly the black part of the Air Force was upset, but the rest of the Air Force was really upset that it was revealed and then revealed by the Commander in Chief.

This has happened before. Johnson did this with the YF-12. It is a political kind of thing to say, "Hey, we are doing something new." You know they are not big enough to swallow it and keep it. They want to take credit for it, and it compromises our security in some respects. Certainly the

DRIESSNACK

intelligence gathering community from the other side really was helped a lot when they found out we had that. On the other hand, Truman really kept silent on the atom bomb.

A: I imagine all the satellites just moved over and clustered over Nellis [AFB NV].

D: They know where to go and where to pinpoint and where to concentrate and on what kind of information. That is a big help.

A: I am kind of drifting from the subject, but was classified information in closed-door sessions held well on Capital Hill?

D: Years ago I remember going to the Hill when Congressman Mahon was there as the Chairman of the Appropriations Committee and also the Defense Subcommittee. When we had a classified program, I went to see him alone to talk to him because we had a change. I asked him if there was anyone else that needed to be briefed. He said words to the effect of, "I don't think so, General. I think you and I are perfectly capable of handling this problem." I said, "If it is okay with you, Mr. Chairman, it is okay with me." It was that sort of one-on-one with the old-timers around that took that responsibility upon themselves.

Also then, the chairman of the committees could speak for the committee. The chairman or the leader of the party could sort of speak for the party. You don't have that today. You have 535 entrepreneurs up there. They are all working for themselves. The party has a hard time

collecting and delivering the party vote. When Addabbo came into that same committee to replace Mahon, he told me that he wanted the entire committee briefed on those kinds of subjects. He did not want to shoulder that responsibility by himself, and he thought it ought to be spread out more, so we got more and more members involved. The more you spread that information, the more it is likely to leak out, for whatever reason.

Somebody with the idea that "I know something that the rest doesn't know"; and in Washington power is information. If you have information that somebody else doesn't have, that's power. You see that all the time--somebody that is first to get to the press or first to announce or first to get it to the boss or what have you. It is terrible to watch, but it is just human nature.

A: Did you have any involvement in this Iranian rescue mission?

D: No.

A: What about when they brought all these Cuban refugees into Eglin in May 1980? Does this automatically cost the Air Force hundreds of thousands? How do you account for that money?

D: It comes out of our hide. It was O&M money that we had to use. It was money that we had to put up and accommodate them. One of the interesting things, when the Vietnamese refugees came in and we had to put up camps, was when our accounting and finance office got involved because these people came with gold. Their dollars or equivalent currency



DRIESSNACK

from overseas wasn't worth much, so they brought in gold, heirlooms, rings, jewelry, candle sticks, bowls, what have you--solid gold and precious stones. We set up, essentially, an assay office that actually weighed gold; and we gave them the American dollar equivalent of the value of the gold. We had that kind of a service for them.

A: Where did you get the gold dealers?

D: They came out of New York at that time.

A: There seems to be a lot of Vietnamese here in Vienna [VA].

D: Oh, yes. We have a lot of Orientals around the Washington area. There is a restaurant area in Rosslyn that is known as "Little Saigon." We have Koreans. My barber is a Korean woman right down here in Vienna. In fact, she lives down the street with her husband. She is married to a Department of Agriculture employee. He was a sergeant in the Army, and he now works for the Department of Agriculture.

A: They seem to be very stereotype, hard-working people.

D: Families get together; they buy a house and live together in one house. We have several Chinese restaurants; same way; very industrious.

A: I have a note here that an Air Force female posed for Playboy in the April 1980 issue. I never heard what happened to her.

D: I don't remember, either. I vaguely remember that because I was on the AAFES Board.

A: You were selected as Assistant Vice Chief. What is that job supposed to be?

D: I guess the closest I can come to defining that in civilian terms is like the chief administrative officer. The day-to-day running of the Air Force really falls to the Assistant Vice Chief. There are a couple of odd jobs that get involved with that. The entire administration comes through that office on the way to the Vice or to the Chief for signature.

During the time period that I was there--I have a plaque downstairs of the number--there were hundreds of thousands of letters and things that I signed off on for the Air Force. They had a Staff Summary Sheet that said: "One More Time, Sir." I signed that, and they put it in bronze and gave it to me at retirement. It falls to the lot of the Assistant Vice to actually sign; and I think in my time I probably signed 95 percent of the correspondence for the Air Force. The other things that the Chief should sign or be aware of he gets in a reading file. He peruses, but he doesn't go through and challenge and send back to the staff for redo and all that sort of stuff. Those are the things the Assistant Vice does.

When it goes up for front-office signature or if it is on its way to the Secretary or someplace like that, then the A/Vice would sign off for the Air Staff. If it was a major issue, the Chief would always get involved.

DRIESSNACK

A: How would you determine?

D: Judgment.

A: Just years of experience in the Air Force?

D: That's right. Just judgment will decide what he wants; or you send him too much stuff, and he says, "I really don't want to look at all this." You sort of get together with the Chief and the Vice in the beginning. In the beginning the Vice wants to see it all. Finally he says, "Hey, I don't have time for all this, or how about you handling this now." You get a working relationship.

Well, the two that I worked with were Mathis and O'Malley, the two Vice Chiefs. Both of them I had known for sometime and had a good rapport with. When we sat down with Mathis in the beginning, he wanted to see some specific things that he had as his own personal interests. He traveled quite a bit, and after a while he relegated most of that correspondence to me. I was also running the council meetings more and more because the Chief was tied up with the JCS, and the Vice was out of town or involved with something else.

A: What was the job of the Vice?

D: He is the Chief's alter ego. He really runs the council. The Vice chairs the council, and he runs the day-to-day Air Force. The A/Vice gets most of that paperwork.

- A: Do you recall any incidents where you made a judgment that came back to haunt you that should have gone to the Chief?
- D: No, I don't think so. I can't think of any incident that sticks out in my mind.
- A: There wouldn't be any "secrets" on what is going on. If the Chief wanted to know something, he would know such and such was happening.
- D: We met regularly. I used to go in and talk with the Chief in the evening. I would talk to him about the different things that were happening; things that he ought to be aware of. Quite a few times I would go in and talk to the Chief or the Vice and say, "Here is the problem. I have been involved with this. We have now reached this point." It might have been a legal issue or something. I would suggest to them that I go ahead and sign it, and then if there is any adjudication that has to be done, or somebody comes back with an appeal--this was particularly true if we were dealing with other general officers or the commands--then he could be the referee. If he made the decision now, there would be no recourse for anybody to go to except the Secretary, and we didn't want that. We wanted to keep it in the Air Staff so far as solving our problems were concerned. That tactic worked out very well.

The Chief always had a weekly meeting with the Secretary of Defense. Before he went downstairs that morning--either the evening before or that morning--I always went in and brought him up to speed on the major issues or the things that were happening that were worthy of reporting to the Secretary.

DRIESSNACK

A: Was there a noticeable change of climate at the Pentagon in January 1981 when the Reagan Administration came in?

D: A lot of upbeat. We felt that we were now going to get the support we needed. There was just a good feeling because we knew that this President supported the uniformed services. He had been in the Air Corps in World War II; had made a lot of recruiting tapes. It was just a general good feeling in the people that he brought in with him that came to us and essentially were supporters. Several of them came off the Hill; our FM, our R&D, and our Manpower and Reserve Affairs person came off the Hill. We had three Assistant Secretaries who were staffers on the Hill. The Army and Navy had similar kinds of things. They came over, and these were people that had supported defense. We felt generally upbeat on the whole thing.

Of course, in the beginning we also got a big supplemental. I was Comptroller when it first happened. I was called downstairs, and they said, "You are going to get a \$10 billion supplemental that the Administration wants to put in right now." In January when the President came in, we scurried around and put that together. I called my staff together and the budget folks and said, "We are going to get \$10 billion. I assume that is for Department of Defense, so I want to make sure that we have at least \$5 or \$6 billion in requirements so that if there is anything beyond our fair share that is lying around, I want that to come to the Air Force."

We put together \$6 or \$7 billion worth of priority items that we hadn't gotten for the last 4 years, lots of spare

parts and things that we were short of and things we didn't have to write lots of justification for. It was there, and it was known. The Congress and everybody knew it, and it kept getting cut out of the budget. We went down with that, and I remember Jack Quetsch [John R.] telling me--he is now the Deputy Comptroller at OSD; he was in Budget and Programs then--"Gee, I didn't make myself clear. There is \$10 billion for the Air Force."

I went back upstairs, and we very quickly put together another \$3 or \$4 billion worth of requirements. We had a whole list that we had to curry down to get down to the \$6 or \$7 billion that we went down with in the first place. I went back up, took that list, and went back downstairs with it, and we got a little over \$11 billion in the supplemental that first quarter that President Reagan was in office. It was Christmas in February and really put us ahead of the game. We were playing catch-up.

There was a kind of euphoria that took over then in everything that we did. We knew better things were coming as far as defense was concerned. The morale went up; the esprit went up; the recruiting went up; everything went up. Everything was on the plus side, and you felt good about being in uniform, and you knew you had a Commander in Chief who was very supportive.

A: Why were you selected for Assistant Vice Chief? Were you given a choice?

D: Well, the Chief asked me if I would come up front and be Vice. The previous Assistant Vice, who was Boswell,

DRIESSNACK

retired. I think the A/Vice came from different places. He could be the senior three-star on the Air Staff. They have come from outside. I remember Creech came from outside when he was the A/Vice. General Moore came from outside. Boswell was in Legislative Liaison. You really should look for somebody that understands the Air Staff, that is known by the Air Staff. You sort of work with the Secretariat, so I was known to the Secretary. I was there when they came in, and I had a broad background insofar as the matters that we were concerned with.

I had come out of Systems Command, and I had a combat tour in Korea. I had an operational tour in SAC. I had spent a lot of time in Systems Command, primarily a career in the R&D business. That got to be the real problem then in putting together the budgets, the programs, working the Congress, interfacing with the Secretariat. Those were all things that I had done.

But that is up to the Chief. The Chief figures he needs somebody that has the right temperament. You speak for the Chief. In dealing with the commands, the four-stars call up and want this or that, and you have to lay down the law and say, "Look, here is what the regs say, and the Chief wants it this way." Several times I have told four-stars that the Chief's policy is that we handle it this way. I had to be that interface, that intermediary. I said, "If you want to talk with him, you can call him," but they never did call him, not that I'm aware of.

A: A lot of times you will run into somebody who will say, "Well, 'the General' wants-----" How do you know if this guy

is speaking for the General? Sometimes the General doesn't even know what is going on.

D: That happens. There were several things; the little things get you. Who flies in the airplanes? When you are a four-star, you have blanket authority to take your wife in a military aircraft wherever you go. We had a ruling in the Air Force that we meticulously followed. That was, the four-stars had that privilege. If you were below that; if you were a commander somewhere and you were going out to bases, then on a once-a-year basis--on a regular but not overdone sort of thing; and how often do you go out that your wife has to go with you to visit a base--you could go visit your command with your wife along. We let people do that.

The rule was that they had to come in and ask permission, so they had to call me. There were several people that I sort of grew up with that wanted blanket permission. They would say, "Don't you trust me?" I said, "It is not a matter of trust, but we have had abuses. People would stop off at their home town on the way back to their base just to show off their airplane and what they were doing. Generals are human, too." Sure enough, that would get in the newspapers.

A: Then you had that one C-135 explode over here with the wives on board. What was that story?

D: That was a different kind of program, a way of getting the wives involved with their husband's career. If you are in SAC, you are on alert quite a bit of the time. You go TDY. I spent 4 years in SAC in fighters. Every year we went



DRIESSNACK

someplace for 90 days. With the preparation before and the cleanup after you got home, you were essentially out of pocket 5 months; so your wife is raising the kids herself during that period of time. We never went anywhere that we didn't come back and have a couple of divorces in the squadron.

It is very tough on the families, especially when you have young families. You just take off and leave the wife there. A lot of them were not used to that. They came from backgrounds where the father was home all the time, and they didn't have that kind of lifestyle. Some of them could cope with it and some couldn't.

We had a program in SAC where you could actually put the wives in a -135 and fly them and say, "This is your husband's job. This is what he does every day. This is not a lark up here flying. This is the kind of thing we have to go through. It is not a plush airliner. It is a big open-bodied airplane that carries a lot of fuel."

(END SIDE 1, TAPE 16)

D: The crews in MAC can also do that with large airplanes. They can take their wives on flights. We used to give rewards to airmen quite frequently. They would be the Airman of the Month, and you would take them on a flight. This was somebody on a ground crew who never got in the air crew, so you wanted to let him know what the Air Force and flying was really all about and what others were doing. It was a reward for those people. It was that involvement; getting the families involved, getting the people involved,

and letting them know what the mission was. That is quite different than going on an inspection tour or going on a visit someplace with a military airplane.

I had never had the Chief countermand anything that I said in those regards. I knew the four-stars; I knew who they were, and I had known them over the years. I think they respected that. I just said, "I have discussed it with the Chief, and this is what he wants to do." They let it go at that. Sometimes you make a judgment on a case and decide to let somebody go. I have done that.

For instance, Billy Minter [General] had a heart attack. His Vice, a three-star, was standing in for him, and he was the acting commander, so he went to the various functions. He had to fly to Bonn to attend a military affair that included the wives, so I let the Vice go with his wife. You make exceptions like that. Then other people call up and say, "Hey, so and so went." I said, "It was a whole different reason for him going," and you have to explain that to them. You didn't give out any blanket things.

The Air Force has always been very meticulous about that. We have honored that. We have never abused the use of airplanes for private use. I think we ought to be kind of proud of that. I have never known anybody that willfully abused that.

The other thing that the A/Vice does is interface with all of the air attaches in town. He accepts their credentials when they come to town, so you get involved with all of the embassies and those affairs; all that social business. Once

DRIESSNACK

a year we put on a big affair for all of the attaches in town. We used to do that on the top floor of the State Department. You are responsible for that. The Secretary and his wife are the host of that and the Chief and his wife, but the A/Vice takes care of arranging that sort of stuff.

A: Was there money available for all that?

D: Yes. We had money available for that. That was a one-time affair, but everybody came. That was the one affair that everybody wanted to come to. The thing that always impressed me about that--surprised me more than anything else--was that they all came. Everybody wanted to come to this function. It was the social event of the attache group in Washington because it was the host country's, and it was at that penthouse in the State Department, which has a beautiful overlook of the country. It was catered, and one thing we always had was ice cream with all sorts of toppings so you could make your own sundaes.

Well, the foreigners love American ice cream sundaes! Unbelievable! We could hardly have enough. It didn't make any difference what we had. We had shrimp, roast beef, lobster, clams on the half shell, oysters, and all sorts of good stuff. They would invariably clean out the ice cream. (Laughter) We were always amazed at that, but I have noticed that phenomenon in Europe when we have an open house. They all buy AAFES ice cream, American-made ice cream. We have a lot more butterfat content than they have. It is much creamier than any ice cream you can buy overseas, and they just love American ice cream.

The other job you have is military advisor to the Secretary General of the UN.

A: Did that amount to anything?

D: Years ago when that was set up, they tell me there were like 60 people up there.

A: General Kenney [George C.] was the first one. In fact, to digress a minute, he thought that was really going to develop into something. He truly thought the UN was going to form an Air Force. That is one accusation of why he disregarded SAC so much. He is accused of forgetting about SAC. How was it at your tenure?

D: It was sort of a pro-forma meeting. We met every 2 weeks at the UN, and the meetings took less than 10 minutes.

A: You physically had to go up there every 2 weeks?

D: We had an office up there with three people in it. There was an Air Force colonel. The Army, Navy, and Air Force have a representative. The senior service member gets to be the senior representative. I was the senior representative. When it was the US's turn to run the meetings, I ran the meetings as the senior rep. That fell to us every 5 months. There were five people in the Security Council who were permanent members: Russia, Britain, France, China, and the US. Those countries' military representatives were a part of this.

DRIESSNACK

When I ran the meetings, there was an agenda given that looked at the minutes of the last meeting, which were nothing except that previous agenda, and then to set the time of the next meeting. That was it. I suggested as a part of one of the meetings that I was at, the second or third meeting---- I realized this was ridiculous; I only went to the meetings that I ran. I didn't go to the other meetings because we had an Air Force colonel who went to those meetings and represented us. When I ran the meeting, I noticed that their senior people came. I assumed it was because I was the host and was probably the ranking officer; I was a three-star.

We also had a social function up there once a year. They all had a social function. When they had one, my wife and I went to that social function. We stayed overnight in New York, and if it was the Chinese, we went to the Chinese Consulate up there. China was just coming back into this country, and that evening with the Chinese was very interesting. They came to Washington later on to talk to me about some things, and we arranged some trips for them.

This was the only place where we could officially mingle with the Russians at that time. It was an unwritten rule that we did not socialize with the Russians. We didn't invite them to our parties; we didn't go to anything at the Russian Embassy. I never went to the Russian Embassy. This was a given; we did not socialize with them. Somewhere along the line that order had come out, and we did not socialize with them at all.

But at the UN this was one place where they were all considered as a higher plane of activity, and they were part of it. An interesting thing happened there. The parties, in the case of the Chinese, were at their Consulate. In the case of the others, we would have the catered parties right there at the UN. It was a social evening. They would bring people up from Washington and the local folks. It was not a very big thing, generally.

When we had ours, I remember the colonel, whose name was Allen--he is now retired and lives in Baltimore--had been the Air Attache in Prague, Czechoslovakia. He got roughed up quite a bit over there on one occasion; was beaten up. He came back and was assigned to that office.

He and I had a long session one time about the most effective way to run that office. I wanted to use the leverage of either the UN or my office back home because I interfaced with all of the attaches. I said, "I don't even know how they vote up here or do not know if anybody is interested. Are you interested in what we are doing in Washington?" I thought there ought to be some sort of an arrangement.

A couple of things happened. Ambassador Kirkpatrick [Jeane] was there at the time. Allen was very enamored of her and her capability. He thought she was just something else! I said that I would like to meet her. I did meet with Ken Adelman. He was one of the three Ambassadors we had up there. I met with Ken each time I went up. We had decided that we would, in fact, try and use the leverage. One of

DRIESSNACK

the things we did; a particular vote, as an example, had sort of brought this to light.

Peru voted against the US. It was the first time that we had an American--whether South, Central, or North American country--vote against the United States. Several times they have abstained, wouldn't vote; but Peru actually voted against us this time.

Well, at the same time back in Washington, the Vice Chief of Peru's Air Force asked our Chief if he could come for a visit to the States. He wanted to visit around and see Red Flag and some of our new equipment. The Chief was trying to wean him away--they had a lot of Russians in country; and this was the one American country that really went to the other side. I should know when that happened, but I can't tell you. It was way back and the result of the outgrowth of the Kennedy years where we didn't want to give them any equipment. We wanted to give them plow shares and stuff.

Sovereign countries say, "Hell, if you don't want to sell it to me, I'll go buy it from someone else." All of the Europeans went down there and sold billions of dollars worth of equipment. We not only lost the exports but influence as well.

A: And the influence in the country.

D: Absolutely. They used to always come here. When I went to Command and Staff and SOS, we had people from South America in my classes and groups. That IMET money sort of dried up, and we don't have that now. If you don't have that

interchange, you very rapidly lose influence in those countries. Well, the Russians have inundated Peru, and the Chief, Lew Allen, wanted to see whether we couldn't wean them away from that, so he asked me to set up this trip, which we did.

When I found out about the vote against us, I said to Adelman, "Here I am back in Washington arranging a trip for the Peruvian Vice Chief, and he is up here voting against us. That should not happen. I'm going back and raise hell with the Peruvian folks," which I did.

I came back, called the Attache in, and said, "Look, I just did you a favor. We are trying to do something with your country. We are trying to get better relations. I did you a favor by approving this trip. We have you escorts; you are going out to some places that you haven't seen in the last 10 or 15 years; and what do you do for me? You stab me in the back by voting against the United States at the UN." He looked shocked. I said, "Yes, that is what you did! At the same time I'm doing you and your country a favor, our Air Force is doing you a favor, and you are up there voting against us in your Embassy."

Well, they checked that out, and their man at the UN went home. Their excuse was that he was a junior diplomat. He did not follow the instructions from the Embassy or his home instructions, and he was not supposed to have done that and has now been sent home. So you can see where the leverage is. It might have happened, but I really don't believe that is what really happened; although it is the first time anybody ever did vote against us.



DRIESSNACK

A: But that was the form of an apology.

D: Absolutely; it was an apology. I talked to Adelman about that. He said, "We really ought to have a much closer relationship," and he was all for doing that. He wanted to get that going.

I went in to see Ambassador Kirkpatrick. I must say, I came home from that trip and told my wife, "I have never been so impressed with a woman as I was in that hour or so with her. She is a very articulate, very bright lady, and a very gracious person." We had a glass of sherry in her office, and we talked about a lot of things. There wasn't any subject we talked about that I felt she wasn't smarter than I was. I was in there trying to bring an idea to the table that we should have a closer relationship between what happens in Washington and what happens in the UN. Of course she was trying to do the same thing with the State Department, so she was receptive to that.

We talked about various incidents. We talked about this Peruvian thing. That afternoon I watched her in action at the UN. I went to watch the Security Council in action and stayed there for the day. She is very articulate on the floor. She makes good arguments. When sitting and talking as you and I are now, she is not only gracious but as bright as a penny.

A: It is sad that somebody like that is not known or comes across. She would go to meetings, and they would boo her off the stage.

D: She doesn't photograph well. She is a much nicer appearing person when you sit and talk with her. It is a little bit like Eleanor Roosevelt. She was an ugly duckling but bright as could be. When you talked to her one on one where you saw her face to face, it wasn't as bad as the pictures. I always felt Jeane Kirkpatrick's photography didn't do her justice. When you talk to her, she is a much more pleasant person than you can see in the photographs.

A: I saw her on TV yesterday. She is still wondering whether she should dip her toe into the Republican presidential race.

D: In addition to his normal administrative duties on a day-to-day basis, the A/Vice has those two functions which take some time. Actually it is a social sort of thing, but it is important in the sense that you represent the United States. You end up more times than not as the senior officer at these functions.

A: You had mentioned that at your second or third meeting you had observed that all you were doing was spending minutes there and then leaving. Did you attempt to change that?

D: I laid a proposition on the table that we, as a minimum, talk about what our countries were doing so that we could at least exchange some cultural information. I wouldn't mind telling them what our Air Force was doing--some of the developments--because a lot of these are written about anyway. You could read about them in Aviation Week or so forth. Or, if they would like to take a trip while they were here, I could arrange that. They were enthusiastic

DRIESSNACK

about that. Everybody nodded and said they would like to do that.

Right after the meeting, the two Russian colonels came up to me and said, "Of course you know we can't participate in this, and we can't provide you anything. Therefore, I'm sure you are not going to provide us with anything." They merely went along with the rhetoric at the meeting; but in private after the meeting they said they couldn't do anything. They would hope that I wouldn't pursue that. This was off the record at the meeting.

After the meeting was over, I said, "There are a few things I ought to talk to you about. We ought to get off the stereotyped agenda. We ought to do something substantive or what is the use of having this committee." It turned out they didn't want to do that. They wanted to keep it just like it was, so it stayed like it was.

Maybe they would have done something different had they had a field marshal there instead of a colonel. One of the reasons it had degenerated into that was because of Korea. Russia was absent when those decisions were made to support the UN forces, or the UN ought to go to Korea. The US was the bulk of the force, but we had others there also.

A: I think Communist China is still branded an aggressor by the UN.

D: The Russians avowed that would never happen again. They would not miss a meeting. They missed a meeting where that

vote was taken, and that would never happen again. They do go, even though it is a pro forma.

When we had our social functions up there in the few years that I was responsible for that, we went down to Fort Hamilton, which sits right at the end of Brooklyn, right under the Verrazano Bridge. It is one of the oldest forts in the country that is still active.

A: An old coast artillery?

D: Right. I believe Fort Wadsworth on the Staten Island side of the bridge is a mirror image, and they protected the Narrows coming into New York Harbor--those two forts. The cross fire could reach any ship that tried to come in through the Narrows. Hamilton has been kept by the Army, and I think it is a recruiting base. The old fort is there, and the buildings are there. It is a very small site, and it is cramped right in that point of Brooklyn.

We decided to have our social function at a military installation, and we picked Fort Hamilton. We could have gone out on old Mitchell Field or someplace on Long Island or a naval base. A lot of those places were no longer in use as they were 20 years before.

We went down there, and Colonel Dan Allen set that up. Well, we had a tremendous response from the people. They did a very good job for us. At the second meeting that we were there, my wife Gloria had an incident with one of the Russian wives who was going home soon.

## DRIESSNACK

There was a champagne fountain with strawberries, and it was very nicely done. She and Gloria were at the fountain at the same time getting a glass of champagne. Gloria said something to her to the effect that she looked sad. She said, "Well, I am going home." They had been here 7 years; 3 years in Washington and 4 years at the UN, or vice versa. They now had a teen-aged daughter, and the teen-aged daughter had spent 7 years in the United States. These were formative years.

They lived in a sort of compound up in New York. Even if you didn't get much outside the compound, or everything that you did was watched, there is so much in New York and Washington. I mean, the stores are full. The food is plentiful; the TV, the entertainment is full. Their cup runneth over, essentially, no matter where they turned. She said they were now going back, and she was very concerned about her teen-aged daughter and her ability to be able to cope with Russian life. She said, "I know what that is like, but she has never had the taste of that. Now all of a sudden in her adult years, she is going back and have that." Gloria said she really felt very sad about the whole thing.

The Russian women generally never talked at social functions. I have said hello to them, and they just nod. You try to draw them into a conversation, and they literally would not. They all had the same hairdo; came right out of a magazine. Whatever the western style was, that is what they wore, everyone of them, regardless of the color of hair or size of face. They just seemed to have that stereotype western hairdo that they were supposed to have. But this one took her glass and said, "I would like to drink to peace

between our two countries." Gloria said, "I can certainly drink to that," and they did.

She told me this afterwards. She always felt a certain sadness or empathy for this woman with a teen-aged daughter going back because we had teen-aged daughters; going back home and trying to live a life that she knew was going to be very, very austere.

A: That happened to this Ukrainian couple in Chicago, remember? Their 12-year-old son said, "I'm not going back." This past year I read a biography by the Polish Ambassador who defected to the US in 1981. He ran into that same situation with his two children. In essence, they had been raised outside of Poland, and as they were teen-agers, they went back to Poland, and it was a disaster. Here is their country not much out of World War II. That would be a shock.

D: That not only happens to the Iron Curtain countries, it happens to our Allies. The former Belgian Attache, Maj Gen Louie von Rafellgem, is here; he decided to retire here after his last tour. He was in the F-16 program also. I know the British Air and later the Defense Attache plans to stay here. There are a lot of them that want to stay here. A lot of them have gone home, and their children have stayed here in school. They try very hard to get them that green card so they can stay and work. They marry here. Oh, yes! Once they get a taste and go to our high schools or our colleges, they really don't want to go back home.

DRIESSNACK

A: Having spent a little time overseas, we just don't know how well we have it here in so many ways, not just in material things. Last spring when I was in Colorado Springs, I found out a lot of the Canadian generals that were with NORAD retired out there.

D: Absolutely. Their big break is that they don't have a language barrier. There is really not a cultural barrier. This is a much nicer place to live. There are lots more advantages. There is lots more available. They spent a large share of their career here, and their friends were US friends.

A: In talking about the Russians, would the Soviets come to your once-a-year bash at the State Department?

D: Yes. We invited everybody to that.

A: What about the other Iron Curtain countries like Poland and Hungary?

D: They came.

A: Did you go to their Embassy functions?

D: I don't believe I ever did, but we went to other functions where they were invited. Say the Italians would have a function; they invited all the attaches, and we would go.

A: Going back on another subject; could you control access to the Chief and the Vice Chief? What about the DCSs that came in?

D: The DCSs all had access to the Chief and to the Vice. The commanders all had access to the Chief and to the Vice.

A: They didn't have to call you and set an appointment for them?

D: No. They each had their own office. We had three offices in a row, all interconnected. They had their own appointment books. We never kept those. Access to the Chief was controlled by his front office. The one thing that we have in the Air Force--and I'm not sure the other services have it--is a Chief's mess that is reserved for the Chief and the DCSs, the three-stars, and for visiting commanders from out of town. If the commander of TAC or SAC or whoever was in town, they came in there and ate. It permitted them to have some private conversation without a lot of other folks around.

Quite frequently, I tried to use that hour with the Chief. No. 1, it gets the Chief out of his office and puts him in a relaxed mood for an hour. I tried to use that hour to bring up topics that we couldn't bring up at a staff meeting with everybody sitting there; or at a council meeting with all the strap-hangers who come to support.

That works two ways. When you have a council meeting or a presentation, you fill all the chairs; you let people come in. That is good by way of getting the maximum amount of people exposed to the Chief or to the decisions that are made and the rationale for the decisions.



DRIESSNACK

I always thought that was important, but I used to caution them frequently about something not getting out of a meeting that we had; to either show up in the paper or come back as a question from the Hill, from OSD, or for somebody to say, "I understand at your council meeting so and so----"

I used to constantly caution these people, "What you talk about here stays here. These are private deliberations. When something gets out of this room, then we are going to have to clear the back benches. We don't want to do that because we want to make sure everybody in the Air Staff is privy to what is going on and why the decision was made as they are working the problem, and you really should know why we are doing this."

At the luncheon each day, you could have access to the Chief or to the Vice and bring up topics that we just wanted to discuss among the DCSs, and we did that. Occasionally we would have a TV tape brought in to look at when something was done or happened out in the field.

(END SIDE 2, TAPE 16)

D: When I was DCS, the Comptroller, I ate there. I thought we could use that forum for more things. I used to try and bring up subjects. The Vice or somebody would say, "Why don't you come by and talk to me," or "Why don't you two guys get together and work that out." When I became the A/Vice, I tried to use that forum, and I would raise the subject. I thought the DCSs and the Chief ought to exchange more.

The Chief's job is kind of a lonely job. There are a lot of people that want access to him, but they want access to him for their own problems. His front office tries to keep that down to a minimum, and then must concern himself with JCS problems. There is lots going on in the Air Force, and this gives a nice hour every day to sit and chat about what the Chief should be aware of, put his thumb print on, or at least have access to it rather than through some official paper coming up to him.

I used to use that to schedule meetings. I would say, "I'm going to raise these two topics today at lunch, and you ought to be there." I would call the DCSs. Maybe it was on spare parts, personnel actions, or something like that. They would say, "Why are you doing that?" I would say, "Well, we got a paper in, and there is some disagreement on it." Rather than gin this around in the Air Staff, I would say, "Let's just get together and talk about it."

In the several years that I was the A/Vice, I used that as a forum, and we discussed a lot of issues like that. I used it as a sounding board and got the Chief's input, and all the DCSs heard the Chief's input right there. It was not like, "I talked to the Chief," and someone would say, "Well, I'm going to talk to the Chief." We were all there.

A: How large was this dining room?

D: We sat around one big table seating about 12. The Chief on one side always had the center seat, and the Vice always had the center seat on the other side. The A/Vice always sat to

DRIESSNACK

the right of the Vice Chief. Everybody else sat anywhere they wanted to.

A: After a while anything done becomes institutionalized. Has this become kind of a "thing" to do at noon now?

D: Well, they do it. It is still there, but I tried to institutionalize it as much as I could. I remember when I was the Budget Director, the DCSS would have a meeting at lunch, and occasionally the Comptroller would go jog or something like that and miss them. A lot of the people took that time to jog or something and didn't eat lunch.

I used to try and convince them to come in and have a bowl of soup or a salad; that it is a time they ought to get; sort of free time, relaxed time, when they can sit and talk with the Chief; or we ought to talk amongst ourselves about things that we can't talk about with a whole bunch of people around.

It was hard to get an appointment during the day because everybody's calendar was full. You couldn't call them up and say, "Come up and have a cup of coffee." Guys' schedules were just loaded! They had 12 or 15 hours worth of work they had to get through and work their problems. That was one thing that we did that worked very well, I thought.

A: What kind of hours were you working as the A/Vice?

D: I had a car pool, and the car pool would leave about 6:15. We would get into the Pentagon in 15-20 minutes. I lived at

Bolling. I would leave the Pentagon dependent on that evening's social functions, which were at 7:00 to 7:30 to 8:00; but it was easily a 12-hour day every day. Sunday I didn't go in, but I did quite frequently on Saturday morning.

The other thing that I got involved with as the A/Vice was the attaches. They were serviced by our organization, an international group, CVAI, which was part of the Vice's office. They handled the protocol, the foreign social functions; and when the Chief traveled overseas, they put together for him a fact book about all the countries he was going to and all those sorts of things. They were the interface with the Air Staff on technology transfer and FMS cases and things like that.

People that had been there before me might not have been interested in some of that stuff, but technology transfer interested me, probably because of my own background and the long time I had spent in Systems Command. I got involved with several cases, and then I questioned why I didn't get involved with all of these cases. They said, "Well, only the controversial ones." I said, "Who determines whether they are controversial?" These were key decisions; they were Air Force input going to OSD.

If you think about the times we were in, Richard Perle, who was sort of paranoid about technology transfer and some of the folks that were down on the third floor--Clay and a lot of these folks--had different ideas about how well we should cooperate and what we should give allies and so forth.

DRIESSNACK

My own feeling was that we could sell hardware but never give away a process. I wouldn't give a process to a friend. You don't do it here to a local industry, so why should we give it to a country who is going to turn around and be a competitor? On the other hand, there was no reason we shouldn't sell them the hardware. I still feel that way, having looked back at it and having worked in other mediums. I feel that is a good policy.

The papers that I saw were never touched by a general officer. Rarely did I see a case where a general officer had signed off on that, so the decisions were being made by the iron majors and the colonels in the Pentagon, so to speak. I thought we ought to at least have a general officer's signature on them.

I got all the DCSs at the two-star level together, and said, "When this gets signed off by R&D or by Programs or by Ops or whomever, I want to see a general officer's signature on the Staff Summary Sheet. This is not something we are going to leave to the guys that don't have the experience or the responsibility for making these decisions. When it comes up here, that is what I want to see on there. I will determine whether it's going to be a problem area down on the third floor. If it is something that we want to fall on our sword over, then I will represent the Air Force. I will go downstairs," and I did that on two or three occasions. I went down, and we fought the problem on what we wanted to transfer or not transfer.

There were several cases that came over that were very controversial. The Swedes wanted the 404 engine. We were

not too sure we ought to give the Swedes anything. That is hard to realize because they are neutral and are friends, but there was a case where we sold them an IBM computer. They turned around and sold that to the Russians, theoretically for traffic control for the Olympics, which we didn't attend because Carter pulled out.

When you think about traffic control, that computer became the centerpiece of their air defense network. They don't have anywhere near the computer smarts that we do or the capacity or capability, so they steal whatever they can from the West. Computers got to be a big thing. The Swedes kept an eye on this.

We had a lieutenant colonel who was in CVAI at the time. Let me tell you, he was after this like a pit bulldog. He very tenaciously hung on to this and followed it through all of the Government agencies. Malmberg, I think, was the name of the Swedish family that was in everything, every industry there is over there. They either own it, partially own it, are in it with the government, or what have you; but I had everybody, including their equivalent of Department of Commerce or Interior come over and see me from Sweden; the Attache, the Ambassador, everybody, because we were holding up transfer of technology. They wanted our 404 engine, which was really a Navy-developed engine, for their new fighter. We said, "Where is it going to go? Are you going to sell it?"

We make everybody sign Third Country agreements so that they don't sell to another country without our okay. They clearly violated this in the case of the computer. They

DRIESSNACK

denied it for months. After we finally showed them in black and white what had happened, then there were some--not necessarily confessions--but "They really were not aware of that," and what have you; a lot of back-peddling but no more flat denials.

It was those kind of things that we got involved with. There was an interesting case one time when we sold F-16s and AIM-9 missiles to the Pakistanis. The State Department had promised them some things; promised Zia [President Mohammad] that he could have F-16s, and they promised them within a year. Well, the lead time on the airplanes was 2 or 3 years, and there was no way to get the airplanes at that time.

We sat down with the FMS people that were in Programs; General Sechler [Brig Gen Hank] at the time, trying to figure out how we make this promise come true. In the first place, someone made a promise without understanding the system at all, and they came back and just presented us the problem.

We went to the EPG [European Participating Governments] countries, those that were producing airplane parts overseas, on their production schedule. We knew that they wanted to stretch the line, but they were not ready to make another buy yet. They were either short of money or their parliaments had not yet met or they were not ready to make the commitment. They knew from a country standpoint, from a defense standpoint, and from an economic standpoint that they wanted to keep that line open.

We took the first six FMS airplanes that came off the line and delivered them to Pakistan. We replaced those with an added buy later on. They came in on the end of the line, the Belgians and the Dutch, so that worked out very well. It worked out good for them economically and kind of made us heroes to the Pakis and got us out of a jam.

It was those kinds of problems that you had to work. None of that ever gets to the Chief or the Secretary. You work that with the Air Staff and directly with the people involved. I always felt the relationships set up with these countries were very important to the United States. To the extent that we could do them favors that fit in with our own objectives, we should do that. We should maximize that. I had lots of cards that I could have called in at one point or another, saying, "Hey, we did this kind of favor."

A: Was this kind of symptomatic that the State Department would go off on its own?

D: Yes, because they are working a political arena. We talked to them after that and said, "How can you make those kinds of promises? We don't order our own airplanes in that period of time. We don't get airplanes the year we order them; and the rest of our Allies are standing in line waiting for these."

A: What about disarmament talks and SALT [Strategic Arms Limitation Talks] talks? How much contact would there be with the Air Force per se, or was that all JCS's contact?

D: That operates in the JCS arena.



DRIESSNACK

A: What was your working relationship with the Office of Chief Master Sergeant of the Air Force?

D: We worked together but not that much. On a personal basis you would be aware of the issues that he was working on and the visits. He traveled an awful lot with the Chief and the Vice, and he traveled by himself. His role was to keep the pulse on what was happening with the enlisted force.

A: What did you feel about that office?

D: I thought it was pretty useful. Each of those Chiefs has his own unique style and interests, so he operates in a different way. [Studying chart]

A: A good observation would be that the Air Force did not initially want that, and it was only created on "threat" from Congress. In fact, Mendel Rivers [Congressman] said he would statutorily create that billet. Under that threat, the Air Force created it by regulation or however they do it. I think it came into being in the late 1960s, so it had been in existence about 14 years. I was wondering if it had become accepted, as apparently it was.

D: I think so.

A: Did you ever deal with the Chief Master Sergeant, or was he dealing more with the Chief?

D: I have dealt with him. It was Chief McCoy [James M.].

A: We have interviewed a few Chiefs. Once again, it becomes clear that the effectiveness of that office is really based on how well the relationship can be developed with the Chief of Staff of the Air Force. Most of those jobs are like that.

How did you view the Military Assistants to the Secretary of the Air Force? For example, there would be Air Force officers being Military Assistants to the Secretary of Defense. Would you deal with those guys at all as Air Force officers; or if you dealt with them, would it be "them and us" type situations?

D: I always felt if a guy was wearing an Air Force uniform, he was part of the Air Force. Ironically enough, the assistant to Weinberger was Carl Smith [Lt Gen], who is now the Assistant Vice Chief. He followed a couple of steps later. He is the third one behind me, but he ended up as the Assistant Vice Chief.

Since I'm here in town, I have gone over to see each of the Assistant Vice Chiefs that were in there, or they have called me. Now we are a little further removed, but I have gone in to talk to them about some things. The first two would call me and say, "Did you set up a policy for this?" or "Somebody is saying such and so." I happened to be handy, so I went over and chatted with them on different things.

I did go over and talk with Carl when he came in. I spent a few hours with him on what I did when I was there and some of the concerns I had and just a little fatherly advice. As

DRIESSNACK

far as I could see, it was all well received. Reed [General Robert H.] was there, and he is now over in Europe; got his fourth star. I also dealt with Carl as Weinberger's exec. He was a Military Assistant there.

A: Did you deal with the Secretary of Defense much?

D: No. The Chief did most of that. Occasionally I would go to a weekly meeting or a special meeting they had where they asked the other services to attend because the Chief or the Vice was gone. If I had to get some clarification or some background or some additional information, I would call General Smith.

A: What was the difference in working for General Gabriel and General Allen?

D: For one thing, they had different backgrounds. Gabriel is all operations, and Allen is an intellectual. He has a Ph.D. in nuclear physics, and he had a long history in the intelligence community. He ran the establishment, NSA [National Security Agency] up at Fort Meade [MD]. He tried to get us more involved with understanding the importance of that. I remember going up there one time and having lunch with Bobby Inman, who had taken over from Allen. I spent a morning there. He gave me a briefing when I came in; I toured the place looking at what they were doing; and then I had lunch with Bobby. I must say I really got an eye-opener on the effectiveness of that place and what they were involved with. He was more security conscious than anybody I have ever been around.

I remember talking with him on one occasion and saying that there were some things happening in those days in the Stealth world that I felt more people, the DCSs, needed to be aware of because I was taking action to make things happen that were really the purview of some of the DCSs. I always felt that they should have been doing that job and should be aware of what was going on and be brought into it; then I would not have had to get involved. It would have been routinely handled. I always felt the Air Force had enough integrity to handle that kind of stuff without worrying about secrets getting out or being exposed. The Chief was very selective on where information got to and how it went out.

One of the things that I asked to get done was to make a review of the black programs and the white programs that I felt were duplicative or overlapping. Of course neither side knew that. You had to have access to both. As the Comptroller, I had to have access because I never gave anybody money without understanding where it went. It is like the Golden Rule: If you have the gold, you make the rules.

When I got to be the A/Vice, I already had those tickets. Of course the Vice and the Chief did, too. I went in and convinced Mathis that he ought to look at those side by side. We started that just before Mathis left.

When O'Malley came in as the Vice, he agreed with that. He came out of Operations and JCS with a background in SAC. He said, "I agree with that." In the first review that we had with O'Malley, we cancelled a major black program because

DRIESSNACK

the white program was further ahead than the black program. It started earlier, and there was something being done in the black world that had come in, like a lot of those things had come in, on either a requirement or an unsolicited proposal, but somebody else was already working the problem.

They could have been at different ends of the spectrum. By the time you have solved some of the technical problems, they get drawn closer and closer to the same thing, so the solutions are the same. We ended up with a major cancellation. We said that review paid for itself many, many times without getting too far afield.

Gabriel was a lot more relaxed, I think, in the job. He was more of a social animal than Lew Allen was; although Lew Allen, one-on-one or in his quarters, was a tremendous social individual. He seemed to give the appearance of having a hard time making conversation and small talk. I guess he didn't have time for a lot of that. Actually, he was a brilliant person. From a technical standpoint nothing ever came by that he either didn't grasp or ask the right questions in order to get to the bottom of the subject. I was always surprised that he was able to grasp the operational problems as well as he did.

Early in his career he was operational. He was in B-36s in SAC. But I thought both of them were very competent. Both of them used the staffs pretty much. Lew Allen used the staff by the book more than anybody that I know. If it was Personnel's problem, then Personnel had the say-so. If it was a TAC problem, he listened to TAC. If it was a SAC problem, he listened to SAC; whereas generally a Chief would

have his own people that he would talk to and get some input from.

A: How was the Chief of Staff of the Air Force chosen? In a practical sense, how does that guy arrive in that position?

D: I have never selected one, so it is hard for me to say. (Laughter) Basically, the Secretary has a lot to say. It depends on whether the Secretary is strong with the White House and with OSD. Verne Orr was very close to the White House, so he would be somebody that would have had a big say-so in the selection of Charlie Gabriel, as an example. The outgoing Chief, of course, has an input; and then the Secretary has an input. Of course you have got to be accepted by the Hill. In OSD I think the Secretary of Defense, depending on who he is, or somebody at that level would have a real input.

A: How do these names work to the top? I'm the Secretary of the Air Force, and I need a new Chief of Staff. Do I "start asking around" or look at the major command commanders?

D: In the first place, in the case of the Air Force there are 12 four-stars. You are not going to make a new four-star the Chief, so you take a look at those you have. If you have been the Secretary for a year or two, you have already met them and know them. You meet with them on a regular basis. As a minimum, there is a Corona every quarter, so you meet with all of them four times a year. Some of them you meet with more often. You go out and visit them at their base if you are the right kind of Secretary. Orr did that; he went around. In fact, that was some advice I gave

DRIESSNACK

him when he first came in. I said, "You need to get out and do that."

Hans Mark did not do that. If there was a technical problem someplace, he would be there. If there was a missile shot at Vandenberg, he would be there. He was interested in that kind of thing. In fact, he never flew in our airplanes. He took the Red Eye back from California. He had this fetish about some things.

A: He thought flying military was a taxpayer's burden?

D: Yes, he thought so. I said, "You are the Secretary of the Air Force. What do you think that looks like when you drive in the front gate in a car like you are afraid to fly with us. We have the best pilots in the world. You don't have to ride back on the Red Eye. That is ridiculous. We are flying the Secretary of the Army around, and we provide the Congress with transportation all around the world; and our own Secretary won't fly in our airplanes."

When Verne Orr came in, I pointed that out to him. I said, "If there is one thing you do, please fly United States Air Force airplanes, and take your wife with you. People like to see the Secretary. They like dignitaries to come to their base. Once in a lifetime they will see the Secretary, and it is nice to have had that experience. It is like seeing the President or the King. It is somebody that runs their organization."

A: That is penny wise and pound foolish.

D: Absolutely. Orr did that, and he carried it even further. Every Christmas he went out someplace, and they would go to the Northern Tier. He would go to Thule [AB Greenland], Alaska, and those places to spend Christmas with the folks.

A: The guy that followed Verne Orr was only in office a month or a week. What was that all about? Did he misjudge the job?

D: I guess he had a personal problem, and I think it was a wife's health problem.

A: Verne Orr was in that job about 6 years.

D: Yes; longer than any other Secretary, I believe. He was a grand old man.

A: I heard him speak once at Maxwell. He was making a farewell tour of the Air Force. This was right before he retired, and he must have known he was going to retire. In fact, that is the day he made the speech that General Richards' career was not ending at Air University like it did for practically everybody else. If he had anything to say, it was not going to be a terminal assignment. Richards went on to be Deputy Commander-in-Chief of EUCOM.

D: He took a great interest in the educational institutions because he had been a part of that. He was an academician and was interested in people that went to ROTC, people that went to Air University, AFIT, places like that. He took a great interest in the Academy. Things were happening out there. He was very interested in the selection of people.



DRIESSNACK

A: Right before you became A/Vice, there was this Christopher Cook incident where this captain from a missile site was throwing information across the fence at the Russian Embassy.

(END SIDE 1, TAPE 17)

D: I wasn't involved with that. I remember the incident. There was lots of consternation because of the way that was handled.

A: Teagarden [Brig Gen C. Claude] was forced to retire over that.

D: Essentially. And Teagarden was a pretty good guy. As I recall, when I had my legal problem with that lawsuit with Fitzgerald, Teagarden was one of the people that was running the Washington JAG office at the time as a colonel. I think he was involved with some of that.

A: A good friend of mine at Maxwell was the AU/JAG when he retired and stayed in the area. He said there was no doubt in his mind that Teagarden would have been the next TJAG. He was headed for that.

When the air traffic controllers went on strike in 1981 and they pulled in a bunch of blue-suiters, was that one of the things you would have done?

D: I worked that. A large part of that was done by our operations people. We went out and assigned people, actually volunteers, and made bodies available to FAA. We

tried to pick up from all the commands those that had the right kind of capabilities, whether it was traffic control or tower control. We had a lot of our experience in the towers, operating the air base function itself. The en route traffic control was handled by FAA anyway. However, there are some places where the military has responsibility for the area's traffic control. We have people that have that sort of expertise.

They went off to do their job, and they did it very well. In fact, I got thank-you phone calls from people. Airline pilots, for the first time, were having a traffic controller say, "Have a good day, Sir.; Yes, Sir; No, Sir; Stand by, Sir." They said it was just a breath of fresh air to have that. While they were few in numbers, they were very effective in what they were able to do. They were quick learners.

Our concern was that we were going to lose them because the pay scale the FAA could offer them and what we offered them and what they were actually being paid was pretty widespread. Where you had a sergeant, a four- or five-striper, his pay was pretty good. He was working on a retirement kind of thing, although he could carry that over into civil service.

We tried to do some things like give them weekends or have their wives move with them or pay for having their wives visit wherever they went and different things like that. We tried to get bonuses in there. Personnel worked hard to make sure that we wouldn't lose these folks and that they

DRIESSNACK

would come back home again. As it turned out, most of them did come back to the Air Force.

A: Did this impact in the operational readiness or training of the Air Force when these guys were gone?

D: I have always said that from an operational standpoint the Air Force can make do with anything, and we just lived with it. People worked longer hours back home in the tower, and we had other people that were OJT'ing coming along, so we just sped that process up.

A: You mentioned yesterday that there has never been a mission assigned to the Air Force that it hasn't met. That reminded me so much of when I interviewed Maj Gen John Sessums several years ago. He was an R&D man. He was in ARDC when it first showed up at Baltimore back in the 1950s. He was talking about R&D hardware. He said, "There isn't anything we can't make if you will give us enough time and money." He was referencing space ships, rockets, or anything. He had me convinced. As the years go by, I'm still convinced.

For example, I have heard that in the 1960s McNamara cancelled a number of R&D programs, and had they been pursued, we would be so far ahead of the Russians in military weapons and space mechanisms that there would be no contest today. Of course there is no way to really prove that, either.

Another problem, in August 1981 he had to ground all the F-16s because of flight control systems. Would that have

impacted on your office, or would that have been a TAC problem?

D: Well, it is obviously a TAC problem, and Systems Command also gets involved. We are kept apprised of that, and obviously Operations is apprised, so it becomes a council item. It is something that is brought up at the meetings, and everybody works the problem. If they needed emergency money to do something, or if somebody else needs to deploy to take their place, then everybody on the council of the Air Staff coordinates and says, "Okay, here is the solution and what all we have to do--near time, far time, etc.--until we get it resolved."

A: Another subject: In 1981 was the Air Force involved with Central America, Nicaragua, the Sandinistas and Contras? I'm not talking about our shenanigans but setting up bases in Honduras and stuff like that. Would your office have been involved in something like that?

D: No. I don't remember getting involved with any of that. There is a meeting that goes on with the South and Central Americans every year. It is called Conhefamer (phonetic). It meets every year. One year it meets somewhere in the Americas, and the alternate year it meets in the United States. We host it every other time. The Chief goes to that meeting. I remember only one year the Vice went. When Lew Allen was there, he usually went. I think Lew Allen spoke some Spanish, and he enjoyed those meetings.

The one year we went was the year before; it was right at the time of the Argentine/British fight for the Falkland

DRIESSNACK

Islands. That was an interesting time because the impression I got from the Chief was that the Chief of the Air Force in Argentina didn't think that was a very smart move to make, now all of those folks have really been drummed out.

A: Of course the Air Force was the only one who was effective in the whole operation against the British.

D: And that was really quite an operation because they were at the very end of their fuel cycle in every one of those trips. Had they been able to spend, say, 15 minutes more in the area, the Brits would have had one hell of a time. We did get involved with setting up for the Brit's landing rights on the way down there and providing some tanker support or providing places for their tankers to land.

The Argentines were really upset about that. The Argentine Attache here at the time was Brig Gen Peña. He and I had gotten to be very good friends. Besides the normal social things, we had gone to lunch together and had a series of discussions. He learned to fly in the United States like so many other folks from South America. He wore American wings and was very proud of that fact. His concern was, as a result of this, for the young pilots in South America.

He said, "Old people like me will always have a soft spot for the United States and a certain affiliation and respect and desire to have a close relationship; but the young people don't feel that way now. Our young pilots learn to fly at home or elsewhere. They don't come to the United States, and the fact that we [the US] are supporting a

European country against the [South] American country, they will not forget." He is afraid that rift will build between us. He said, "I am very concerned about the future of this relationship," because we had a very good airman-to-airman relationship with most of the countries.

During the Falkland War, Operations had the Brits come in and give us an operational briefing on what they were doing. Jack Chain [General John T., Jr.] was the XO at that time. He was DCS/Operations. I said, "Jack, I have asked General Peña to come over and explain to me what they are doing and his side of the war. Would you like to hear that?" He said, "Heck, yes!" I don't think they had ever thought about it. So we had the Argentines come in and brief us, and we had a large group of the operations people who wanted to listen to that. They came in with their official briefings and their charts, and it was a very interesting briefing.

Here we were in Washington watching this battle take place, and we were getting briefings on both sides. Both the Attaches I considered to be very personal friends--even to this day; and to watch two friends go at it when the policy was to help one and not the other was a little touchy; very tough.

A: Were you close to the Israeli Air Attache?

D: Yes, I knew the Israelis very well.

A: Didn't they have an Air Attache murdered here in the district?

DRIESSNACK

D: That was before I was there.

A: That was 10 years ago.

D: As a result of that, they are very, very security conscious. When you go to a social function at the Israelis'--and I was here when their Prime Minister came over, and we were invited to a dinner; or the head of the Air Force comes over, and you get invited to a dinner--if it is at the Ambassador's quarters or at the Embassy, it is under full Israeli guard, besides having the district police out on the streets. You don't get on their list into the house unless they actually see your name and you have some identification, then they check you off the list. Those people are all armed.

A: You can't blame them.

D: No, you can't. It was because of that [murder]. The whole place is fully lit. All around the house are flood lights; very, very security conscious.

A: Down at Maxwell they make sure no Israeli gets in a seminar where there is an Arab, Jordanian, or someone like that. We have this old idea that everybody can get along. That isn't necessarily true.

D: That is a family feud. If you go back to biblical times, it is really a family feud, and that is the worst kind of thing to step in the middle of. I will tell you an interesting story about the Israelis.

We were trying to sell AWACS to the Saudis, and that was not too long ago. The Jewish lobby here was working against that. We were having a hard time on the Hill like we do every time we want to sell something that the Israelis don't want to one of the Arab neighbors. The Saudis are very quiet about things. They don't like a lot of publicity when you help them. They are helping us now by having access to places, and actually when their AWACSS are airborne, they provide intelligence information for us. All of that goes on, but they don't advertise it, whereas other people would make a big thing out of it. They don't have a big lobby here. We don't have a lot of Saudis living in this country.

On the other hand, the Israelis were against the AWACS sale, and I'm not quite sure why. For one thing, you could speculate that it oversees the whole area, and they could look right into the heart of Israel any time they were airborne and see what was going on. It was the radar capability that nobody else had in that part of the world, and they didn't want the Saudis to have it.

Menachom Ani was the Air Attache. He went back over and became head of the Lavi fighter program, by the way. I called Menachom one time and said, "One of our people that is at language school who is going to Israel as the Defense Attache came in to see me. Over the weekend he and his wife went to synagogue."

He was trying to immerse himself into the Jewish culture. He and his wife were both at language school here learning Hebrew. They would go to the synagogue on Saturday and listen, something they did on their own. He told me that



DRIESSNACK

from the "pulpit" the rabbi talked 20 minutes on anti-AWACS and then 20 minutes on the Old Testament.

I said to Menachom Ani, "There is a big lobby afoot here. You are out talking to B'nai B'rith--that we know--and even your rabbis in the synagogues are talking anti-AWACS to their people."

He said something to me like, "That's not true." I said, "Look, I just had an Attache in school come to tell me he had been to the synagogue Saturday, and this is what happened. If you want me to give you the name of the synagogue and the rabbi, I can do that for you; but that is what happened. Do you realize what you are doing? All of us that are currently in uniform, the current leadership in this country and the Air Force, will never let Israel go down the tubes. I mean, here is a democracy in the Middle East, and we would never let that disappear. The actions that we have taken in this country over the years are proof positive of that."

"There are a bunch of captains and majors that are going to be the future leaders of the Air Force and future leaders in this country that are sitting and watching the tail wag the dog. In their opinion, we have this little Mid-East country essentially dictating what we can do. We have other interests like oil, not only for us but for the rest of the world, that comes out of the Gulf; and some of the purest oil comes out of Saudi Arabia. We have a concern because they are moderate Arabs, and we want to make sure they stay moderate Arabs and that we have a continuing influence there. You are working against that.

"It would be different if we were going to sell them B-1 bombers or something like that, but we are talking about an AWACS. We are talking about something that doesn't deliver any weapon at all. It is an airborne radar. It is a defensive sort of thing and certainly nothing from a military standpoint that you should be against except for the fact that it is going to the Saudis and you can't afford it or can't have it or don't want it."

"Now just think about what you are doing for the future. You are involving some young action officers on the Air Staff and OSD that have been trying to get this through. Every time they turn around they run smack up against the Jewish lobby."

"They are forming opinions. They talk to me, and the conversations are reported to me about the sort of opinion they are forming about Israel. They don't have any of the background that you and I have. World War II is so remote it is in the history books as far as they are concerned. The only thing they see is what is happening today, and they don't like it. How do you intend to handle that?" I hear the silence. I said, "Menachom, are you still there?" He said, "Yes, I'm here. You have given me something to think about that I have never thought about before."

Well, that week Begin [Menachem] came over, who was then the Prime Minister, and he turned them off. Now what influence that conversation had with him or the input--because they all talk--but the Saudis did get the [AWACS]. By the skin of our teeth we won the vote on the Hill. Of course now it is of good use to us. There are several incidents like that

DRIESSNACK

that I got involved with as the A/Vice that I, in fact, have never told anybody. I think I recall telling the Chief or the Vice about the conversation, but I really never passed that on to anybody.

A: You had mentioned this colonel Attache, the guy studying the language.

D: He was a prisoner of war in Vietnam. It was one of those unfortunates where the wife divorced him while he was over there. He was from the Midwest someplace, and he had some girl in town, a teenager, who, when he became a prisoner of war, started to write to him because he was a neighbor or somebody in the local community. She kept up that correspondence that whole time. When he came back, he eventually married that girl. He was our head of CVAI at one point.

Like a lot of those folks that came back who had that experience, he just thrust himself into day-to-day life, and I never saw him waste any time. He was always doing something; was trying to better himself in some way. He went over there as the Defense Attache, so I was not surprised when he came in to see me. I said, "Don, what are you doing in the synagogue? I didn't realize you were Jewish." He said, "I'm not Jewish. I'm just trying to understand the culture better." He was going to do this job better than anybody had ever done it. He was that type of person.

A: What was his name?

D: Don was his first name; I don't recall his last name. He was there just before Colonel Reed was there.

A: Was it easy to get people to become Air Attaches?

D: Relatively, I think, depending on the countries. I have seen people go back to countries, some of the lieutenant colonels that were there. One of them went back to France. He had been somewhere in Europe. He and his wife were just looking forward to going back to France. The one that was the Air and then became the Defense Attache in Brazil spoke Portuguese. He had been in Portugal and in Brazil, and they longed to go back into that environment.

A: I interviewed a colonel at the War College last year that had been our Air Attache in Zaire. He had done an extensive amount of traveling in Zaire and had gone over to Kenya. He was actually accredited to a number of countries. He said that on his file there is an indication that he was an Air Attache, but there is nothing to indicate that he was an Air Attache in Zaire. In other words, tomorrow if the Air Staff would say, "Hey, we have got to have somebody that was in Zaire," there is no way they could find him through any kind of personnel search.

Apparently he was originally from MAC, but he was on the phone with some MAC planner one day, a friend of his. The guy mentioned the fact that he had the job of finding a bunch of air strips in Central Africa that could handle this kind of airplane. The guy was saying, "I don't even know where to start on this job." The colonel said, "I've got all that information. In fact, I've got photographs and

DRIESSNACK

everything that I compiled over my 2-year tour down there." It was only by accident that these two guys got together. The guy at MAC got his information. Is that kind of SOP for that expertise to get swallowed up in the Air Force, and the Air Force cannot call on somebody like that?

D: Unfortunately, I don't think that is an exception. We don't utilize our people that well. When they are an Attache, they are assigned to DIA; you are an asset of DIA. I was not aware that this didn't get on your record, unless that was an oversight of some sort.

A: He said it is in there that he was an Air Attache but no indication of what country he was in.

D: That is interesting. All too often we don't fully utilize the capabilities of people or keep track of where they were. A lot of them come back, and we have them here working in our international office. For instance, we like for the head of that office to have been an Attache someplace so that he understands how to deal with the Attaches. Those people go on and work in foreign military sales on the outside when they get out. I will give you a good example.

We had a Colonel, and then General, Webb [Brig Gen William B.] in China. He was very well thought of over there. He was one of those people who make friends very well, and he had a Chinese wife. We are beginning to open up China and to exchange Attaches. They had a Mr. Yang here who we thought was very nice. We went to several social functions with him as a bachelor, and then his wife came over a year later. She was a doctor over there. When she came over,

they had a social affair, and Gloria and I went with our people. There were 20 or so people, but most of them were Chinese. Since then I have been invited to all of the Chinese things. Even though we are retired, we still get and accept invitations from some of those embassies.

One thing I did when our people went overseas was to have them come in to brief me, and then I got a debriefing when they came back on anything important or anything the Air Force ought to be privy to or anything unique. Besides that, I wanted to let them know that somebody at that top level was interested in the fact that they were doing the job and doing a good job. I was concerned because I have always had an interest in that kind of thing.

In reference to my UN connection, I wanted to see whether there was some way we could tie a closer knot with that activity and the Washington activity. That is some advice I give to each of the A/Vices when they go up there: to see if they can't keep that close tie or build on it.

Webb came back from China and was reassigned somewhere in Europe. With all of this stuff that we are doing with China and the Far East, I would have thought that we would have exploited his knowledge, experience, and friendships because we could have extended his tour or he could have gone back as the Defense Attache. He could have been very effective here at a desk looking at China, but he was assigned to Europe.

It is like Personnel doesn't really care. The way Personnel runs, in my opinion, is mechanical. If they have a

DRIESSNACK

personnel problem someplace, they will raise all sorts of hell to try and get the personnel problem solved. When it comes to the rest of the Air Force or tries to take advantage of that, I don't think we have people with broad enough interests in personnel, outside of solving Personnel's problem--not the Air Force problem. So Webb went over in Europe, and I think he is a brigadier at this stage, and he was doing a good job as far as I can determine.

United Technologies wanted to open an office in Beijing. They said, "Do you know anybody that speaks Chinese?" I said, "Yes. As a matter of fact, I know two people very well. One is a Chinese of American extraction, Maj Gen Dewey Lowe, who just retired as the commander at Sacramento Air Depot. He has a large family. He lives in San Francisco, and he and his wife are both Chinese. They speak Chinese well, and his cousins have gone back over to visit relatives and so forth."

Here is somebody that is immediately, by name and by sight, an acceptable person. Dewey had taken on another job, and his wife was not in very good health. I called and talked to him. He would have jumped at the chance under other circumstances, but he couldn't.

The other one was Webb. The UTC people went to talk to Webb, and Webb jumped at it in a minute. He retired from the Air Force, and he now runs--is in charge--of United Technologies' Beijing office. That is not a small job. There are air-conditioners, elevators, besides helicopters

and all the air space stuff; Pratt & Whitney engines; a lot of stuff involved here.

A: Once again, the Air Force has lost.

D: Well, their loss was United Technologies' gain. Webb is doing a great job. You could take advantage of all the experience and contacts and cultural knowledge.

(END SIDE 2, TAPE 17)

A: Were these Air Attaches cautioned to stay away from any intel gathering? They were not sent over there to do some----

D: Without getting too involved with that, Air Attaches work for the Defense Intelligence Agency [DIA]. That ought to tell you what their job is.

A: For example, in South Africa they caught the Army airplane with cameras on it. Is that acceptable behavior in the world of Air Attaches, regardless of what country?

D: In this country we make it easy for them. We give them tours. (Laughter) We give them a subscription to Air Force Magazine, and they buy Aviation Week. We are so wide open here that when people come over, we almost catalog it for them and give them the information. There are lots of jokes that the Attaches here make--thanking us for making the job so easy and so enjoyable.



DRIESSNACK

A: We still allow Cuban airliners to fly across the United States to Canada. The route is so many miles to the east of Griffis [AFB NY].

D: Yes; a SAC base.

A: But apparently pretty soon these airliners start drifting to the west, and then they tell them to come back because they are clicking the cameras as they go over Griffis. The Americans are just so damned easy-going and forgiving. With all the trouble we have had with Cuba, yet we let them fly their airliners across the Continental US. Unbelievable.

D: There are a lot of incidents about Attaches. While I was there, the US Assistant Attache in Russia went on a holiday. His wife went over to visit him. I believe she was in law school at Stanford. She was of Russian extraction--American born, but her grandparents had come from Russia. She never believed all of this bad-guy stuff about Russia. After all, they were her relatives. She knew her grandparents and father and mother, and they were just like anybody else, so she could never really believe a lot of that stuff was true.

She joined him for a holiday over there. They went out of Moscow to Kiev, one of the major cities. They were in a restaurant, and somebody who was apparently drunk tried to get them to share a drink and said, "I would like to buy a drink for you." They said, "No thank you." This persisted, and finally the guy said, "You think you are too good to drink with the Russian?" They then accepted a drink. The guy sent a drink over; he toasted him and had the drink.

They finished their meal, paid their bill, and went out on the curb.

As they walked outside the restaurant, they were accosted by plainclothes KGB people who said, "You are under arrest." He said, "For what?" They said, "For not paying your bill." He said, "Of course I paid my bill. Let's go back." They said, "You didn't pay your bill."

They threw him in the back of a station wagon. The wife, who spoke Russian, was all over them. They said she was like a typical Russian housewife, very strong and vociferous; and she jumped in the car. Now whatever they had given him in the drink drugged him, and he threw up. He almost expired, she claimed. They sat on him; actually threw him in the floor and were sitting on him. He was throwing up and lying there in his own vomit. He was choking. She is witnessing all of this.

They get to the police station and drag him out of the back. He has been lying in this stuff, and there is a photographer there who takes a picture of him. The picture appears in the paper as "Drunk and Disorderly American Attache Arrested."

He gets into the police station and says, "I am a diplomat. I have told these people I am a diplomat. I am being accused--he speaks Russian now--of not paying my bill. You can go back there, and I can prove that I paid my bill." The chief or magistrate who is there says, "I'm sorry. This has all been a grave mistake," and lets him go, but the next morning he is in the newspaper.

DRIESSNACK

Well, that came back to us, and that report came to me. I said, "By god, has the State Department or anybody done anything about it?" The answer was no, so I decided I was going to do it. I had them call the Russian Embassy. I said, "I want to see the Air Attache RIGHT NOW!"

I don't know where he was; they couldn't find him, so two lieutenant colonels came over. In the first place, they don't understand why they are being summoned to the Pentagon by a three-star general. They are talking Russian. Of course the person escorting them speaks Russian very well; a guy named Cherney [Col, USAF]. He was our guy and was of Russian background. His parents or grandparents came from Russia. He spoke fluent Russian. He brings them in, and I sit them down.

I tell them the story of what happened. They said, "There must be some mistake." I said, "Don't tell me that is a mistake!! This is exactly what happened! His wife was there. His wife is Russian. She speaks fluent Russian. There was no misinterpretation on the language at all. He speaks good Russian. If he wasn't there with his wife, maybe you might have an argument or I might listen to something, but it's just not so. What kind of a country do you have? What kind of people are you?"

"When you leave here and go out on the curb, do you want somebody--the police--to take you down to the police station, give you a drink to make you throw up, and have us take a picture of you as 'disorderly,' and then you are going to be sent back home? Is that the kind of people you

are? Is that what you expect when you leave here? I can arrange it. I can make it happen."

They were all upset because I had raised my voice to them. "Now I don't want any more of that!! I want an apology from you people on what happened to that Attache; and if I see any more of it, you, your boss, and his boss are going to leave this country! We are not going to put up with that any more!!" The other thing I told them was that, "You are quarantined to this city! You, the Attache, and the Defense Attache are not to leave Washington DC, and is that understood? If you do, then you are going to be sent home!"

They normally traveled freely, and they just notified us where they were going. They used to send us over fake airplane schedules. It would say "TWA 409." There is no TWA flight 409 going to Cedar Rapids, Iowa, or someplace like that. They are tracked anyway by the FBI, so we knew where they were going, but they do dumb stuff like that.

Anyway, they went back over. As they were going out the building, they were cussing about "The Embassy never tells us anything, and here we are taking this ass-chewing because it is something we had nothing to do with, and 'who the hell are those guys over there doing this sort of stuff,' while we bear the brunt of it here."

The next thing I hear--I forget who our Attache was over there; maybe it was General Hamm at the time--all of a sudden, our Air Attache is now invited to their space village--first time ever! I thought to myself, "Just a little bit of strength; these people understand strength and

DRIESSNACK

threats. If you treat us right, we will treat you right. If you are going to treat us rough, by god, I'll go an extra mile!"

That was a lot of eye-openers to somebody, but the word came back to me from a lot of folks throughout the Attache business that they were really happy that somebody did something about that. This fellow Dan Allen that I told you about was a colonel in Prague. He actually got pistol-whipped by the Czech Army officers.

A: I interviewed Mike Cavanaugh, and he had been drugged by a Czech Air Attache in Kabul [Afghanistan]. They attempted to screw him up and drug him. Later on he was the one that was stopped, beaten up, and almost killed by the Afghan Secret Police with the Russians standing by and watching. Cavanaugh had been a Raven FAC [Forward Air Controller] in Laos and had killed a North Vietnamese general in a shootout while escaping from a landing strip. As they were beating him up and were going to kill him, they said, "This is for General So-and-so in Laos." You are right; those people are not kidding around.

D: They do their homework.

A: The Americans: "Well, the war is over. Now we will go home."

D: Send them the Marshall Plan.

A: So that is not an exception. That Cavanaugh thing was just as the Communists had taken over Afghanistan.

D: I think you need to deal with it and deal with it swiftly and in kind.

A: Well, to digress and get on current events, shooting up those oil platforms.

D: We might have been better served by taking out the missile sites.

A: And then we wait 3 or 4 days.

D: We have to decide what it is we want to do, if anything. There was so much pressure to really do something, they worried about overreacting.

A: You were at that level of decision-making. Why was that not already decided? "If they fire one of those Silkworm missiles, here is our ops plan."

D: The problem is that the decision is made back here. If the decision was made by the commander in the field; if it was given----

A: I mean to say, 6 months ago Weinberger, Schultz [George C.], and the President should have said, "If they fire one of those Silkworms, these are going to be our responses, and they will be within minutes." From down here, that is far above my level, so I guess it is easy to say that. It would seem so obvious on the face of it. Even when they blew that missile into that ship, it should have been a within-minutes reaction to the thing.

DRIESSNACK

In September 1982 the GAO said the Air Force and DOD had violated Federal anti-lobbying laws by working with Lockheed to win Congressional funding for the C-5B. Would that have impacted on your office?

D: The people were Legislative Liaison; Guy Hecker [Maj Gen Guy L., Jr.] was running that. You walk a fine line there in the sense that the President's budget goes to the Hill, and we have certain things in the budget. It is our duty then to defend that budget. These are things that the Air Force wanted.

The services all do the same thing. We put them in; they survived the priority system; they survived OSD; they survived OMB; and finally they are in the President's budget. Now our obligation is to defend what is in the President's budget and not our own agenda, and that is what we do. That is what the Director of Budget does; that is what our staffers do and our Legislative Liaison people.

We don't lobby. What we do is respond to questions. They want information. There are people that are supportive of our requirements. You would get a Goldwater or someone like that; certainly the Congressmen and Senators from Georgia would say, "We need some more information. We have a lot of people up here against this. We need some information on how to answer this question. Are we ready? What does this cost? What is the shortfall on airlift? What studies have been run?" So they are looking for information, and we go over and respond to those. That gets very detailed sometimes.

A: The story went on and said, "Subcontractors and Lockheed officials meeting 'almost daily' in the office of Air Force Legislative Liaison; Maj Gen Guy Hecker to coordinate the 'lobby' effort."

D: How do you get the information over there, and who are those people that don't understand? Who are the people that we have to convince that what we are asking for is legitimate? In the case of the contractor, he is clearly lobbying. In the case of the Air Force, the Air Force has been asked for information, and we get the information from the contractors. You have to explain the cost in more depth. You get questions that are political. How many people are involved in the jobs? What is this going to mean to Appalachia? What is it going to mean to this particular segment of the economy?

We are looking at requirements, our own estimates, and things like that involve the Air Force. If you want to look at how many jobs are involved, then you have to go out into the community to find that out, and you go to the contractors; so you get together on occasion to look at who is going to answer the question and to make sure that everybody has the same answer.

It is coordinated so someone isn't giving one answer and someone else giving another answer. That is what the Legislative Liaison Office is all about. They pull that together. Does that border on lobbying? I don't know. I guess in some sense we are lobbying for our programs, but essentially we are defending our programs. The C-5 was a request in the budget at that time.



DRIESSNACK

A: Here is a note that says: "In February 1982 Lt Christopher M. Cook released; charges dropped; discharged from the Air Force." Then there was a press release that said: "The court found General Teagarden's conduct clearly was not in accordance with accepted standards of performance of prosecutorial functions."

How did it work for the Air Force to have the JCS Chairman be a blue-suiter? Is that good, bad, or does it make any difference?

D: I think it's helpful in that you are sure the Air Force story is going to be told and sure there is going to be some blue-suit influence on a decision. Also, the Chairman is the one who interfaces with the President. With his background and interests in the Air Force, the Air Force is not going to be shortchanged in those decisions.

A: Can the JCS--General Jones in this case--keep "his hands off" the Air Force? Did you find General Jones looking over your shoulder to see if "these guys are doing it right now that he is gone"?

D: No. I didn't see that particular influence. Toward the end of his tour down there, Jones was preoccupied with trying to reorganize the place and had really gotten into that. The only comment I have on that is that a lot of people have talked about the reorganization of the JCS, and now finally they have a Deputy JCS. Bob Herres [Gen Robert T.] is the Vice Chairman JCS. He wanted to have more authority and sort of be independent.

Everybody went down and spoke about their uniformed service, essentially, so the JCS wasn't as strong as they could have been or as influential as they could have been without that. Jones tried to get to that. Had he started that earlier, rather than the last year of his tour, he probably would have been more effective in getting something done.

A: In 1982 there was money let for 50 C-5s and 44 KC-10s. McDonnell Douglas was crying foul. They had spent all this money on this C-17 which was selected. What was the story behind that?

D: I will tell you how that decision came about. During a POM budget cycle, we were getting ready with the budget. We had the major budget issues that had come up from the third floor. One of the things that OSD was looking at cutting out on us was airlift. We had gone in at that time for more KC-10s. There was development money in there for the C-17. A lot of that was going to be on the chopping block.

The Chief and the Secretary have to go down and speak on the major budget issues. They went down and met with Weinberger. They talked about the shortfall in airlift and actually took a briefing down that spoke of the shortfall and what would happen if the balloon went up in Europe. We need like 66 million tons per day, and we are way, way lower than that. That is the minimum sustainable amount of hardware needed in Europe to keep things moving if we are going to win a war. We were nowhere near anything like that, so we had this big shortfall.

## DRIESSNACK

As a result of that meeting, Weinberger was shocked that this shortfall existed. He wanted to do something on his watch. He said, "What can we do right now? You have convinced me there is a shortfall and something needs to be done, but I can't wait for the C-17. What are we going to do on my watch?" The only thing we had going was a freighter version of the 747 or more C-5s. We still had all the tooling, and it was in place at Lockheed, Georgia. It was an Air Force plant, and it was sitting there with not much going on except they were building a very few -130s. The plant was essentially sitting idle with all of this C-5 tooling in place. They said, "Well, we have already paid for the tooling, and it is sitting in place, so that is the one we could crank up the fastest."

Weinberger made that decision, and we went with the 50 C-5s. At the time we did that, we thought, "Is this going to jeopardize the C-17 which we really need and want because it is a much more versatile airplane." The C-5 has a hard time turning around on the ramp on some of the bases in Europe. It takes up the entire ramp, and you can't have something like that. You can only bring a certain number of them in to, say, Ramstein [AB Germany]. The C-17 could get close into the battle area. It has the same wide body but has a lot of other features on it that the C-5 doesn't have. So we wanted that, and it was less expensive; a more operationally efficient airplane, less expensive to operate. This was the advanced tactical cargo kind of airplane. It has a wide body and could carry everything that we had at that time. It wasn't as long as the C-5, but it carried all of the outsized cargo. From an Army support standpoint the C-17 would also have been a bit more versatile.

The Air Force then made a decision that they would stop at 50 C-5s, knowing full well that Lockheed would lobby for a lot more once it got started. No one ever wants to shut a plant down, so the Congressmen would argue from down there. You see that going on now. But it was a Weinberger decision that he made. We couldn't accelerate, in their minds, the C-17 fast enough. But in fact, with all the work that had been done on the AMST, we could have accelerated the C-17 and gotten it faster, but the decision was made to go with the C-5 because the tooling was there and we didn't have to go through a lot of flight tests and what have you; and that is where that decision came from.

A: A big jump in subject here: In January 1983 you had this Dr. William Stanford down at Wilford Hall that had been operating over a period of years, and his competence was challenged. General Paul Myers [Lt Gen] was supporting Stanford. Was that as big a deal as it appeared in the general press or was it blown out of proportion?

D: Maybe a little bit of both. When Paul Myers was Commander at Wilford Hall, Stanford was sent back to Milwaukee or someplace to a hospital for more training to work in the civilian environment. He was an expert in what he was doing. He made a mistake up there, and some woman, as a result of an operation, sued the hospital. The anesthesia, the oxygen, or something got hooked up wrong, and he was responsible for oversight of it.

When that came to light, they said, "What is his background?" Then they found out he came from Wilford Hall, and there had been more than the normal number of deaths.

DRIESSNACK

But he took all the tough cases; cases that a lot of doctors would not operate on, but he took the case anyway. He took the kids that didn't have a chance. He said, "Well, we will go ahead and do it as long as there is a chance." The death rate was pretty high.

There were a group of doctors that had worked at Wilford Hall and were now at Emory University. They spoke up and said they would never work with him. They didn't think he was a competent doctor. There was a lot of this going on. You would think in looking at Dr. Stanford's record that there was some question about his medical capability.

Well, they got after Paul Myers. Paul Myers was now the Surgeon General and a neurosurgeon himself. It all fell around the shoulders of Paul Myers. I thought it an unfair sort of thing. It is like when you sue somebody, you go after deep pockets. It has nothing to do with that other person. You never heard too much about Stanford when the case came up; it was all Paul Myers. Paul Myers was an excellent surgeon, and he was a good Chief of the Medical Corps in the Air Force as far as I was concerned and an excellent person.

A: The four Thunderbirds crashed in January 1982. Was that just a case where the lead didn't pull out, and the others just followed along?

D: Misjudgment by the lead. When you fly tight formation like that, the only thing you look at is your lead. If you are flying wing, you look at the lead. If you are flying No. 3, you look at the element lead, and that is what precision

flying is all about. You have complete faith in the leader. He just made the loop too tight and too close to the ground, so there was no room to pull out. That was a very unfortunate incident.

A: Was there ever any question of whether the Thunderbirds were going to be continued or not?

D: I don't think so.

A: This Korean airliner was shot down in September 1983. Did that cause a lot of late nights?

D: Well, there wasn't anything we could do about that. He was off course. We had had another incident with a Korean airliner that was shot down or forced down in Russia. He landed on a lake bed.

A: Yes, a couple of years before.

D: The 747 that they were flying has very good navigation equipment, and he should have been able to maintain a closer track of where he was. We didn't get involved with that, I don't think. Supposedly, he didn't even know he was in trouble until he got shot down.

A: Seymour Hersch [NYT] wrote a book about that, and another book has just come out about it. He claims that the airliner was spying.

D: No reason for the Koreans to spy.

DRIESSNACK

(END SIDE 1, TAPE 18)

D: I think you just had an airliner off course and a trigger-happy or incompetent air defense system.

A: I had heard that because of that other Korean airliner incident that they shot a couple of air defense generals in the Soviet Union. Apparently that thing fooled around lost for a couple of hours in Russia before they finally found it, shot an engine out, and the guy landed. I had heard that a couple of air defense guys more than lost their jobs; they got shot.

D: It is just like when the young German went in with a light plane, the Cessna; they took that as the excuse to fire all of those folks because it pointed up some of the holes in the air defense network.

A: I heard the reason they shot down this Korean airliner was because they weren't going to be accused of letting something else go.

Would you have gotten involved in promoting drug testing?

D: That was the Chief's decision and the Medical Corps. We had a lot of discussions between the JAG and the medical folks, the Surgeon General's office, and the Chief. First, it gets to be a DOD policy and then an Air Force implementation of that policy and how we are going to carry it out.

A: How did you feel about this drug testing?

D: No. 1, you can't condone drugs. I am very intolerant of people that use them so I may be the wrong person to ask. Two things: If you are flying an airplane and you either have your own life or the life of others at stake, then you have no business being on drugs or alcohol or anything else. We don't let people fly when they are drunk, and we certainly don't want people to fly that are under drugs.

The ground people--anybody servicing that airplane or the people on radar or approach control that have to guide or direct them on their way--we don't want them being on drugs. They are accidents waiting to happen, and there is a large number of people that could be harmed as the result of one person's drug activity.

In anything in the military, whether it is aboard ship, in combat, in combat arms in the Army, air defense; can you imagine some nut out there firing missiles off at airliners or not knowing which switch to push or get panicky in a combat situation and, therefore, wipe out a whole segment, division, air base, or what have you.

In the case of the Air Force flying airplanes, you can't have people on drugs. That is one place we can't tolerate it. If it gets to be a condition of employment, so to speak, people need to be aware of it. It is just like one can argue about personal freedom when you walk through a detector at an air terminal. Essentially they are accusing me of having something. I am guilty until proven innocent--until I walk through that metal detector. Now we have all gotten use to that. It has become a way of life. Well, in the military you can't condone or tolerate drugs;



DRIESSNACK

so you ought to be able to accept that fact. You just don't want to have people around that do. Testing doesn't bother me, in that sense.

A: Do you think there was room for error; that anybody got bounced because of a drug testing error?

D: There could have been. There are some reasons why some things get in your blood. In the general justice system or the way we administered that--I don't care what it is--it is never just black and white. You go through that test, and people that have never had drugs in their life all of a sudden have them show up; at least their story is that they have never been on drugs. It came out wrong, and they have had other tests done by civilian doctors, and it came out a different way.

Unfortunately, there are only a few labs that could process the test. I think we rapidly overloaded those places. It depends on who administered the tests, what labs they went to, and so forth. I mean, I can go to an annual physical and take a urinalysis, and they come back and ask me to redo it. Something has happened to the specimen; human error along the way. So there is always room for human error when somebody else is testing it.

I don't think we should say, "You got a positive reaction," and that is the end of the career, especially when we went from nothing to the drug test. While I think people should have known better, once we went into it, we should have had a clean-up time then said, "That's it."

- A: The Space Command was created in 1982. Was it just a natural progression for the Air Force to create that?
- D: I think it was a natural progression, but it was accelerated because we wanted Lew Allen to be the Chief, who created the Space Command, before he retired. Jerry O'Malley pushed that more than anybody. He wanted to make sure that got done under Lew Allen's tenure.
- A: Did the Navy fight that at all?
- D: Oh, yes! I don't know how much they fought it, but the Navy clearly thinks that they have a real role in space. The Navy's navigation is almost completely dependent on satellites because you don't have to have stars out now to navigate. You can have satellites, and they are very, very accurate. You can have return signals. Someone doesn't have to stand out there with a sextant. You just have to tune in, and you can find out where you are. It identifies your coordinates anywhere in the world. For submarines you can imagine what this does. It can run a wire up and get the signal as opposed to surfacing and taking some star shots.

For missile submarines, where you have to have an accurate sounding of where you are so that you have a base point from which to launch missiles, it becomes very, very important; so they have a real need for space. In the minds of some Navy people, it is more important than it is for the Air Force. We have ground missiles, and we know exactly where they are. We have theodolite accuracy and know exactly where they are. Of course we use it for navigation for aircraft all around the world.

DRIESSNACK

A: Haven't they even taken the position that space is like an ocean?

D: Extension of the ocean. We say it's air, it's space; and anything above the ocean is ours. On the ocean and below it is theirs. But the Air Force has clearly done a lot more in space. All of the intelligence gathering information has been the black world, but it has been Air Force; Air Force funded, financed, and managed. We have run that for a long, long time. The Navy is a part of that. They have a piece of that action.

A: Do you think you will ever see the day where Air Force will have aircraft in space--space ships--as opposed to NASA?

D: Yes, I think that will happen. It is a natural evolution of things to happen. We will take off from a runway and go into space.

A: Do you think that will be the door that will open military use of space?

D: Well, military has already used space. We have been in the intelligence gathering business for a long time.

A: Putting Air Force responsible vehicles in space versus NASA? There was that big push when Eisenhower didn't want military in space. That is a good point. That would be a good barrier to step over. If you could take off from Maxwell AFB and get into space, it would clearly be an Air Force operation.

D: And you will see that; that will come. With the evolution of materials and propulsion systems, it is just a natural thing that is going to come.

A: Have you read the book, Red Storm Rising?

D: Oh, yes.

A: Fascinating.

D: It really is.

A: It is hard to believe that one guy is so up on his military operation.

D: He wrote one before that, The Hunt for Red October.

A: That was super. He has written a third one. I guess it is not quite up to speed.

Pilot retention is always a problem. Did you try to gin up any programs to improve that when you were A/Vice?

D: When I was there, Personnel was very involved with that. We did have a series of programs that were discussed at the council on how we keep pilots. If the airlines are recruiting, it is very difficult because they offer the young kids a lot more pay. They want to fly, and they would much rather fly an F-15 than they would a DC-9 somewhere. Even for the airlines, going from Montgomery, Alabama, to Atlanta, there is not much glamour in that. The pay is a lot better, but if they could get into a fighter airplane or

DRIESSNACK

into a B-1 or something like that, then those kids look forward to that, and they really enjoy what they are doing.

All of us that have flown have met the kind of person that doesn't want to do another thing with his life except fly that airplane. "Why don't they leave me alone? I will be a captain forever. I will stay right here."

Now foreign countries do that, but we do not do that. We have an up-or-out policy, and everybody has to advance. Some of that is good; some of it is maybe overdone. There were some guys that I flew with in earlier years that were just outstanding fighter pilots, and they would gladly have died as fighter pilots. They would have done nothing else, but as you get older you can't take the G forces. Airplanes change; they have to get into new equipment. Their sixth sense or seat of the pants isn't as important as the instruments are as they get a little older. The generations of pilots grow as the technology increases, and you wonder how they can handle all of that stuff. Did you ever go to a video arcade and see those kids operate?

A: I was watching one the other day. Boy, he had reflexes that I must have lost 40 years ago.

D: Our youngsters coming up are into all of that stuff. When they sit in the cockpit of a modern fighter airplane with all these videos displayed, they can accommodate to that, just like when we were first flying jet aircraft. I remember checking people out in jet aircraft that came out of World War II. They were recalled during the Korean War and stayed on. As a result of that, they just couldn't get

used to the speed at which everything happened; but it is all relative. It was something that we never gave a second thought to because we grew up with the jets. Kids are now growing up with avionics. My son, who is going through college, has more avionics in the corner of his room than I have had in my whole life.

A: My 8-year-old sits there, puts a disk in the disk drive, loads the machine up, and thinks no more about that than I did in turning the radio on.

D: Sure! They know how to do all that stuff. Computers are the same way. They are punching things in computers all the time, and it is just second nature to them. When we talk about the complexity of all this, it is something that each generation grows up with. They get more complex than just the normal civilian things that they do. Their education is different. They are exposed to more things than you and I were exposed to. While it is very complex to an old-timer, the youngster has the reflexes, and it is a challenge to them.

Retention is a factor of many things. One, it is the satisfaction he gets out of the job he is doing. Two, it is the way he is treated. Does he have the respect of the community, of the people he works with? I think the Reagan Administration had a lot to do with that.

All of a sudden those folks could wear a uniform off base, and they were respected and accepted no matter where they were. Then the pay has got to be somewhere near comparable of what they can expect to do on the outside because these

DRIESSNACK

people have families. They have youngsters that have to be educated. They have to buy groceries and clothes, and they operate cars. They own homes; all the things that one normally would expect of an educated guy that is operating on the outside.

These kids all have bachelor's degrees. I would suspect that more than 50 or 60 percent of them have master's degrees. What should they expect economically as a return on that investment from the community? If the Air Force doesn't provide close to that, then they might go somewhere else, so there has to be other kinds of things that take the place of money.

We are kind of a family; there is a certain camaraderie. That is why we always fight hard for the BX and the commissary. There is, in fact, a savings that accrues there; our medicine; the medical treatment that we get. We have to make sure we give our people as best we can in all of that and treat them like professionals.

A: What about in such things as this big deal about issuing pilots these leather jackets?

D: Big deal! That was something, an esprit sort of thing, that they could have done without ever mentioning it, and it would have been okay. The Navy has never gotten off of leather jackets. They have always had leather jackets. I used to think they looked great in one of those leather jackets.

We have gone through a series of changing the fabric. We are technology oriented, so we went through a whole series of lightweight, wear resistant. We have a clothing lab at Wright-Patterson that gets involved with all of that. We once burned some people badly. We made flight suits out of nylon, and when they had a fire, it melted right into the skin. That was the nylon era that we were in. Nylon was tough, but it became your own coffin, so we got off that kick and went to something else.

There is nothing wrong with a leather jacket. If that keeps folks happy or sets them apart, that is what you need. Anybody that flies an airplane is on an ego trip anyway. They are different than other folks; let's face it. They have had special training, and there is a big investment in them. If the price of a leather jacket is going to make them happy, so be it.

A: Another thing that cropped up during your tenure up there was this Captain Goldman and his yarmulke. I notice they have now passed legislation that you can wear religious----

D: That is a mistake.

A: They haven't seen the beginning of that.

D: There will be people walking around with chains and all sorts of stuff saying that it is a religious thing; making up religions just to wear stuff.

A: Would you have gotten involved with this?



DRIESSNACK

D: It was a lawsuit, see, so then it gets to be an issue that is discussed at the council, and we get involved with all that. But it is not part of the uniform. If you are in the military service, then you are in the military, and that takes precedent.

A: There were 25 top senior DOD officials who took lie detector tests in January 1982, including Davey Jones. Were you ever approached to take a lie detector test?

D: No. I guess we were all in line for it. As I recall, it was on leaking some information.

A: Yes, on the budget.

D: That is a little paranoia. To have senior officials take a lie detector test was a little bit ridiculous.

A: I was glad to hear that Schultz said to Reagan, when he was involved somehow with lie detector tests, that he would quit before he would take a lie detector test. It is kind of an insult.

What was your reaction to use of Air Force resources in trying to stop drug smuggling on the coast?

D: That may not be our job. It is the job of the Coast Guard and the Treasury. We had special training going on, for instance, with AWACS people. We were training radar operators, and they fly every day. Now if there is a dual mission that can be performed for the good of the country, so be it. We ought to look for those opportunities, I feel.

Where we did use them and were able to track these airplanes, that was a very unique capability and didn't interfere with anything that was going on internationally that we were involved with. We didn't take an AWACS out of Europe, Saudi, or any place where we needed it.

I think we should use the assets of the country. It is a total National problem. I don't think the Air Force ought to be strapped with that job or that task. We are not given the budget, the people, or the authority. That authority rests with other branches of the Government; and if they are not equipped to do it, then we ought to equip them to do it.

A: Yes, by law is it the posse comitatus, where in this country the military are not allowed to enforce laws?

D: And you keep that division of powers, and that is fine. That is just the way our society is put together. Where we can assist, however, it is like hot pursuit: You can cross county or State lines if you are in hot pursuit. I think where we can, we should assist them in anyway, then they can make the arrests and go after the folks. It was probably very helpful.

One of the things that we have done is to tether radars up on balloons or small dirigibles that look at the coastline. In the beginning we were the only ones that had that capability, and we used them for other reasons. You have to think back to the Civil War. The first kind of observation was a kind of balloon looking over the lines, and we are back to balloons again, except we have radars on them now. If we can help in that sort of way and can use a military

DRIESSNACK

base located in the right place to do that, fine; that is Federal property, and it ought to be used for that.

On the other hand, we reaped some of the benefits. They caught some of these drug runners, and we got some of the boats to use in recreation--MWR--that they had taken away. There are places where people I know use the cars that have been captured.

A: I know Tyndall [AFB FL] has drug smuggling boats in MWR.

D: Sure. So if we get some of the benefits of what is happening, we ought to contribute a little bit to it, too.

A: To jump back in time, you were a general officer during the Vietnam War and were never physically involved, but what was your impression of our involvement there? Should we have been there? Once there, did we fight the right war?

D: Let me start with the area that I knew something about: the financing of it. You can't finance a war on supplementals, as they tried to pay for this war. A normal budget went in, and then there was Vietnam supplemental--Southeast Asia supplemental--that paid for the activity that was going on. It was a side show in that sense. You can't do that; absolutely can't do it.

For all those folks who said, "You have to get the country committed to it, and the country has got to be behind it," that is when you do it. For all those people that were against it, had the Congress been more involved and had we declared the war, then a whole new set of rules and

regulations and laws would come into effect. You don't have this backbiting and under current and stuff that goes on, exposing papers and all that stuff.

I can't condone any of that; I don't care what is going on. Even if you are working for a company and you don't like what is going on with the company, you can leave the company. Here is your country doing something; the guy is inside Defense trying to undermine what Defense is trying to do, and that is a little much. Clearly they should have been out of there or court-martialed in some way. I am a firm believer that once the country is committed to do something, then the commanders in the field have got to have the authority. You were given constraints within which you had to operate.

In Korea we couldn't go above the Yalu on our flights. If you were in hot pursuit of somebody in an airplane, you were supposed to turn around at the Yalu. A lot of folks did not turn around; they just kept going after them, and some were shot down over there. But it kind of ties your hands; and then the question is: Do you want to win, or don't you want to win?

The Army couldn't go beyond the 38th Parallel. At one time they were way up north, and then they got driven out when the Chinese entered the war. But we stopped at the 38th Parallel, so it was kind of a stalemate, and we flew interdiction missions behind those lines when I was there; but we couldn't go any farther. We couldn't go back to the sanctuaries. Anytime anybody has a sanctuary, they can nickel and dime you to death.

DRIESSNACK

In those days they brought supplies down in the evenings or at night, and they reinforced wherever they wanted to reinforce. We could have ended the war had we just wiped out the supply source. That is the way we fought the war in Europe and the war in Japan. When we got to Vietnam, it got even worse, even more ludicrous, on the rules that were set up, the Rules of Engagement. If you want to go to war, go to war. To my mind they could have ended the war by mining Haiphong Harbor; never let anything get in there. All the supplies came in there. Russia sent supplies, the Chinese sent supplies; and they all came in through Haiphong Harbor. Why not cut off the source of supply? It was crazy.

We never took the war to North Vietnam. Finally they did bomb Hanoi and some of those places with the -52s, those Arc Light missions, and that finally brought the war to a head. Whether it was the right war or not, I wasn't in the decision process at the time. But you can't go to war and let the country sit on the sidelines. Either you are at war or you are not at war; that's No. 1. No. 2, when you decide to go to war, then the commander in the field ought to have complete authority.

- A: Which raises the question: Have our communications become far too good; that I can pick up the phone and talk to the guy in the foxhole?
- D: I'm not so sure it matters as much as politically Washington wants to keep their hand on the tiller and keep meddling with it and keep tweaking it. The Iranian Rescue Mission was run out of Washington. Grenada, on the other hand, was run by the CINC in the field. They were given the

objective, and they did it. Washington was kept informed. That is really what you have to do; you have to run it in the field. You can't compare those two. Those two are sort of incidents--one run one way and one run the other.

It used to make me sick to hear these people in Southeast Asia talk about they didn't have enough bombs or they did have enough bombs. For the people that have never been in uniform, the statisticians that were involved, they added up four 250 pounders as the same bomb weight as a 1,000 pounder. I can tell you, 250 pounders will bounce off the Wilson Bridge, and the 1,000 pounder will put a big hole in it and knock a section off. In Korea I carried both 500 pounders and 1,000 pounders; never carried a 250 pounder.

When I heard they were carrying those bombs, I wondered, "What are they doing with them?! What can they possibly do with a 250 pounder; put a crater in the road?" They weren't traveling by highway. They were traveling by trail. They needed to stop the source of supply someplace if they wanted to cut it off.

What was your actual retirement date?

D: July 1, 1983.

A: When you took the A/Vice job, was it understood this was going to be your last job?

D: No. Actually it was an age thing; I was 55. I had another 18 months to serve in the Air Force until I had 35 years. Okay, I figured at that stage I probably would not have

DRIESSNACK

gotten a fourth star because I feel you should have at least 2 years to serve in that capacity. That is not always true, but my personal feeling is that you should have at least 2 years. If I was going to go to work--and I was too young to "retire" retire--I felt I wanted to have 10 years someplace in industry or whatever I was going to do.

(END SIDE 2, TAPE 18)

D: I now find it very attractive and very satisfying. I am doing a lot of the things that I championed when I was in uniform. I'm trying to get better quality, better efficiency, and more visibility on programs. In some cases I'm finding I'm able to do that in the company that I'm with where I couldn't when I was in uniform.

The other thing is, people are listening. They are taking advice. I'm able to better explain how defense works and what the defense customer is looking for and what he should have a right to expect. This all falls on very receptive ears, too. From that sense, it is a very satisfying kind of thing that I'm doing.

It is very hard to take off the uniform. For the first year and a half, and still today in some conversations, I say, "We don't do that," or "That's not the way we operate." Everybody says, "Who is 'we'?" I forget that I'm not in uniform. I get in meetings with the president or chairman of the board of the company and into conversations and say, "No, we don't do that."

A: Speaking of that, what is your reply to people about the military leaving the uniformed service and going to work for the aerospace industry?

D: I see nothing wrong with that at all. The thing that I would object to is: Say I am a program manager on program X, and I go to work for that contractor. Civilian counterparts can do that or have done that, but now there are laws against that also. If I am a program manager in program X and I go to work for somebody that is building program Z, I don't see anything wrong with that. I have an expertise that I built up over the years and is marketable in this society just like anything else is marketable. If I have dealt with particular contractors over the years as a contracting officer and then I go to work for that contractor, then there is the appearance that there could have been conflict of interest.

I will guarantee that when you are back there as a captain, major, lieutenant colonel, and what have you, you are not thinking about going to work for industry. That was the furthest thing from my mind. You are gaining an awful lot of experience in dealing with these people.

I was in an actual program office that had Douglas as a contractor and Lockheed as a primary contractor. I suspect somebody might have said something if I had gone to work for Douglas or Lockheed, but it never even entered my mind. In the company that I do work for, more than 50 percent of their business is civilian; it is nonmilitary. I am at the corporate level. I don't work for any particular company.



DRIESSNACK

Where the companies do some military or defense business, I am not on their payroll.

A: You say General Evans works for United Technologies?

D: Yes.

A: He retired kind of prematurely from the Air Force. Seems to me he was interviewed by our program, and he said something about he had a younger brother that was mentally retarded.

D: Right. And his parents had taken care of him. That son was always at home. The parents now were getting to the point where one of the parents was taking care of both the brother and the other parent, so he was finding himself making lots of trips back and forth to home to handle family affairs. He was at USAFE, so he had to somehow go to Connecticut, which was his home, and he took care of that. His younger brother had to get into an institution because the parents could hardly take care of themselves. Since then, his brother has passed on, and I think the parents have passed on also.

A: I thought that was quite a revealing thing. People always want to paint the uniformed services negatively. Here is a guy who, at the peak of his career, set that all aside to come home for family responsibilities.

D: This is true. I got out with no regrets. I thought I had a very great career. When I joined that ROTC unit, I had never dreamed that I was going to end up as a three-star in the Air Force. I have had good jobs, good assignments, and

have worked for good people. We have a lot of good folks. There is a lot of depth and talent in the Air Force. It is a matter of being at the right place or being given the opportunity.

I went to one SPO, and a good friend of mine who I went through the master's program with went to another SPO. He retired as a major because he got into a situation where somebody--not his fault at all--misunderstood something and completely cut off his career. I often thought later on I was going to go back and undo that if I ever got the opportunity; but John didn't want anybody to touch it. He was one of those people.

He was a bright guy. He had flown 150 missions in Southeast Asia, and I didn't even get there, see. He came back and was assigned to a SPO on the West Coast. He flew with the Air Defense unit down in Southern California. When that unit went on alert, they had to fly the T-birds--they were the target ships. They had to agree to do that; otherwise, they wouldn't take them on as being part of the flying program. He and another fellow agreed that they would do that. John and I have flown the T-bird all over this country together. When we were in school and assigned at Wright-Pat, we flew together a lot. A good pilot, and he was originally in Air Defense; in fact, he came out of Air Defense when I first met him at AFIT.

Anyway, he took this airplane out over the water, per their instructions, and came back in. I forget when this alert was; whether they were coming into the sun or out of the sun, but they see an airplane coming at them. Their

DRIESSNACK

instructions are that they make "single needle width turns"; in other words, they are not violent evasive maneuvers. That is a little unreal, but for the sake of the exercise, that is what they did. As they see the first airplanes coming out, -102s I guess they had out there, they make a single needle width turn. He was flying at the time. It turns out that the guy, whoever it was, missed on his simulated missile that was supposed to shoot him down.

They saw some of the airplanes; they didn't see others. Every time they saw one, they made single needle width turns into them, away from them, or whatever the situation was. When they got back to the critique, it turned out that most of the guys had hits on the target airplanes, except that first guy was the squadron commander of the unit. He said that they took violent maneuvers against orders; made him look bad. He wrote that up and put it in his OER. Now somebody wasn't big enough back at the command, so they accepted that, and he never got promoted to lieutenant colonel.

I was promoted to below-the-zone colonel at the same time he was passed over for lieutenant colonel. I couldn't believe it. We were captains together, the same vintage. He eventually retired as a major.

A: What does he do now?

D: He is out in Montana. I really don't know what John is doing.

A: What is his last name?

D: John Clark.

A: A friend of mine told me that he knew--this was years ago down at Eglin--a guy who had killed two MIGs in North Vietnam that got passed over for lieutenant colonel. You would think if anybody would have been blessed and rewarded, the ultimate Air Force fighter pilot with MIG kills would be; and he doesn't even make lieutenant colonel. In fact, I almost want to say that he didn't make major, but that doesn't sound right; but I know he didn't make lieutenant colonel.

Is there anything that you want to add, General, that we may not have talked about?

D: I will tell you one other story about being the A/Vice. Earlier we were talking about dealing with the Pakistanis.

We had sold the Pakis the F-16s and the AIM-9 missiles. Intelligence had indicated that the Pakis were packaging an AIM-9 missile and were going to send it to China. This was in clear violation of the third party sales agreement. Somehow they came to me with that word. I knew the Intelligence Chief at the time. There was a real concern about this, that they were about to catch them doing something wrong.

I called their Attache. This was one of the reasons I always felt it was good to have a very personal relationship with some of these people. He came over. His name was Alfat Shah. He is now the head of their military academy. I think he was a wing commander at the time.

DRIESSNACK

He came into the office, and I said, "I didn't want to talk to you on the phone about this, but I have some information that you and I need to discuss just as friends, then you need to take some action. We have a close relationship country to country with Pakistan. You know that I bent over backwards to get you those F-16s earlier because they couldn't be gotten out of Fort Worth. We couldn't have delivered them out of our stocks, but we worked that problem, and we did that so we wouldn't embarrass our State Department and your Premier." He acknowledged all that.

I said, "We also sold you the AIM-9C missile. The agreement that we made was that you never sell or give those to anybody else without telling the United States, and then we make that decision. Otherwise, we stop sales." He said, "I understand that." I said, "Well, I happen to know that there is an AIM-9C missile packaged right now for shipment to China." He said, "I can't believe that." I said, "Believe me, there is. I want you to check that out and stop it and then explain to me why you are doing that. Why would you jeopardize this relationship that is just starting? This will be blown up out of all proportion. What is going on?" He said, "I will have to go back and wire my headquarters right away." I said, "That is exactly what I want you to do."

He went back, and the next morning he came back over. He said, "It's true. There was a missile. They wanted to put that missile on their MIG fighters as well as the F-16. They bought those MIGs from China. Instead of them doing the wiring in Pakistan for that, they wanted the Chinese to wire it. The only way they could do it was to get the

missile back in the factory to look at it. China said, 'Send us the missile, and we will wire it. We can't put the wiring in without understanding what is happening.'

You don't really have to do that. You can wire it because we do it here all the time. You can give them the wiring intersections that they have to have for the connections and the amount of voltage that has to go to each of those places, and that can be wired. Nevertheless, the Chinese wanted to get the missile. So they turned that off, and Intelligence verified that the missile was uncrated.

That tells you something about the effectiveness of our Intelligence, for one thing, and also the ability to work quickly if you want to. We turned that off and saved an embarrassing incident. There were cases like that that I got involved with which made the job very interesting because they were international things that were going on; things like that that State and others never knew anything about.

A: Incidentally, you never did get overseas outside of Korea. Was this by default?

D: No. I would have given my right arm to get overseas. My wife feels that she was cheated completely because we never had an overseas tour. What happened was, I got in the R&D business. I started out in civil engineering with my basic degree; and when I got in SAC, I got into maintenance. Then there was a big discussion about which had priority: maintenance or civil engineering, and maintenance won out.

## DRIESSNACK

There is a case; they took my CE specialty code off of my form, and they wiped out my civil engineering qualifications. At SAC I was a maintenance officer, so that prevailed; that had the priority. Had I stayed in civil engineering, I'm sure that I would have had a lot of overseas tours because they never had enough civil engineers so I would have ended up back and forth.

Then I got in the R&D business. I came to AFIT on the graduate program and got assigned to Systems Command. Once I was in Systems Command and had established some credentials, then I was asked for in different places. I never got out of the command. Having been in that, then I somehow got in the money business. I worked in the management systems business, and that was under the Comptroller. Then I became a comptroller asset and was asked for by the Assistant Secretary/FM to work on a project in FM. When I left there, I went back to Systems Command to implement that, and I was again in the comptroller side of the house, and I ended up as the comptroller at ASD; but I had never been a budget officer until I was the Director of Budget.

I had a cost analysis background and a management systems background, and that is what gave me a broader interest in things than just collecting and putting together the budget. You do that one year, and you can learn it. You don't have to do it 20 years to understand that. It was an interesting career.

When I finally retired, I had a nice note from Verne Orr who was in Pasadena at the time on a previously planned trip, so

he didn't come to the retirement party. I had a great love for the old man, and as I said, I was one of the first people he talked to when he came into the Pentagon. He came down to see the Comptroller before he was ever confirmed. He said, "I figured I would find the Comptroller working because the money people always have to be on the job." It was Saturday morning. He had come out of finance in California.

We sat and chatted for quite a while, and that is when I gave him a lot of advice about what he ought to be doing in the Air Force and his visibility in the Air Force, and he followed that pretty much. When I got to be the A/Vice and got to interface with him regularly, it was working with an old friend, so to speak. I knew him as well or better than anybody on the Air Staff. We always got along very well. I went to his staff meetings, and I used to go in and have private conversations with him on things. The Fitzgerald thing is an example. I think he was beholden to me for having given up that grudge and taking the action that I did.

He wrote me a very nice letter, but when I got the letter, I was a little disappointed and shocked. In a sense, the letter expressed disappointment in my retiring but understood my personal reasons. He said, "Because the command that the Chief and I had in mind for you would have benefitted greatly from your experience and talent----"

I went in to see him after I was retired and he was back in town. I said, "I read your comment. That would have been better left unsaid. Had I known at all that somebody was



DRIESSNACK

going to give me a command, I would never have retired. Let me give you some advice. I have never really been a fan of the personnel system. We are secretive about everything and have this tendency not to tell anybody what is in mind for them. When somebody works for me and I have something in mind for them, I tell them what I'm planning and why I'm doing this. But no one has ever done that to me, and it is not the natural thing to do in the Air Force. But if you and the Chief had decided I was going to take over a command, I would have been in to this day. I didn't think I had that opportunity because I only have 18 months"--not quite 2 years--"to serve." I came in the first of March, so I would have had to leave March or April 1985.

I said, "I could have stayed. What command was it?" I figured it might have been Log Command, and the commander wasn't going to retire until that fall. That would have given me, at the most, 18 months in the command. I didn't think that was fair. There is not much you can do; well, maybe you can. I figure you ought to be around at least 2 years. I would have very happily taken a fourth star.

A: I can't imagine him saying that.

D: That gnawed at me for several months. If I had any inkling at all; I suppose I could have gone in to the Chief--a lot of people did--and said, "Do you have anything more in mind for me? Otherwise, I'm going to punch out." I watched people do that, and they sort of precipitated moves; said, "Hey, we really don't want to lose this guy. Let's do something." They might have moved him ahead of someone else that should have been there. We have lost a lot of good

people because we haven't communicated with them, and people more forceful or up front have gone in and put themselves in front of other people, and I never thought that was right. I never did ask for an assignment. In my career I took whatever they gave me, and I have had some I didn't like at all.

The last job in the world I wanted was to be Director of Budget. I really wanted to be the commander out at the Contract Management Division. I felt we could really make money for the Air Force by more efficiently operating our plants. Somehow we had to get our arms around that problem. I had some ideas of things that I wanted to do in the plants. There were 23 of them out there where we had cognizant of the major manufacturers in this country. I thought I could have done something in that regard. Evans said, when he told me I was going over as Director of Budget, "I've got good news and bad news. The good news is that you are on the two-star list. The bad news is that you are going to be the Director of Budget."

When I went over to that job, Blanton, who was in there, hadn't been there that long and had moved on. They needed somebody in L&L, and he had been working with the Congress so he seemed to be an obvious choice for that job. Jones put him in that job, and I got to be the Director of Budget. Well, that led to being the Comptroller and the A/Vice.

I don't know what route I would have taken if I hadn't taken that route. I was over in Systems Command. I could have gone out and taken over one of the product divisions or stayed right in Systems Command and been a contender for the

DRIESSNACK

commander of Systems Command. You never know how that goes. I enjoyed what I did. I felt I made a positive contribution wherever I was. There were some cases where I knew I was the only one in the room that raised the question that either resulted in some action or stopped some action that was dumb. In that regard, you say that you are glad that you were there when you were there. It has been a good career for me.

A: How many children?

D: Four.

A: Where are they, and what are their names?

D: The oldest one is Trina. She lives here in town, Falls Church. She went to Penn State; married a fellow named Eager who is a computer programmer with MCI, and she knew him from Penn State. They were in computer lab together. She has a boy and a girl. She works on the Hill. She came out of school and went to work in the mail rooms and has had every job in the Senator's office. She worked for Senator Hugh Scott from Pennsylvania because Pennsylvania was our home State, and he only hired people from Pennsylvania. Not all of them are like that. She had that opportunity.

She liked the Hill and eventually ended up working for Senator Cohen from Maine. He is on the Armed Services Committee and the Intelligence Committee. As a matter of fact, he has written a book with Hart [Senator Gary], sort of a spy thriller just recently out. She was the office manager there and very good at administrative things.

When she had her second child, she decided she wasn't going to work full time. Now she works part time, so she goes in once or twice every week and does whatever job needs to be done because she has had them all. They let other people go on vacation, or people don't show up, and they know she is coming in every Thursday and does whatever needs to be done. She trained the girl who is now the office manager. She took her with her from office to office; I think she has been with her from the beginning.

The second one is also a daughter. She is a pediatric nurse practitioner out on Long Island at Stoney Brook; taught nursing for a couple of years. She has a master's out of Yale Med School in nursing and went through pediatric training and certification up there. Her name is Martha Hill. She has two children also, a boy and a girl. Her husband Joe is a private school teacher in Long Island.

The oldest son is Chuck. He went to West Point. Both the boys have about the same background. They were both Eagle Scouts. They were both athletically inclined, both were captains of their team, both were on a State championship track team. The older one, Chuck, had the 880 record for high schools in Maryland at the time. They were both presidents of their class of their student council. We lived at Andrews, and they were bused to a mixed school. We were caught up in that whole syndrome of things. One followed behind the other by 2 years. They were both in the same thing. They were both track, and John was also a soccer player. He is the biggest of the bunch, and he played soccer because he didn't like the football coach in junior high. When he came here, he went out for soccer and

DRIESSNACK

did very well. He was on the team that went to the State championship playoffs for 2 years, and he was on the State championship track team. Chuck got an appointment to West Point. He is now in Air Defense and is a battery commander at Kaiserslautern, Germany. He graduated in 1981.

A: Is he going to make a career of the military?

D: Yes. I'm surprised at both the boys because I never fostered a career. I never pushed them. They were born in a military hospital, and they have had their whole life with me in the military, which included all through college. They know what our life has been like and what we have been able to do and what I have been able to do with them. I spent a lot of time with them in Scouting. I went camping with them and participated in things. I tried not to miss an athletic meet. Some of them I didn't get to that were away, but I tried to get to every one of the home meets. Sometimes I would get there late.

(END SIDE 1, TAPE 19)

D: John went to Penn State, and he is in industrial engineering. He wanted to get in business, and I tried to convince him that if he was going to do anything at all later on, he ought to get in some kind of an engineering background. If you are not sure about what you want to do, I'm convinced that an engineering education teaches you to think straight. It teaches you to think in a problem-solving approach to things. If you are undecided, you ought to take a basic engineering course. He was good in math and

science. In fact, all four of them were good in math, and I had a good math background.

He joined ROTC and ended up with an ROTC scholarship and really got involved with it. At one point in his senior year he was the wing commander of the unit. I used to go up and be their speaker at either the Christmas banquet or an Arnold Air Society banquet.

I found out later on that Carl Smith's son was also in this unit, and I met Carl there at one of these affairs. John graduated in 1983 and went out to Wright-Patterson and was in the automated test equipment SPO. He got his own project after a bit. He was a brand-new second lieutenant, and he got thrown into the middle of all this so we had lots of conversations on the telephone about how do you do this or handle that.

Well, I had been at Wright-Pat for two tours. At least I was able to give him advice on who to go see and so forth. He was concerned with the quality of that particular contract, and I said, "There is a quality section down the hill in Production. Go down and get a quality guy and take him with you. Let him make the decision. You can't make that decision." That is what he did. He is an outspoken sort of kid.

I remember one time he was giving a briefing, and things were not all roses on the program. There were some things that had to be done; "Here is the problem; here is what I recommend we do," and he was taking it on up through the chain. It got to his colonel, and they wanted him to change

DRIESSNACK

the briefing. They didn't want to go forward to the full colonel with these problems.

He said, "I wouldn't do it. I told them, 'If you want to give the briefing, you change it, but if I'm giving the briefing, this is the way it is.'" I said, "Stick with it." Don't ever let anybody change your OERs that you write, or don't let anybody change the briefing that you want to give. If it is your work, then you keep it as your work. He did, and he built himself quite a reputation out there. He went down to SOS, the first time he changed assignments, and he is now on the ASD staff that looks at technology transfers. He is enjoying that very much.

In both cases they are growing. They both have had what I consider to be normal problems in the sense that they have bucked up against people that don't see the way they see, but they outrank them. Or the guy that is their superior is an idiot. I try to counsel them a little bit that that idiot will soon be gone, and at one time he was a lieutenant. He didn't learn or take a lesson from some guy that he learned from. I said, "Just put that in your computer and remember that is not the way to handle it. That is not the way to run an office. For now swallow hard and accept that."

He made captain about a month ago, and I went out and pinned on his bars. It was kind of satisfying. In fact, he was born at the hospital at Wright-Patterson. He has come full circle. Both the boys are married and both have a daughter.

A: Is your son at Wright-Pat going to stay in the Air Force?

D: It looks like he is. They both look like they are going to make a career out of it. They are very satisfied in what they are doing. Both their wives have accepted this role.

The wife of the one at Wright-Pat works. She was a law enforcement major at school. She is working with delinquent and disturbed kids. She did that for the county out there in Dayton with boys, and then she started one for girls. She talked them into that. Her father was a family doctor from around the Pittsburgh area. This is something she has been interested in and is very good at. We are really surprised and pleased with what Katie is doing. John seems to be very happy in what he is doing and seems to be good at it. I suspect he will stay at it for a while.

Chuck every once in a while gets disappointed. He has been at one job for a long time and thinks he ought to change and go to something else. I talked to him last week, and things are looking up. He has a new first sergeant who he thinks is just great. Again, it is a people business no matter what you are in. You can have all the technology you want. He is in a missile unit. The whole battalion went over as a unit, and they handpicked the people. He graduated first in his class at Fort Bliss so they picked him as one. The other two battery commanders have been in those kind of units before. He came out of a gun unit, so this is something new for him. He is doing good, and I hope to get over to see him.

I pushed neither of those boys into the military. They both went in on their own. The thing that got them there, interestingly enough, was that when they were getting ready



DRIESSNACK

to go to school--and Chuck started it--and looking for a college, he had in mind that he wanted to go to an Ivy League school. I said, "Okay, if you think you can hack it academically. You are not going to be around here, so I'm not going to force you to do your math homework. You are on your own."

John was very disciplined in what he did. Chuck was not disciplined at all. He left it to the last minute. He would go up and take a nap after supper because they were running constantly, but he would get up in time to go out and run at night before he went to sleep. I always figured he would break a leg stumbling on something in the dark. He was very faithful about that, but he wouldn't do his homework.

When he was looking around for a school, he was invited to a couple of places. The coach at the University of Virginia invited him down there. He went down for a weekend and stayed with a friend. They offered him a half scholarship. The coach at Brown and Cornell, based on his records, wanted him to come to school; so he had some entrees like that, but no scholarship in the Ivy Leagues. They went to people that couldn't afford to go to school, low income and minorities.

Chuck, for the first time in his life--he doesn't have a biased bone in his body--came up against reality. I said, "That is just the way it is, Chuck." In fact, the No. 2 guy on the team was black, and he got a full scholarship. Chuck could not accept the fact that this guy got a full scholarship, and he was the No. 1 runner on the team; also the captain of the team, the president of the student

government, an Eagle Scout; all this stuff. The only thing this other kid had was No. 2 on the team and his race. I said, "Welcome to the real world, Charlie. That is the way it is. Nobody said it's fair, but it hasn't always been fair for him. All of a sudden he now has advantages."

Then we began talking about scholarships. I said, "The only thing you can do on your own merit that I'm aware of--I went to school on a scholarship; my father could never afford to send me to college--is the military. You can get an ROTC scholarship if you want to. You can go to the Academy if you want to. Those are all on your own. It has nothing to do with what your father is or how much money he makes or what your race is. The military is blind. It is just you. If you want to, I will help you fill out some forms."

He started to fill out some ROTC forms. In the process of doing that, he got a letter from Annapolis and West Point. His coach had sent his name in. They both interviewed him, and Annapolis offered him a scholarship to their prep school to get his SATs up. West Point would take him right away. So that was an ego kind of thing. He said, "I'm not going to prep school. I can go right to West Point."

He and John spent a weekend up there and fell in love with the place. We took them up, but John decided he didn't want to go there on that same trip. I don't think John could have stood the regimen. He is regimented himself, but when somebody would get on his case, he would get right back on them. He needed a little more maturing on his own.

A: They never considered the Air Force Academy?

DRIESSNACK

D: Never did, and I never pushed anything. The one thing I did do; I used to be very interested in the sports program at the Air Force Academy. I looked at their track and whether they had an outdoor rubber track. I did get money to expand the library out there. We doubled the size of the library. My wife is a librarian. There are things like that where you have a personal interest. They needed one; I was interested in it. I said, "I will get you the money." As the Comptroller, I put up the money for the expanded library out there.

I looked at the athletic program out there. Somebody asked me how I knew so much about the track. I said, "I have a son that runs track, and he just went up to West Point." They couldn't get over that. I said, "Well, nobody out here ever asked me, and I wasn't going to push it." Here we had a kid that they would have loved to have had. They don't recruit here in the East so much. Annapolis recruits in this area and grabs all the athletes.

We are pleased with the kids. You can raise a family in the military. You move around, but if they can grow with it, it is very broadening for them. If they can't cope with it, then you have a problem. There are those that cannot cope. You take them out of a comfortable environment too often.

Marty, the second daughter, was captain of the pom-pom squad. She was just elected in her junior year for the senior year coming up. We yanked everybody up and went to Wright-Pat, and she spent her senior year out there. That is very tough. She first announced she wasn't going. We said, by god, she was! They all play an instrument. My

wife played a clarinet, and they all play something. I play the harmonica and the radio. The two boys play the trumpet, and the girls play the flute and clarinet. They were always in the school bands, too; always a part of that background or culture. That has been good for them. My wife always sings in a church choir, and John was in the choir with her in his last years in high school.

When we went to Wright-Pat, it ended up that Marty couldn't get in the band, couldn't be in the pom-pom squad, couldn't be a cheerleader, and she was frustrated because she was always active in school. On a lark, she and a couple of girls went to the Junior Miss Contest in the county, and she became the County Junior Miss. As a result of that, she went to the State of Ohio and came pretty close, but she was Miss Congeniality in the State. Military life for kids is a whole different experience.

(END OF INTERVIEW )





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