
This is a reproduction of a library book that was digitized by Google as part of an ongoing effort to preserve the information in books and make it universally accessible.

Google™ books

<https://books.google.com>



ENGIN. LIB.
UC
267
U58215
1962
Suppl.

U.S. Dept. of Defense

UNIVERSITY
OF MICHIGAN
JAN 6 1964
ENGINEERING
LIBRARY
DOCUMENTS SECTION

B 747,993 DUPL

PRELIMINARY ISSUE

SUPPLEMENT NO. 1

to

DOD AND NASA GUIDE

PERT COST

Output
Reports

March 1963

PERT COORDINATING GROUP



OFFICE OF THE SECRETARY OF DEFENSE



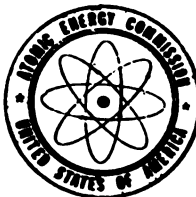
DEPARTMENT OF THE ARMY



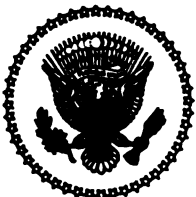
DEPARTMENT OF THE NAVY



DEPARTMENT OF THE AIR FORCE



ATOMIC ENERGY COMMISSION



BUREAU OF THE BUDGET



FEDERAL AVIATION AGENCY



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Engineering
DEPOSITED BY THE
UNITED STATES OF AMERICA

2-14-69

FOREWORD

Engin. Library

UG
267
U550.15
1962

Suppl. 1

These uniform PERT Cost Output Reports have been developed by the Technical Subcommittee of the Inter-Agency PERT Coordinating Group and are based on those contained in the DOD and NASA Guide, PERT Cost Systems Design, June 1962. The document represents experience from the Mauler, TFX, and Navy Implementation Teams as well as the Air Force Systems Command, Army Management Engineering Training Agency, Bureau of Ships, National Aeronautics and Space Administration, Atomic Energy Commission, Federal Aviation Agency, and similar organizations and agencies.

The forms have been approved by the PERT Coordinating Group and have been authorized for use on current contracts of the Department of Defense including:

TFX, Mauler, Subroc, Titan III, MMRBM, Lance, Polaris, certain contracts of the Bureau of Ships covered by a military specification and previously authorized by the PERT Coordinating Group.

Bureau of the Budget Number 22R 226 is authorized for this purpose.

It is the intent of the PERT Coordinating Group that this document can serve for all agency members as an exhibit in a contract, a reference or the basis of a specification. The Navy Specification No. Mil P-23189A(Navy) 25 Oct 62 is being revised to incorporate these forms.

This particular draft has been printed by the Government Printing Office so as to provide public distribution and review. Following this issuance an industry conference will be held by the PERT Coordinating Group late in September, 1963. Army Management Engineering and Training Agency at Rock Island Arsenal, Illinois, will be host to the Group. One item of the agenda is an explanation of the form by the Technical Subcommittee followed by presentation on actual use.

This conference will serve as a basis of informing industry and other attendees of the progress to achieve uniformity in the Output Reports and to incorporate subsequent suggestions prior to a re-submission to the Bureau of the Budget and the Industry Advisory Council toward the end of the Calendar Year.

A revised Supplement No. 1 will be issued after that action.

PERT COORDINATING GROUP

TABLE OF CONTENTS

| | <u>Page No.</u> |
|-------------------------------------|-----------------|
| MANAGEMENT SUMMARY REPORT | 1 |
| PROBLEM ANALYSIS REPORT | 8 |
| PROGRAM/PROJECT STATUS REPORT | 9 |
| ORGANIZATION STATUS REPORT | 16 |
| FINANCIAL PLAN AND STATUS REPORT | 24 |
| MANPOWER LOADING REPORT AND DISPLAY | 31 |
| COST OF WORK REPORT | 39 |
| COST OUTLOOK REPORT | 43 |
| SCHEDULE OUTLOOK REPORT | 47 |
| COST CATEGORY STATUS REPORT | 51 |
| PERT MILESTONE REPORT | 57 |
| GLOSSARY OF TERMS | 61 |

PERT COST

MANAGEMENT SUMMARY REPORT

The PERT COST Management Summary Report shows current and projected schedule and cost status of the total program and of each of the major component items or elements within the program. The report is prepared at several levels of the work breakdown structure and for all contracts or a specified combination of contracts, depending upon the needs of management. The report may be machine produced, but when it is manually prepared, the necessary information is derived from the Program/Project Status Report.

The first line of each report shows total costs and significant schedule information for the summary item shown in title block (2). Subsequent lines show each subdivision of that summary item at the next lower level of the work breakdown structure; thus, each page of the report shows the time and cost status and all the next level backup information for a single summary item. Since each page of the report is a concise summary of one element of the program or project, the report is usually divided for distribution to appropriate government and contractor managers.

PERT COST
MANAGEMENT SUMMARY REPORT

| | | | |
|--|-----------------------------------|-------------------------------|--|
| ABC - MISSILE AND GHE LEVEL/SUMMARY ITEM: 3/BALLISTIC SHELL 22300 | REPORTING ORGN. XYZ - A&S DIVN | CONTRACT NO. 33(600)28369A | REPORT DATES TERM (SPAN): TCTAL PROGRAM CUT OFF DATE: 30MAR63 RELEASE DATE: 10APR63 |
|--|-----------------------------------|-------------------------------|--|

| ITEM | COST OF WORK \$(,000) | | | | TOTALS AT COMPLETION | MOST CRIT SLACK (WKS) | COMPL DATE | SCHEDULE | REMARKS |
|-----------------------------------|------------------------|--------------------------|--------------|--------------------|----------------------|-----------------------|-------------------------------|--|--|
| | WORK PERFORMED TO DATE | (OVERRUN) UNDERRUN | PLANNED COST | LATEST REVISED EST | | | | | |
| BALLISTIC SHELL LEV 3 22300 | 19,600 | 20,500 (.05) (900) | 35,200 | 39,650 | (.13) (4,450) | 0.0 | 31DEC63 31DEC63 | 1963 1964 YRUEM-AMJMSONDJEFMAMJASONDJ MAMJASONDJ MAMJASONDJ | See Program ANALYSIS RPT ITEMS 1-3 |
| NOSE FAIRING LEV 4 22310 | 27 | 25 .07 2 | 175 | 175 | | 8.6 | 10DEC64 10JUN63 10AUG63 | E L L S | ITEM 6 |
| FIRST STAGE LEV 4 22320 | 6,700 | 6,400 .04 300 | 9,200 | 9,700 | (.05) (500) | 0.0 | 30APR64 31DEC63 31DEC63 | E L L S | ITEMS 9-12 |
| SECOND STAGE LEV 4 22330 | 1,645 | 1,650 (.02) (70) | 3,500 | 3,570 | (.02) (70) | 0.0 | 15JUN64 31DEC63 31DEC63 | E L L S | ITEM 15 |
| | | | | | | | | | TIME NOW |

Figure 2
-3-

DEFINITIONS
PERT COST
MANAGEMENT SUMMARY REPORT

① The designation of the total (or a part of the total) system program or project that is identified with the reporting organization. For example, if reporting organization XYZ has the Missile and GHE part of weapon system ABC, the program or project definition would read:

ABC - Missile and GHE

② LEVEL/SUMMARY ITEM: The level number, noun description, and summary number of the summary item for which the report is being prepared.

③ REPORTING ORGANIZATION: The name or identification of the organization responsible for the work identified in the Contract Number ④ and Program/Project ① blocks.

④ CONTRACT NUMBER: The numeric designation of the contract(s) or agreement(s) included in each report (e.g., 33(600)28369A). When a report is prepared for a large program or project, several contracts may be included. Therefore, each contract number (or its representative code) would be indicated in this space. It may be noted that by sorting on contract number, a report can be prepared for each individual contract.

⑤ REPORT DATES:

TERM (SPAN): The beginning and ending date for the total increment being covered in the report. For example:

1 Jan 62 to 31 Dec 62
Total Program (Project)
Contract

CUT OFF DATE: The accounting cut off date for the period of actual costs being reported.

RELEASE DATE: The date that the report is to be released to management. In the event of subsequent

rerun and redistribution of reports, it is permissible to suffix the report release date with a revision number.

- ⑥ ITEM: The level number, noun description, and summary number of each summary item on the work breakdown structure for which time information and cost information are presented in the report. The first item shown is the highest item for which the particular report is prepared and should be identical with the item named in the Level/Summary Item block ②. Three lines are available for each item description, and, if necessary, the top line may be extended into the Cost of Work columns ⑦-⑫.
- ⑦ VALUE (Work Performed to Date): The total planned cost for work completed within the summary item. This value is determined by summing the Planned Cost ⑩ for each completed work package. If a work package is in process, the part of its total planned cost which applies to work completed is approximated by applying the ratio of Actual Cost ⑧ to Latest Revised Estimate ⑪ for that work package.
- ⑧ ACTUAL COST (Work Performed to Date): The actual expenditures incurred plus any prespecified types of unliquidated commitments (unliquidated obligations or accrued liabilities) charged or assigned to the work packages within the summary item.
- ⑨ (OVERRUN) UNDERRUN (Work Performed to Date): The Value ⑦ for the work performed to date minus the Actual Cost ⑧ for that same work. When value exceeds actual cost, an underrun condition exists. When actual cost exceeds value, an overrun condition exists. The (overrun) underrun is also expressed as a percentage of the value of work performed to date immediately above the dollar amount. Parentheses are used as a notational device to indicate overruns. (Over)underruns in excess of one billion dollars print as 999,999.
- ⑩ PLANNED COST (Totals at Completion): The approved planned cost for the total summary item. This is the total of the planned costs for all work packages within the summary item.
- ⑪ LATEST REVISED ESTIMATE (Totals at Completion): The latest estimate of cost for the total summary item. This estimate is the sum of the actual costs plus estimates-to-complete for all the work packages in the summary item. This estimate is also known as anticipated final cost. For a completed item, the latest revised estimate equals the Actual Cost ⑧.

- ⑫ PROJECTED (OVERRUN) UNDERRUN (Totals at Completion): The Planned Cost ⑩ minus the Latest Revised Estimate ⑪ for the total summary item. When planned cost exceeds latest revised estimate, a projected underrun condition exists. When latest revised estimate exceeds planned cost, a projected overrun condition exists. The projected (overrun) underrun is also expressed as a percentage of the planned cost immediately above the dollar amount. Parentheses are used as a notational device to indicate (over)underruns. (Over)underruns in excess of one billion dollars print as 999,999.
- ⑬ MOST CRITICAL SLACK(WEEKS): The slack, in weeks, associated with the "E" and "L" notations shown in the Schedule Completions section ⑭. This represents the worst slack (least algebraic) with respect to designated program or project end points for any of the activities within the summary item.
- ⑭ COMPLETION DATE: The day, month, and year of the "S", "A", "E", and "L" positions shown in the Schedule Completions section ⑮.
- ⑮ SCHEDULE CALENDAR: A calendar time reference for display of schedule completions. The calendar contains one division for all prior years, two years divided by months, four years by years, and one division for all later years. When the calendar is printed by a computer, one space is left between the months before and after the Cut Off Date ⑥. A "Time Now" line is printed in this space. If the cut off date falls between the 10th and the 30th of a month, that month is considered to be the "past month" and it appears to the left of the Time Now line. If the cut off date falls between the 1st and 10th of a month, that month is considered to be the "next future month" and it appears to the right of the Time Now line. Each year the calendar is adjusted so that two years, by months, appear ahead of the Time Now line.
- ⑯ SCHEDULE COMPLETIONS: Two types of schedule completions are displayed in this section:
- a. The scheduled (S) or actual (A) completion of all work contained within the summary item shown in the item column.
 - b. The earliest (E) and latest (L) completion for the most critical schedule element or effort with respect to designated program or project end points within that summary item.

The symbol "S" is used to show the scheduled completion date of all work within the item. The "S" is located under the calendar position of the directed date (T_D) or the scheduled completion date (T_S) if no T_D is established for the last activity within the summary item. If T_S has not been established for the end of the total item, "S" is placed at the calendar position which represents the earliest completion date (S_E) for the last activity in the item. When the total item has been completed, the symbol "A" is placed under the calendar position of the actual completion date for the item.

The "E" and "L" symbols represent the earliest completion date (S_E) and latest completion date (S_L) for the most critical schedule element or effort within the item with respect to designated program or project end points. The most critical element within an item may or may not be the same as the last scheduled item. This will depend on whether there are critical interfaces within the item which pose more serious constraints from a program or project point of view than the completion of a total item itself. The most critical element is the one with the worst slack (least algebraic) within the item. The "E" and "L" positions, therefore, portray the earliest completion date and the latest completion date for that activity within the summary item with the worst slack status. When several activities have the same worst slack condition, (for instance, when they are all on the same path), the "E" and "L" positions reflect the last activity on that path.

①7 REMARKS: Notations made by an analyst to indicate critical cost and schedule conditions within summary items. Reference may be made, by paragraph number, to the Problem Analysis Report for a detailed analysis of the critical conditions. The heading for this area of the report is not computer printed.

PERT COST

PROBLEM ANALYSIS REPORT

The Problem Analysis Report is a narrative report prepared to supplement the Management Summary Report as well as other reports which identify significant problems.

The report contains three basic sections:

- . a summary analysis of the total contractor's portion of the program covered by the Management Summary Report;
- . an analysis of tasks where current or potential problems exist. Problems may be schedules, costs, technical performance, or combinations of these;
- . a narrative description of:
 - . the nature of the problem;
 - . the reasons for cost and/or schedule variance;
 - . the impact on the immediate task;
 - . the impact on the total program; and
 - . the corrective action: what action, by whom, when, and expected effect.

Additional instructions for preparation of this report will be established by the Government and the contractors for each program or project.

PERT COST

PROGRAM/PROJECT STATUS REPORT

The Program/Project Status Report is a comprehensive computer-produced output report. It is organized to reflect the end item work breakdown structure and provides time and cost information from the work package level up to the top of the program or project.

For each work package and summary item shown on the report there is a line of item description followed by a line of significant time and cost information. The first line presents data for the summary item shown in the title block (2). Subsequent lines show all subdivisions of that item down to the work package levels. (Work packages may appear at different levels of the work breakdown structure.)

The primary purpose of the Program/Project Status Report is to back up the Management Summary Report. The two reports contain similar information, but whereas the Management Summary Report highlights information for a manager, this report retains detail for an analyst. The Management Summary Report is divided for distribution and the Program/Project Status Report remains intact as reference material for the entire portion of the program or project for which reports are prepared.

The standard sorting procedure for this report arranges summary items and work packages in the order determined by the work breakdown structure. However, other sorting sequences may be used; e.g., a sequential listing of work packages by charge number; a listing of only completed work, in-process work, or future work, etc.

PERT COST
PROGRAM/PROJECT STATUS REPORT

| | | | |
|--|-----------------|---------------|----------------------------|
| ABC - MISSILE AND GHE | REPORTING ORGN. | CONTRACT NO. | REPORT DATES |
| LEVEL/SUMMARY ITEM: 47 FIRST STAGE 22320 | XYZ - A&S DIVN | 33(600)28369A | TERM (SPAN): TOTAL PROGRAM |
| | | | CUT OFF DATE: 30MAR63 |
| | | | RELEASE DATE: 10APR63 |

| CHARGE OR SUMMARY NUMBER | IDENTIFICATION | | TIME STATUS | | COST OF WORK \$(000) | | | | TOTALS AT COMPLETION | | | | | |
|----------------------------|----------------|----------|-----------------|----------------|--------------------------------------|------------------------------|-----------------------|------------------------|----------------------|---------------|------------------|-------------------|----------------|----------|
| | L | E | FIRST EVENT NO. | LAST EVENT NO. | SCHED OR ACT (A) & LATEST COMPL DATE | EARLIEST & LATEST COMPL DATE | MOST CRIT SLACK (WKS) | WORK PERFORMED TO DATE | COST TO DATE | AT COMPLETION | LATEST PROJECTED | | | |
| | | | | | | | | VALUE | ACTUAL COST | (OVERRUN) | PLANNED COST | REVISIED ESTIMATE | (OVERRUN) | UNDERRUN |
| FIRST STAGE 22320 | 4 | 12000999 | 12000199 | 12000199 | 30APR64 | 31DEC63 31DEC63 | 0.0 12000612 | 6,700 | 6,400 | .04 300 | 9,200 | 9,700 | (.05) (500) | |
| INSTRUMENTATION 22322 | 5 | 12000700 | 12000400 | 12000400 | 10JAN64 | 31DEC63 31DEC63 | 0.0 12000612 | 165 | 172 | (.04) (7) | 415 | 430 | (.04) (15) | |
| POWER CABLE ASSY. 22323 | 5 | 12000899 | 12000800 | 12000800 | 15FEB64 | 15JUN63 15JUN63 | 0.0 12000783 | 270 | 200 | .26 70 | 1,250 | 1,180 | .06 70 | |
| ELECTRICAL DESIGN 32164 | 6 | 12000700 | 12000420 | 12000420 | 25JUL63 | 10JUN63 25JUN63 | 2.1 12000682 | 110 | 112 | (.02) (2) | 205 | 209 | (.02) (4) | |
| ELECTRICAL DESIGN 32165 | 6 | 12000869 | 12000860 | 12000860 | 12JAN64 | 15JUN63 15JUN63 | 0.0 12000783 | 22 | 20 | .10 2 | 175 | 175 | | |
| MANUFACTURING 52073 | 6 | 12000690 | 12000410 | 12000410 | 22AUG63 | 10JUN63 25JUN63 | 2.1 12000682 | 55 | 60 | (.11) (5) | 125 | 137 | (.10) (12) | |
| TESTING 78340 | 6 | 12000622 | 12000400 | 12000400 | 10JAN64 | 31DEC63 31DEC63 | 0.0 12000612 | | | | 85 | 84 | .01 1 | |

Figure 4
-11-

DEFINITIONS
PERT COST
PROGRAM/PROJECT STATUS REPORT

① The designation of the total (or a part of the total) system program or project that is identified with the reporting organization. For example, if reporting organization XYZ has the Missile and GHE part of weapon system ABC, the program or project definition would read:

ABC - Missile and GHE

② LEVEL/SUMMARY ITEM: The level number, noun description, and summary number of the summary item for which the report is being prepared.

③ REPORTING ORGANIZATION: The name or identification of the organization responsible for the work identified in the Contract Number ④ and Program/Project ① blocks.

④ CONTRACT NUMBER: The numeric designation of the contract(s) or agreement(s) included in each report (e.g., 33(600)28369A). When a report is prepared for a large program or project, several contracts may be included. Therefore, each contract number (or its representative code) would be indicated in this space. It may be noted that by sorting on contract number, a report can be prepared for each individual contract.

⑤ REPORT DATES:

TERM (SPAN): The beginning and ending date for the total increment being covered in the report. For example:

1 Jan 62 to 31 Dec 62
Total Program (Project)
Contract

CUT OFF DATE: The accounting cut off date for the period of actual costs being reported.

RELEASE DATE: The date that the report is to be released to management. In the event of subsequent

rerun and redistribution of reports, it is permissible to suffix the report release date with a revision number.

- ⑥ CHARGE OR SUMMARY NUMBER: The noun description and charge or summary number of each work package or summary item for which time information and cost information are presented in the report. For a work package, the charge number is the contractor or government charge number (shop order number, work order number) used to identify the work package for purposes of estimating and accumulating costs. The title or short description of the charge number is printed immediately above the number itself. For the summary item, the summary number is the identification of an end item on the work breakdown structure above the work package level. The title or description of the summary item is also printed directly above the summary number.
- ⑦ LEVEL: The number of the level on the work breakdown structure at which the charge or summary number appears.
- ⑧ FIRST EVENT NUMBER: The number of the first event in time (based on S_E) for the work package or summary item. This event number defines the beginning of the work package or summary item in relation to the network.
- ⑨ LAST EVENT NUMBER: The number of the last event in time (based on S_E) for the work package or summary item. This event number defines the end of the work package or summary item in relation to the network.
- ⑩ SCHEDULED OR ACTUAL COMPLETION DATE: The calendar date on which all the work contained in the work package or summary item is scheduled for completion or was actually completed. The scheduled completion date (T_G) is established by management as an internal control on the completion of the work. If no scheduled completion date has been established for the work package or summary item, the column is blank. The actual completion date (T_A) is the date on which all work in the work package or summary item has been completed. When the date in this column is an actual completion date, an "A" is printed in front of the date.
- ⑪ EARLIEST COMPLETION DATE (S_E) AND LATEST COMPLETION DATE (S_L): The earliest calendar date on which the work package or summary item can be completed and the latest completion date on which the work package or summary item can be scheduled for completion without

delaying the completion of the program or project. When the work package or summary item has been completed, this column is blank.

The earliest completion date (S_E), printed on the upper line, is calculated by:

summing the scheduled elapsed time (t_s) values for activities on the longest path from the beginning of the program or project to the end of the work effort; and

then adding this sum to the calendar start date of the program or project.

The latest completion date (S_L), printed on the lower line, is calculated by:

summing the scheduled elapsed time (t_s) values for activities on the longest path from the end of the work effort to the end of the program or project; and

then subtracting this sum from the calendar end date of the program or project.

If the longest path contains activities which are not scheduled, expected elapsed time (t_e) values for the unscheduled activities will be processed as scheduled elapsed time (t_s) values in the calculation of S_E and S_L .

⑫ MOST CRITICAL SLACK (WEEKS): The worst (least algebraic) slack with respect to the designated program or project end points, in weeks, for any of the activities within the work package or summary item. This slack is based on a comparison of S_L minus S_E for each activity. The slack indicated will not necessarily be the difference between the S_L and S_E for the end of a work package or summary item since the worst slack situation may be associated with an activity within the work package or summary item. The number of the network event at the end of the worst slack path within the work package is printed below the slack value. If the work package or summary item has been completed, this column is blank.

⑬ VALUE (Work Performed to Date): The total planned cost for work

completed within the summary item or work package. This value is determined by summing the Planned Cost (16) for each completed work package. If a work package is in process, the part of its total planned cost which applies to work completed is approximated by applying the ratio of Actual Cost (14) to Latest Revised Estimate (17) for that work package.

(14) ACTUAL COST (Work Performed to Date): The actual expenditures incurred plus any prespecified types of unliquidated commitments (unliquidated obligations or accrued liabilities) charged or assigned to a work package. For summary items, the appropriate work package data is summed.

(15) (OVERRUN) UNDERRUN (Work Performed to Date): The Value (13) for the work performed to date minus the Actual Cost (14) for that same work. Where value exceeds actual cost, an underrun condition exists. Where actual cost exceeds value, an overrun condition exists. The (overrun) underrun is also expressed as a percentage of the value of work to date immediately above the dollar amount. Parentheses are used as a notational device to indicate overruns.

(16) PLANNED COST (Totals at Completion): The approved planned cost for the total work package. For summary items, the appropriate work package data is summed.

(17) LATEST REVISED ESTIMATE (Totals at Completion): The latest estimate of cost for the total work package. This estimate is the sum of actual costs plus estimates-to-complete for each work package. For summary items, the appropriate work package data is summed. This estimate is also known as anticipated final cost. For a completed work package or summary item the latest revised estimate equals the Actual Cost (14)

(18) PROJECTED (OVERRUN) UNDERRUN (Totals at Completion): The Planned Cost (16) minus the Latest Revised Estimate (17). When planned cost exceeds latest revised estimate, a projected underrun condition exists. When latest revised estimate exceeds planned cost, a projected overrun condition exists. The projected (overrun) underrun is also expressed as a percentage of the planned cost immediately above the dollar amount. Parentheses are used as a notational device to indicate overruns.

PERT COST

ORGANIZATION STATUS REPORT

The Organization Status Reports provide operating level contractor managers with detailed information breakdown from the available store of data in the PERT COST computer program.

Several types of reports may be produced within this format by changing the sorting sequence of Charge Number (6), Responsible Organization (7), Performing Organization (8), and Resource Code (9)

Following are several examples of possible reports:

Responsible Organization 1, Charge Number 2,
Performing Organization 3, Resource Code 4.

This report shows, for each responsible organization, all work packages which are within its responsibility and a breakout of organizations and skills which will actually perform the work. (Figure 6)

Performing Organization 1, Charge Number 2,
Responsible Organization 3, Resource Code 4.

This report shows, for each performing organization, that portion of each work package assigned to it for accomplishment, with a further identification of the organization responsible for each work package and the resources required.

Performing Organization 1, Charge Number 2.

This report is another version of the above. It shows less detail and is more suitable for higher levels of management. (Figure 7)

Charge Number 1, Performing Organization 2.

This report is a work package listing (shop order ledger) commonly used as an accounting aid.

Totals are shown on the reports for the first and second sort categories only.

PERT COST
ORGANIZATION STATUS REPORT

| | | | |
|-----------------------|-----------------|--------------|--|
| ① | REPORTING ORGN. | CONTRACT NO. | REPORT DATES |
| LEVEL/SUMMARY ITEM: ② | ③ | ④ | TERM (SPAN): PUT OFF DATE: ⑤ RELEASE DATE: |

| CHARGE NUMBER | IDENTIFICATION | | | WORK TO DATE | | | MAINHOOURS TOTALS AT COMPLETION | | | WORK TO DATE | | | DIRECT COSTS \$(000) TOTALS AT COMPLETION | | | TIME |
|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-------------------------|---------------------------------|----------------------|----------------------|-------------------------|------------------------------|----------------------------|---|--------------|-----|------|
| | RESP ORGN | PERF ORGN | RES CODE | ACTUAL | PLANNED | LATEST REVISED ESTIMATE | PROJECTED (OVERRUN) UNDERRUN | ACTUAL | PLANNED | LATEST REVISED ESTIMATE | PROJECTED (OVERRUN) UNDERRUN | MOST SCHED OR CRIT ACT (A) | SLACK | COMPL DATE | | |
| | | | | | | | | | | | | | | | (7) | |
| 18 | 6 | 6 | 4 | 7 | 7 | 7 | 9 | 7 | 7 | 7 | 9 | 5 | 5 | 8 | | |
| XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXXXXXXXXXX | (.XX) | XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXXXXXXXXXX | (.XX) | XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXX | | |
| XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXXXXXXXXXX | DATA | 107 | 12 | 119 | XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXX | | |
| XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXXXXXXXXXX | SPACES | 12 | 119 | XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXX | | |

Figure 5
-17-

PERT COST
ORGANIZATION STATUS REPORT
BY RESP ORGN, CHARGE NUMBER, PERF ORGN, RES CODE

| | | | |
|---|-----------------|---------------|----------------------------|
| ABC - MISSILE AND GHE | REPORTING ORGN. | CONTRACT NO. | REPORT DATES |
| LEVEL/SUMMARY ITEM: 3/BALLISTIC SHELL 22300 | XYZ - A&S DIVN | 33(600)28169A | TERM (SPAN): TOTAL PROGRAM |
| | | | CUT OFF DATE: 30MAR63 |
| | | | RELEASE DATE: 10APR63 |

| CHARGE NUMBER | RESP ORGN | PERF ORGN | RES CODE | MANHOURS | | | DIRECT COSTS \$(000) | | | TIME | | |
|-----------------------------|-----------|-----------------|----------|--------------|----------------------|-------------------------|----------------------|----------------------|-------------------------|--|-----|---------|
| | | | | WORK TO DATE | TOTALS AT COMPLETION | PROJECTED (OVERRUN) | WORK TO DATE | TOTALS AT COMPLETION | PROJECTED (OVERRUN) | | | |
| | | | | ACTUAL | PLANNED | LATEST REVISED ESTIMATE | ACTUAL | PLANNED | LATEST REVISED ESTIMATE | MOST SCHED OR CRIT ACT(A) SLACK COMPL (WKS) DATE | | |
| ELECTRICAL DESIGN, 32164 | 2217 | INSTRUMENTATION | E1 | 16,900 | 30,000 | 31,100 | 41 | 90 | 94 | (4) | 2.1 | 25JUL63 |
| | | | | 16,800 | 20,000 | 20,100 | 40 | 60 | 60 | | | |
| | | | | 3,500 | 7,000 | 7,000 | 12 | 25 | 25 | | | |
| | | | | 1,200 | 5,000 | 5,000 | 5 | 15 | 15 | | | |
| | | | | 2,800 | 3,300 | 3,300 | 9 | 10 | 10 | | | |
| TOTAL | | | | 112 | 205 | 209 | | | | (.02) | (4) | |
| ELECTRICAL DESIGN, 32165 | | PWR CABLE ASSY | DI | 2,200 | 4,200 | 4,200 | 6 | 12 | 12 | | 4.2 | 15JUL63 |
| | | | | TOTAL | | | | 1,300 | 2,600 | 2,500 | | |

Figure 6
-18-

PERT COST
ORGANIZATION STATUS REPORT
BY PERFORMING ORGN, CHARGE NUMBER

| | | |
|--|------------------------------|--|
| REPORTING ORGN, | CONTRACT NO. | REPORT DATES |
| ABC - MISSILE AND GHE LEVEL/SUMMARY ITEM: 3/BALLISTIC SHELL 22300 | XYZ - A&S DIVN 33(600)28369A | TERM (SPAN): TOTAL PROGRAM CUT OFF DATE: 30MAR63 RELEASE DATE: 10APR63 |

| CHARGE NUMBER | RESP ORGN | PERF ORGN | RES CODE | MANHOURS | | | | DIRECT COSTS \$(000) | | | | TIME | |
|---------------|-----------|-----------|----------|--------------|---------|-------------------------|------------------------------|----------------------|---------|-------------------------|------------------------------|-------|-----------|
| | | | | WORK TO DATE | | TOTALS AT COMPLETION | | WORK TO DATE | | TOTALS AT COMPLETION | | | |
| | | | | ACTUAL | PLANNED | LATEST REVISED ESTIMATE | PROJECTED (OVERRUN) UNDERRUN | ACTUAL | PLANNED | LATEST REVISED ESTIMATE | PROJECTED (OVERRUN) UNDERRUN | | |
| 32163 | | 2217 | | 2,200 | 25,000 | 25,000 | | 22 | 75 | 75 | 75 | 3.6 | 15 JUL 63 |
| 32164 | | | | 33,700 | 50,000 | 51,200 | (1,200) | 81 | 150 | 154 | 154 | 2.1 | 25 JUL 63 |
| | | TOTAL | | | | | | 382 | 825 | 831 | 831 | (.01) | |
| 32163 | | 4422 | | 500 | 1,200 | 1,200 | | 2 | 7 | 7 | 7 | 3.6 | 15 JUL 63 |
| 32164 | | | | 3,500 | 7,000 | 7,000 | | 12 | 25 | 25 | 25 | 2.1 | 25 JUL 63 |
| | | TOTAL | | | | | | 297 | 622 | 622 | 622 | | |

Figure 7
-19-

DEFINITIONS
PERT COST
ORGANIZATION STATUS REPORT

① The designation of the total (or a part of the total) system program or project that is identified with the reporting organization. For example, if reporting organization XYZ has the Missile and GHE part of weapon system ABC, the program or project definition would read:

ABC - Missile and GHE

② LEVEL/SUMMARY ITEM: The level number, noun description, and summary number of the summary item for which the report is being prepared.

③ REPORTING ORGANIZATION: The name or identification of the organization responsible for the work identified in the Contract Number ④ and Program/Project ① blocks.

④ CONTRACT NUMBER: The numeric designation of the contract(s) or agreement(s) included in each report (e.g., 33(600)28369A). When a report is prepared for a large program or project, several contracts may be included. Therefore, each contract number (or its representative code) would be indicated in this space. It may be noted that by sorting on contract number, a report can be prepared for each individual contract.

⑤ REPORT DATES:

TERM (SPAN): The beginning and ending date for the total increment being covered in the report. For example:

1 Jan 62 to 31 Dec 62
Total Program (Project)
Contract

CUT OFF DATE: The accounting cut off date for the period of actual costs being reported.

RELEASE DATE: The date that the report is to be released to management. In the event of subsequent

rerun and redistribution of reports, it is permissible to suffix the report release date with a revision number.

⑥-⑨ The sorting sequence for these identification columns is indicated in the report title. Information will appear only in those columns listed in the title.

⑥ CHARGE NUMBER: The noun description and charge number for each work package for which time information and cost information are presented in the report. This is the contractor's charge number (shop order number, work order number) used to identify the work package for purposes of estimating and accumulating costs. The title or short description of the charge number is printed immediately above the number itself.

⑦ RESPONSIBLE ORGANIZATION: The contractor's organization responsible for management of the work package ⑥

⑧ PERFORMING ORGANIZATION: The contractor's department or organization which will perform work on the work package.

⑨ RESOURCE CODE: The contractor's code for a particular manpower skill or material type.

⑩ - ⑬ MANHOURS: Cost information shown in this area of the report may be used for services and facilities, such as computer usage, as well as for direct labor. No totals are shown in these columns.

⑩ ACTUAL (Work to Date): The actual manhour expenditures assigned to a work package or work package subdivision.

⑪ PLANNED (Totals at Completion): The approved planned manhours for the work package or work package subdivision.

⑫ LATEST REVISED ESTIMATE (Totals at Completion): The latest estimate of manhours for the work package or work package subdivision. This estimate is the sum of actual manhour expenditures plus estimates-to-complete. This estimate is also known as anticipated final cost. For a completed work package or work package subdivision the latest revised estimate equals the Actual to Date ⑩.

⑬ PROJECTED (OVERRUN) UNDERRUN (Totals at Completion): The Planned Manhours ⑪ minus the Latest Revised Estimate ⑫. When

planned manhours exceed latest revised estimate, a projected underrun condition exists. When latest revised estimate exceeds planned manhours, a projected overrun condition exists. Parentheses are used as a notational device to indicate overruns.

⑭ - ⑰ DIRECT COSTS \$(000): Cost information in this area of the report represents materials and other direct costs as well as the direct labor dollar value of costs shown in ⑩ - ⑬. Total dollar costs (including overhead) may be used when they are more appropriate to a contractor's normal operation than direct costs.

⑭ ACTUAL COST (Work to Date): The actual expenditures incurred plus any prespecified types of unliquidated commitments (unliquidated obligations or accrued liabilities) charged or assigned to a work package or work package subdivision.

⑮ PLANNED COST (Totals at Completion): The approved planned cost for the work package or work package subdivision.

⑯ LATEST REVISED ESTIMATE (Totals at Completion): The latest estimate of cost for the work package or work package subdivision. This estimate is the sum of actual costs plus estimates-to-complete. This estimate is also known as anticipated final cost. For completed work the latest revised estimate equals the Actual Cost ⑭.

⑰ PROJECTED (OVERRUN) UNDERRUN (Totals at Completion): The Planned Cost ⑮ minus the Latest Revised Estimate ⑯. When planned cost exceeds latest revised estimate, a projected underrun condition exists. When latest revised estimate exceeds planned cost, a projected overrun condition exists. The projected (overrun) underrun is also expressed as a percentage of the planned cost immediately above the dollar amount on total lines. Parentheses are used as a notational device to indicate overruns.

⑱ MOST CRITICAL SLACK (WEEKS): The worst (least algebraic) slack with respect to designated program or project end points, in weeks, for any of the activities within the work package ⑥. Slack pertains only to the work package (charge number) itself, not to the further cost element breakouts shown in this report. If the work package has been completed, this column is blank.

⑲ SCHEDULED OR ACTUAL (A) COMPLETION DATE: The calendar date on which all the work contained in the work package is scheduled for completion or was actually completed. The scheduled completion

date (T_S) is established by management as an internal control on the completion of the work. If no scheduled completion date has been established for the work package, the column is blank. The actual completion date (T_A) is the date on which all work in the work package has been completed. When the date in this column is an actual completion date, an "A" is printed in front of the date. Completion date pertains only to the work package (charge number) itself, not to the further cost element breakouts shown in this report.

PERT COST

FINANCIAL PLAN AND STATUS REPORT

The Financial Plan and Status Report provides data for a monthly comparison (at any given level) of actual costs and/or latest revised estimates against planned costs, and thus serves as a tool for monitoring the financial plans.

Historical (prior month) cumulative costs are shown for each charge number. Both incremental and cumulative costs by charge number are shown for each future month within the time period identified in the Report Dates block ⑤.

The report is prepared for higher levels of management by printing only totals for each month. (Figure 10)

The Cost of Work Report (Display) may be prepared from data available in the Financial Plan and Status Report.

PERT COST
FINANCIAL PLAN AND STATUS REPORT

| | | | |
|---------------------|-----------------|--------------|--------------|
| ① | REPORTING ORGN. | CONTRACT NO. | REPORT DATES |
| ⑦ | ③ | ④ | ⑤ |
| LEVEL/SUMMARY ITEM: | | | |

| MONTH ⑥ | CHARGE NUMBER ⑦ | INCREMENTAL COST \$(000) | | | CUMULATIVE COST \$(000) | | | REMARKS ⑬ | |
|------------|----------------------|--------------------------|--------------|---|-------------------------|--------------|---|--------------|--|
| | | ACTUAL ⑧ | PLANNED ⑨ | LATEST REVISED ESTIMATE (OVER) UNDER PLAN ⑩ | ACTUAL ⑫ | PLANNED ⑬ | LATEST REVISED ESTIMATE (OVER) UNDER PLAN ⑭ | | |
| 12 | 18 | 7 | 7 | 9 | 7 | 7 | 7 | 9 | |
| XXXXXXXXXX | XXXXXXXXXXXXXXXXXXXX | xxx,xxx | xxx,xxx | (xxx,xxx) | xxx,xxx | xxx,xxx | xxx,xxx | (xxx,xxx) | |
| | | | | DATA 90 SPACES 29 | | | | | |
| | | | | NUMBER OF DIGITS | | | | | |
| | | | | 7 | | | | | |
| | | | | 9 | | | | | |

Figure 8
-25-

PERT COST
FINANCIAL PLAN AND STATUS REPORT
BY MONTH, CHARGE NUMBER

| | | | |
|---|--|---|---------------------------------------|
| ABC - MISSILE AND GHE LEVEL/SUMMARY ITEM: 47EIRST STAGE, BALLISTIC SHELL 22300 | REPORTING ORGN, CONTRACT NO. XYZ - A&S DIVN 33(600)28369A | TERM (SPAN): TOTAL PROGRAM CUT OFF DATE: 30MARG3 | REPORT DATES RELEASE DATE: 10APRG3 |
|---|--|---|---------------------------------------|

| MONTH | CHARGE NUMBER | INCREMENTAL COST \$(000) | | CUMULATIVE COST \$(000) | | REMARKS |
|--------------|---------------|--------------------------|---------|-------------------------|---------|---|
| | | ACTUAL | PLANNED | ACTUAL | PLANNED | |
| PRIOR | 32163 | | | 24 | 24 | <i>Values that reported to date</i> |
| | 32164 | | | 92 | 92 | |
| | 52072 | | | 12 | 12 | |
| | 52073 | | | 2 | 2 | |
| | 78339 | | | | | |
| | TOTAL | | | 6,150 | 6,200 | |
| MAR63 | 32163 | 1 | 1 | 25 | 25 | <i>(Per) Under-estimate for cost performance to date \$ 300,000</i> |
| | 32164 | 20 | 19 | 112 | 112 | |
| | 52072 | 3 | 2 | 15 | 15 | |
| | 78339 | 2 | 2 | 2 | 2 | |
| | TOTAL | 250 | 300 | 6,400 | 6,500 | |
| APR63 | 32163 | | | 50 | 50 | |
| | 32164 | | | 26 | 26 | |
| | TOTAL | | | 6,400 | 6,400 | |
| TOTAL PERIOD | TOTAL | 98 | 140 | 6,598 | 6,540 | 58 |
| | | | | 6,400 | 9,200 | (500) |

Figure 9
-26-

PERT COST
FINANCIAL PLAN AND STATUS REPORT
BY MONTH

| | | | |
|--|-----------------------------------|-------------------------------|--|
| ABC - MISSILE AND GHE LEVEL/SUMMARY ITEM: 4/FIRST STAGE BALLISTIC SHELL 22320 | REPORTING ORGN. XYZ - A&S DIVN | CONTRACT NO. 33(600)28369A | REPORT DATES TERM (SPAN): TOTAL PROGRAM CUT OFF DATE: 30MAR63 RELEASE DATE: 10APR63 |
|--|-----------------------------------|-------------------------------|--|

| MONTH | INCREMENTAL COST \$(000) | | | CUMULATIVE COST \$(000) | | | REMARKS |
|--------------|--------------------------|---------|-------------------------|-------------------------|---------|-------------------------|---|
| | ACTUAL | PLANNED | (OVER) UNDER PLAN | ACTUAL | PLANNED | (OVER) UNDER PLAN | |
| PRIOR | | | | 6,150 | 6,200 | 50 | Value of work performed to date: Lump sum cur off \$ 6,700,000 Last 1st Month \$ 275,000 (Over) by program for date performed to date \$ 400,000 |
| MAR63 | 250 | 300 | 50 | 6,400 | 6,500 | 100 | |
| APR63 | | 98 | (42) | 448 | 378 | 70 | |
| TOTAL PERIOD | | | | 6,400 | 9,200 | (500) | |

Figure 10
-27-

DEFINITIONS
PERT COST
FINANCIAL PLAN AND STATUS REPORT

① The designation of the total (or a part of the total) system program or project that is identified with the reporting organization. For example, if reporting organization XYZ has the Missile and GHE part of weapon system ABC, the program or project definition would read:

ABC - Missile and GHE

② LEVEL/SUMMARY ITEM: The level number, noun description, and summary number of the summary item for which the report is being prepared.

③ REPORTING ORGANIZATION: The name or identification of the organization responsible for the work identified in the Contract Number ④ and Program/Project ① blocks.

④ CONTRACT NUMBER: The numeric designation of the contract(s) or agreement(s) included in each report (e.g., 33(600)28369A). When a report is prepared for a large program or project, several contracts may be included. Therefore, each contract number (or its representative code) would be indicated in this space. It may be noted that by sorting on contract number, a report can be prepared for each individual contract.

⑤ REPORT DATES:

TERM (SPAN): The beginning and ending date for the total increment being covered in the report. For example:

1 Jan 62 to 31 Dec 62
Total Program (Project)
Contract

CUT OFF DATE: The accounting cut off date for the period of actual costs being reported.

RELEASE DATE: The date that the report is to be released to management. In the event of subsequent

rerun and redistribution of reports, it is permissible to suffix the report release date with a revision number.

- ⑥ MONTH: The accounting time period for which (or through which) estimates and actuals are shown.
- ⑦ CHARGE NUMBER: The contractor or government organization charge number (shop order number, work order number) used to identify the work package for purposes of estimating and accumulating costs.
- ⑧ ACTUAL (Incremental Cost): The actual expenditures incurred plus any prespecified types of unliquidated commitments (unliquidated obligations or accrued liabilities) charged or assigned during the indicated Month ⑥. This value is shown for individual Charge Numbers ⑦ when they are included in the report. This column is used only for the month preceding "cut off date."
- ⑨ PLANNED (Incremental Cost): The approved planned cost for the indicated time period ⑥. This value is shown for individual Charge Numbers ⑦ when they are included in the report. No information appears in this column for prior months.
- ⑩ LATEST REVISED ESTIMATE (Incremental Cost): The latest estimate of cost for the indicated time period ⑥. This value is shown for individual Charge Numbers ⑦ when they are included in the report.
- ⑪ (OVER) UNDER PLAN (Incremental Cost): The Planned Cost ⑨ minus the Latest Revised Estimate ⑩. When planned cost exceeds latest revised estimate, a projected underplan condition exists. When latest revised estimate exceeds planned cost, a projected overplan condition exists. Parentheses are used as a notational device to indicate an overplan condition. No information appears in this column for prior months.
- ⑫ ACTUAL (Cumulative Cost): The actual expenditures incurred plus any prespecified types of unliquidated commitments (unliquidated obligations or accrued liabilities) charged or assigned during the period from the beginning of the program or project to the end of the indicated Month ⑥. This value is shown for individual Charge Numbers ⑦ when they are included in the report.
- ⑬ PLANNED (Cumulative Cost): The approved planned cost during the period from the beginning of the program or project to the end

of the indicated Month (6). This value is shown for individual Charge Numbers (7) when they are included in the report.

(14) LATEST REVISED ESTIMATE (Cumulative Cost): The latest estimate of cost during the period from the beginning of a program or project to the end of the indicated Month (6). This value is shown for individual Charge Numbers (7) when they are included in the report. This estimate is the sum of actual costs plus estimates through the end of the indicated month. For the period prior to the cut off date, the latest revised estimate equals the Actual (12).

(15) (OVER) UNDER PLAN (Cumulative Cost): The Planned Cost (13) minus the Latest Revised Estimate (14). When planned cost exceeds latest revised estimate, a projected underplan condition exists. When latest revised estimate exceeds planned cost, a projected overplan condition exists. Parentheses are used as a notational device to indicate overplans.

(16) REMARKS: This column contains the remaining data needed to make the Financial Plan and Status Report the sole source of information for plotting the Cost of Work Display. This data, (which may be transferred from the Program/Project Status Report), is:

Value of Work Performed to Date

- 1) Cumulative-(from column (13) Program/Project Status Report)
- 2) Latest Month-(from column (13) Program/Project Status Report this month minus column (13) Program/Project Status Report last month)

(Over) Underrun to Date (from column (15) of the Program/Project Status Report).

PERT COST

MANPOWER LOADING REPORT AND DISPLAY

The Manpower Loading Report and the Manpower Loading Display are intended for use by contractors to report manpower loading for various levels of summary within the program. The Manpower Loading Report lists actual, planned, and latest estimated monthly manhours for the desired level of summary by the type of manpower.

The Manpower Loading Display is a graphical presentation of the data contained in the Manpower Loading Report and is manually prepared.

The "type of manpower" is one of (or a combination of) the contractor's resource codes. These codes often identify types of materials, services, and facilities for which cost estimates have been made in hours, but which may not be significant in an analysis of manpower application. Therefore, the Manpower Loading Report is frequently prepared only for certain specified resource codes (skill categories).

The report is prepared for higher levels of management by printing only totals for each month (Figure 13). When the Government requires reporting in categories other than those identified by contractors' resource codes, the report is prepared by grouping resource codes within the specified categories by use of a translation table.

The sequence of sort and the categories included in the report are indicated in the report title. In addition to the examples shown, the report may be prepared by Performing Organization (8), Month (6), and Resource Code (7), to show organizational loading.

PERT COST
MANPOWER LOADING REPORT

| | | | | |
|-----------------------|--|-----------------|--------------|--|
| ① | | REPORTING ORGN. | CONTRACT NO. | REPORT DATES |
| LEVEL/SUMMARY ITEM: ② | | ③ | ④ | TERM (SPAN): CUT OFF DATE: RELEASE DATE: ⑤ |

| MONTH | IDENTIFICATION | | | MANHOURS | | | TIME MOST CRIT SLACK (WKS) |
|--------------|------------------|-----------|----------------------|--------------|--------------|-------------------------|----------------------------|
| | RES (SKILL) CODE | PERF ORGN | CHARGE NUMBER | ACTUAL | PLANNED | LATEST REVISED ESTIMATE | |
| ⑥ | ⑦ | ⑧ | ⑨ | ⑩ | ⑪ | ⑫ | ⑬ |
| 12 | 6 | 6 | 18 | 10 | 10 | 10 | 12 |
| XXXXXXXXXXXX | XXXXXX | XXXXXX | XXXXXXXXXXXXXXXXXXXX | XXXXXXXXXXXX | XXXXXXXXXXXX | XXXXXXXXXXXX | XXXXXXXXXXXX |
| | | | NUMBER OF DIGITS | | | | |
| | | | DATA SPACES | 89 | | | |
| | | | | 119 | | | |
| | | | | | | | 5 |
| | | | | | | | ⑭ |

Figure 11
-32-

PERT COST
MANPOWER LOADING REPORT
BY RESOURCE, MONTH, PERF ORGN, CHARGE NO.

| | | | |
|--|-----------------------------------|-------------------------------|--|
| ABC - MISSILE AND GHE LEVEL/SUMMARY ITEM: 3/BALLISTIC SHELL 22300 | REPORTING ORGN. X7Z - A&S DIVN | CONTRACT NO. 33(600)28369A | REPORT DATES TERM (SPAN): TOTAL PROGRAM CUT OFF DATE: 30MAR63 RELEASE DATE: 10APR63 |
|--|-----------------------------------|-------------------------------|--|

| MONTH | IDENTIFICATION | | | MANHOURS | | | TIME MOST CRIT SLACK (WKS) | |
|-------|------------------------|--------------|------------------|------------|------------|-------------------------------|--|-------------------------|
| | RES (SKILL CODE) | PERF ORGN | CHARGE NUMBER | ACTUAL | PLANNED | LATEST REVISED ESTIMATE | | (OVER) UNDER PLAN |
| PRIOR | E1 | 2217 | 32163 | 800 | 2,100 | 800 | 1,300 | 0.0 |
| | | | 32164 | 13,000 | 14,000 | 13,000 | 1,000 | 2.1 |
| | | | 32166 | 2,200 | 2,200 | 2,200 | 0 | 16.2 |
| | | | 32163 32166 | 400 600 | 400 600 | 400 600 | 0 | 0.0 16.2 |
| TOTAL | | 2217 | 175,000 | 179,000 | 175,000 | 4,000 | 0.0 | |
| MAR63 | | 2217 | 32163 | 400 | 400 | 400 | 0 | 0.0 |
| | | | 32164 | 3,900 | 4,100 | 3,900 | 200 | 2.1 |
| TOTAL | | 2217 | 95,000 | 97,000 | 95,000 | 2,000 | 0.0 | |
| APR63 | | 2217 | 32163 | 400 | 400 | 400 | 0 | 0.0 |
| | | | 32164 | 4,500 | 4,500 | 4,500 | 0 | 2.1 |
| TOTAL | | 2217 | 270,000 | 86,000 | 98,000 | (12,000) | | |
| TOTAL | | | 850,000 | 856,000 | (6,000) | | | |

Figure 12
-33-

PERT COST
MANPOWER LOADING REPORT
BY RESOURCE, MONTH

| | | | |
|---|-----------------|---------------|----------------------------|
| ABC - MISSILE AND GHE | REPORTING ORGN. | CONTRACT NO. | REPORT DATES |
| LEVEL/SUMMARY ITEM: 37BALLISTIC SHELL 22300 | XYZ - A&S DIVN | 33(600)28369A | TERM (SPAN): TOTAL PROGRAM |
| | | | CUT OFF DATE: 30MAR63 |
| | | | RELEASE DATE: 10APR63 |

| IDENTIFICATION | | | | MANHOURS | | | TIME | |
|----------------|------------------|-----------|---------------|----------|---------|-------------------------|-------------------|-----------------------|
| MONTH | RES (SKILL) CODE | PERF ORGN | CHARGE NUMBER | ACTUAL | PLANNED | LATEST REVISED ESTIMATE | (OVER) UNDER PLAN | MOST CRIT SLACK (WKS) |
| PRIOR | EI | | | 175,000 | 179,000 | 175,000 | 4,000 | |
| MAR63 | | | | 95,000 | 97,000 | 95,000 | 2,000 | |
| APR63 | | | | | 86,000 | 98,000 | (12,000) | |
| TOTAL | | | | 270,000 | 850,000 | 856,000 | (6,000) | |

Figure 13
-34-

PERT COST
MANPOWER LOADING DISPLAY

| | | | |
|---------------------------------------|-----------------|---------------|----------------------------|
| 1 | REPORTING ORGN. | CONTRACT NO. | REPORT DATES |
| ABC - MISSILE AND GHE | XYZ | 33(600)28369A | TERM (SPAN): TOTAL PROGRAM |
| LEVEL/SUMMARY ITEM: 3/BALLISTIC SHELL | 22300 | | CUT OFF DATE: 30MAR63 |
| RESOURCE (SKILL) CODE: E1 | | | RELEASE DATE: 10APR63 |
| | 3 | 4 | 5 |
| | 7 | | |

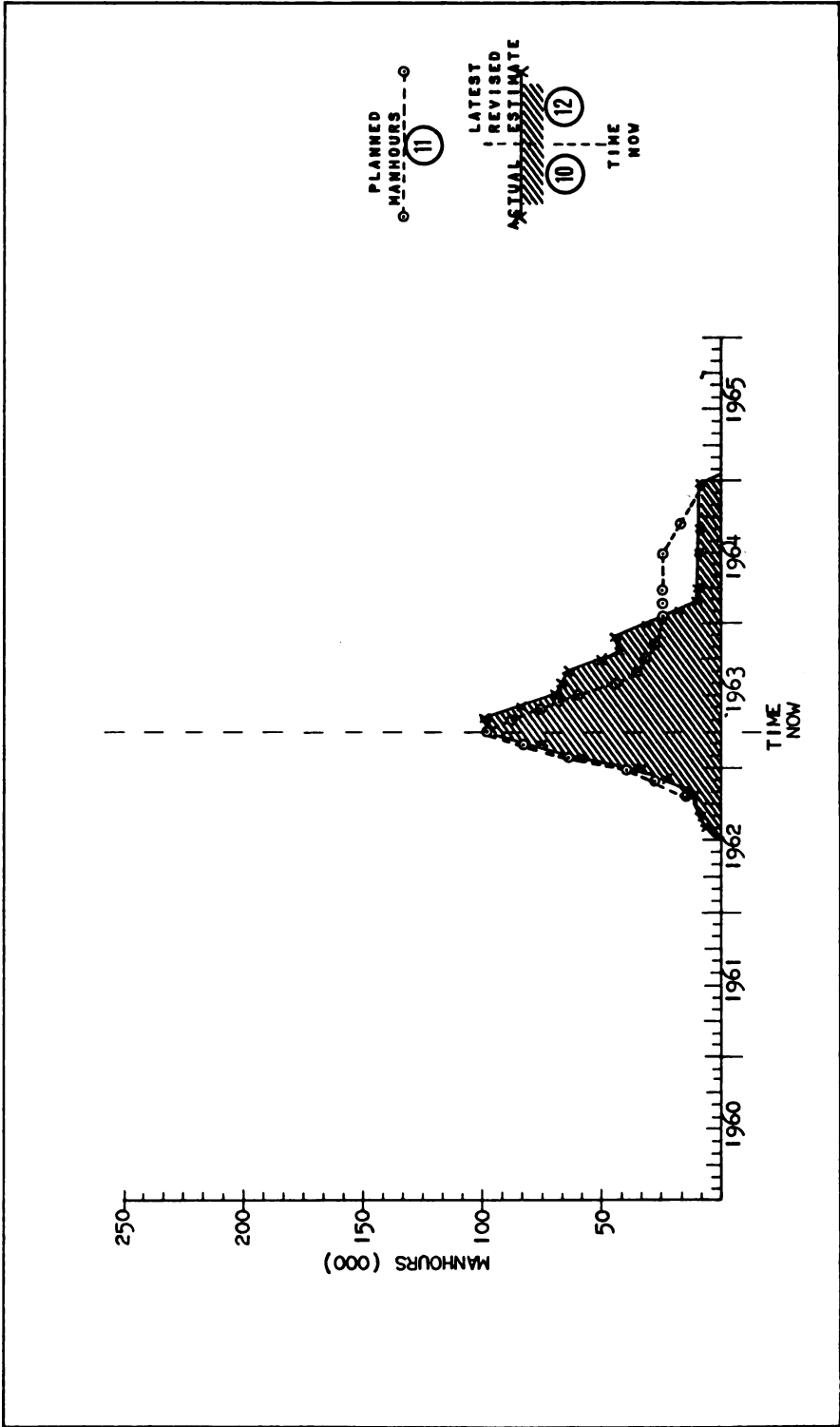


Figure 14
-35-

DEFINITIONS
PERT COST
MANPOWER LOADING REPORT AND DISPLAY

① The designation of the total (or a part of the total) system program or project that is identified with the reporting organization. For example, if reporting organization XYZ has the Missile and GHE part of weapon system ABC, the program or project definition would read:

ABC - Missile and GHE

② LEVEL/SUMMARY ITEM: The level number, noun description, and summary number of the summary item for which the report is being prepared.

③ REPORTING ORGANIZATION: The name or identification of the organization responsible for the work identified in the Contract Number ④ and Program/Project ① blocks.

④ CONTRACT NUMBER: The numeric designation of the contract(s) or agreement(s) included in each report (e.g., 33(600)28369A). When a report is prepared for a large program or project, several contracts may be included. Therefore, each contract number (or its representative code) would be indicated in this space. It may be noted that by sorting on contract number, a report can be prepared for each individual contract.

⑤ REPORT DATES:

TERM (SPAN): The beginning and ending date for the total increment being covered in the report. For example:

1 Jan 62 to 31 Dec 62
Total Program (Project)
Contract

CUT OFF DATE: The accounting cut off date for the period of actual costs being reported.

RELEASE DATE: The date that the report is to be released to management. In the event of subsequent

rerun and redistribution of reports, it is permissible to suffix the report release date with a revision number.

- ⑥-⑨ The sorting sequence for these identification columns is indicated in the report title. Information will appear in only those columns listed in the title.
- ⑥ MONTH: The accounting time period for which estimates and actuals are shown.
- ⑦ RESOURCE (SKILL) CODE: The contractor or government organization code for a particular manpower skill.
- ⑧ PERFORMING ORGANIZATION: The contractor or government organization which will perform work on the work package.
- ⑨ CHARGE NUMBER: The contractor or government organization charge number (shop order number, work order number) used to identify the work package for purposes of estimating and accumulating costs.
- ⑩ ACTUAL (Manhours): The actual manhour expenditures incurred or assigned to a work package or work package subdivision. This information may appear only as a total figure when charge numbers are not shown in the report.
- ⑪ PLANNED (Manhours): The manhours planned for a work package or work package subdivision during the indicated month. This information may appear only as a total figure when charge numbers are not shown in the report.
- ⑫ LATEST REVISED ESTIMATE (Manhours): The latest estimate of manhours for a work package or work package subdivision during the indicated month. This information may appear only as a total figure when charge numbers are not shown in the report.
- ⑬ (OVER) UNDERPLAN (Manhours): The Planned Manhours ⑪ minus the Latest Revised Estimate ⑫. When planned manhours exceed latest revised estimate, a projected underplan condition exists. When latest revised estimate exceeds planned manhours, a projected overplan condition exists. Parentheses are used as a notational device to indicate an overplan condition.
- ⑭ MOST CRITICAL SLACK (WEEKS): The worst (least algebraic) slack with respect to designated program or project end points, in weeks,

for any of the activities within the work package ⑨. Slack pertains only to the work package or charge number itself, not to the further cost element breakouts shown in this report. If the work package has been completed or if the charge number is not shown, this column is blank.

PERT COST

COST OF WORK REPORT

The Cost of Work Report is a graphical equivalent of the Financial Plan and Status Report with the additional feature of showing the distribution of actual costs and the value for work performed to "time now."

The Cost of Work Report is manually prepared each month from data contained in the Financial Plan and Status Report. The Cost of Work Report provides a comparison of:

- . projected cost vs. planned cost at completion;
- . value for work performed vs. actual cost to date;
- . planned rate of expenditure vs. actual rate of expenditure to date;
- . planned rate of expenditure vs. latest estimated rate of expenditure to completion.

PERT COST

COST OF WORK REPORT

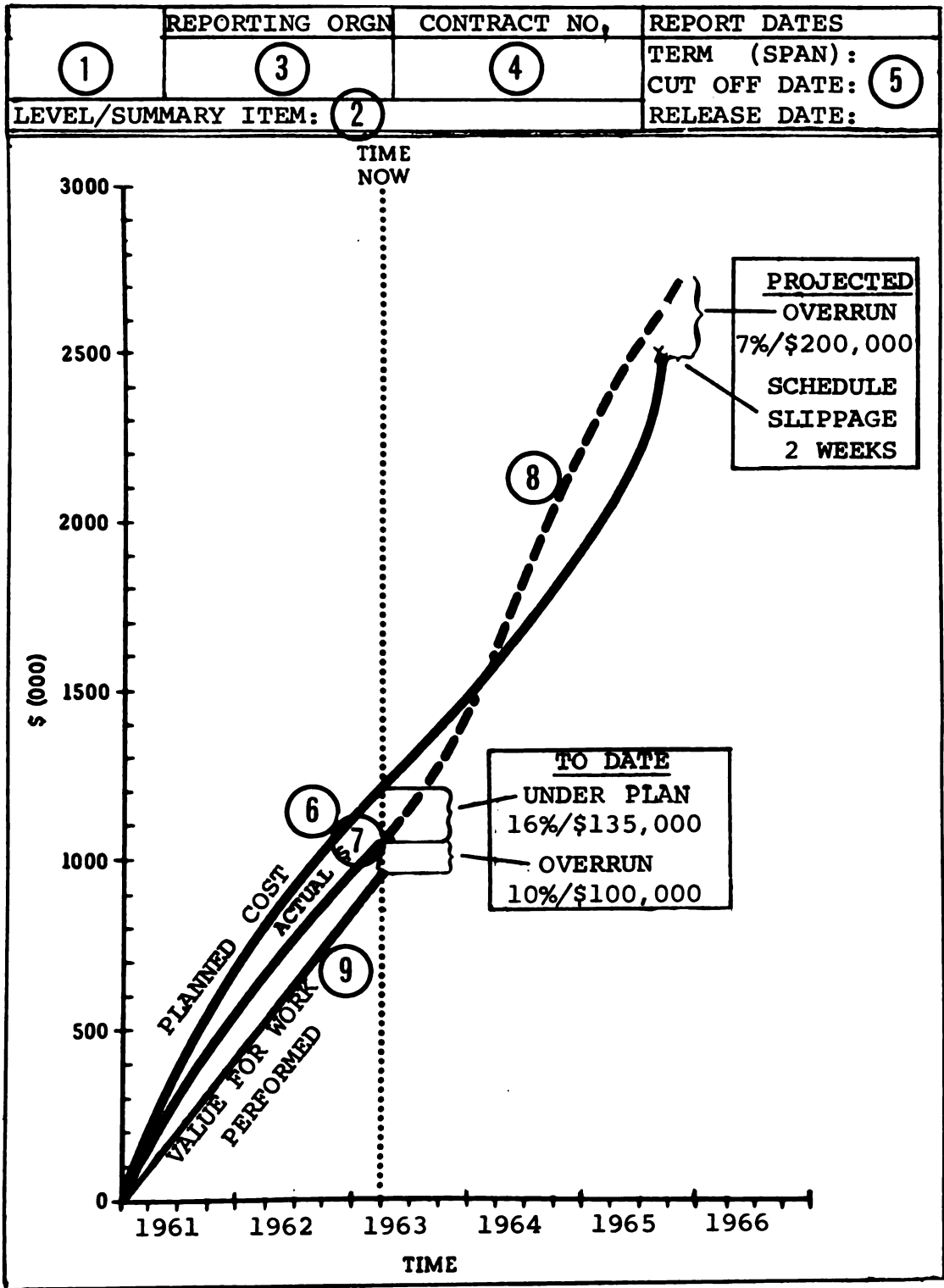


Figure 15

DEFINITIONS
PERT COST
COST OF WORK REPORT

① The designation of the total (or a part of the total) system program or project that is identified with the reporting organization. For example, if reporting organization XYZ has the Missile and GHE part of weapon system ABC, the program or project definition would read:

ABC - Missile and GHE

② LEVEL/SUMMARY ITEM: The level number, noun description, and summary number of the summary item for which the report is being prepared.

③ REPORTING ORGANIZATION: The name or identification of the organization responsible for the work identified in the Contract Number ④ and Program/Project ① blocks.

④ CONTRACT NUMBER: The numeric designation of the contract(s) or agreement(s) included in each report (e.g., 33(600)28369A). When a report is prepared for a large program or project, several contracts may be included. Therefore, each contract number (or its representative code) would be indicated in this space. It may be noted that by sorting on contract number, a report can be prepared for each individual contract.

⑤ REPORT DATES:

TERM (SPAN): The beginning and ending date for the total increment being covered in the report. For example:

1 Jan 62 to 31 Dec 62
Total Program (Project)
Contract

CUT OFF DATE: The accounting cut off date for the period of actual costs being reported.

RELEASE DATE: The date that the report is to be released to management. In the event of subsequent

rerun and redistribution of reports, it is permissible to suffix the report release date with a revision number.

- ⑥ PLANNED COST: The planned cost for the Summary Item ② plotted cumulatively by month. Values are plotted each month from the Financial Plan and Status Report, column ⑬
- ⑦ ACTUAL COST: The actual cost for the Summary Item ② plotted cumulatively by month. This line is developed by plotting, each month, the new cumulative actual cost from the Financial Plan and Status Report, column ⑫
- ⑧ LATEST REVISED ESTIMATE: The latest estimate of cost for the Summary Item ② plotted cumulatively by month from "time now" to program or project completion. This value is available from the Financial Plan and Status Report, column ⑭
- ⑨ VALUE FOR WORK PERFORMED TO DATE: The planned cost for work completed within the Summary Item ② plotted cumulatively by month. This line is developed by plotting, each month, the new value of work performed to date from the Financial Plan and Status Report Remarks ⑯ (or from the Program/Project Status Report ⑬)

PERT COST

COST OUTLOOK REPORT

The Cost Outlook Report shows (for any given level and summary item) the projected cost status at work completion. It also shows what the projected cost was at every cycle previous to the current one, thus providing for the recognition of trends.

Each month, new projections which provide new entries for the Cost Outlook Report are obtained from the Management Summary Report. The Cost Outlook Report is manually prepared by periodically plotting the projections obtained. These projections may be plotted by month for two years, after which the report is redrawn to show previous projections condensed by year.

Limit lines, established by the manager for each program or project, identify the values of (over) underrun which require a narrative analysis to be included in the Problem Analysis Report.

PERT COST
COST OUTLOOK REPORT

| | | | |
|-----------------------|--------------------|-----------------|--|
| LEVEL/SUMMARY ITEM: ① | REPORTING ORGN.: ③ | CONTRACT NO.: ④ | REPORT DATES: |
| ② | | | TERM (SPAN): CUT OFF DATE: ⑤ RELEASE DATE: |

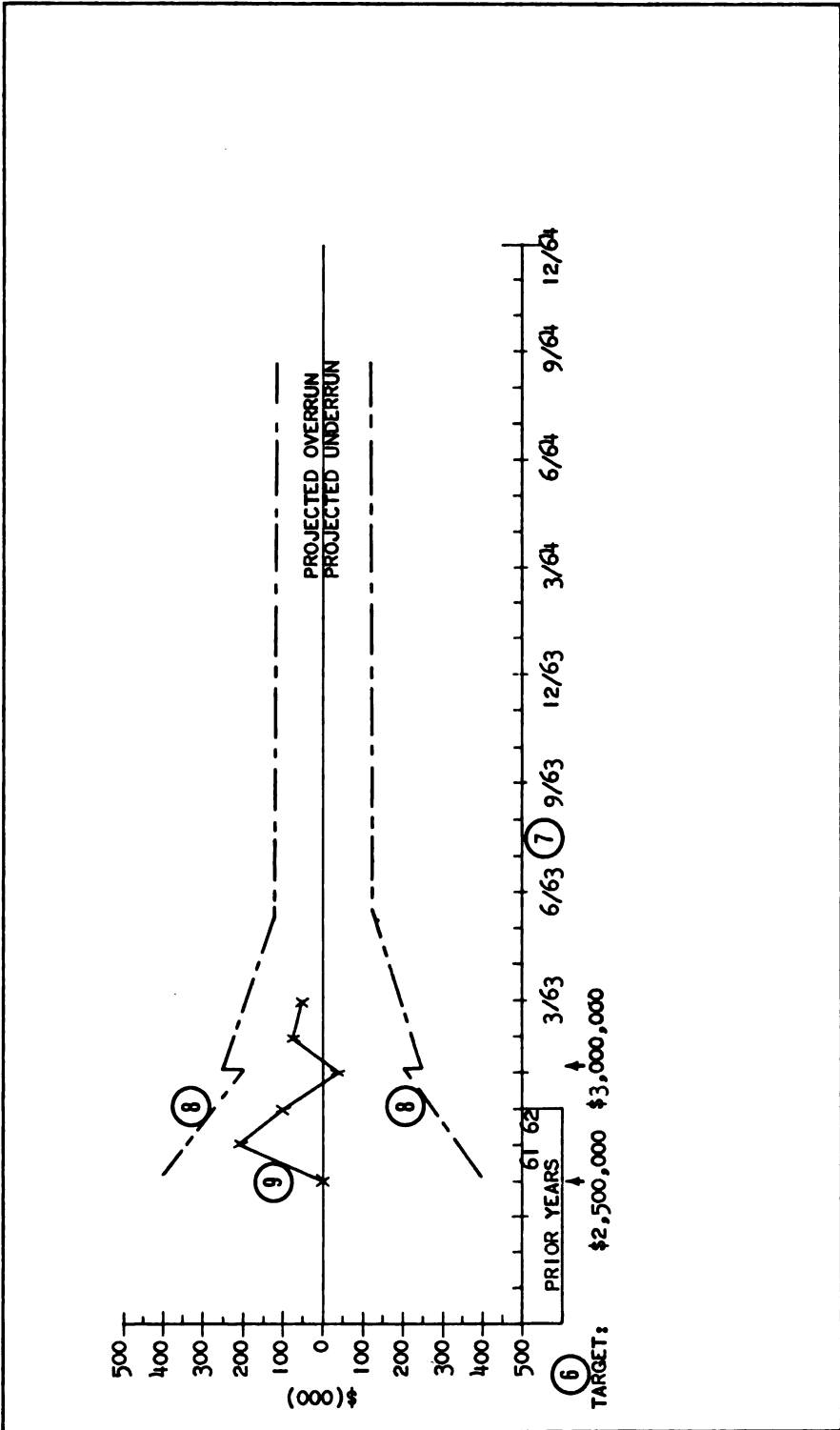


Figure 16
-44-

DEFINITIONS
PERT COST
COST OUTLOOK REPORT

① The designation of the total (or a part of the total) system program or project that is identified with the reporting organization. For example, if reporting organization XYZ has the Missile and GHE part of weapon system ABC, the program or project definition would read:

ABC - Missile and GHE

② LEVEL/SUMMARY ITEM: The level number, noun description, and summary number of the summary item for which the report is being prepared.

③ REPORTING ORGANIZATION: The name or identification of the organization responsible for the work identified in the Contract Number ④ and Program/Project ① blocks.

④ CONTRACT NUMBER: The numeric designation of the contract(s) or agreement(s) included in each report (e.g., 33(600)28369A). When a report is prepared for a large program or project, several contracts may be included. Therefore, each contract number (or its representative code) would be indicated in this space. It may be noted that by sorting on contract number, a report can be prepared for each individual contract.

⑤ REPORT DATES:

TERM (SPAN): The beginning and ending date for the total increment being covered in the report. For example:

1 Jan 62 to 31 Dec 62
Total Program (Project)
Contract

CUT OFF DATE: The accounting cut off date for the period of actual costs being reported.

RELEASE DATE: The date that the report is to be released to management. In the event of subsequent

rerun and redistribution of reports, it is permissible to suffix the report release date with a revision number.

⑥ TARGET: The planned cost for the Summary Item ② identified in the title block. An arrow indicates on the Calendar ⑦ the date when the target value was established.

⑦ CALENDAR: The calendar shows two years of projected values by month and six years of condensed historical information. Managers may elect to use other time scales.

⑧ LIMIT LINES: Limit lines, established for each program or project, identify the values of (overrun) underrun which require that a narrative analysis be included in the Problem Analysis Report.

⑨ PROJECTED (OVERRUN) UNDERRUN: This value, from the Management Summary Report Projected (Overrun) Underrun ⑫, is plotted each month.

PERT COST

SCHEDULE OUTLOOK REPORT

The Schedule Outlook Report shows (for any given level and summary item) the projected schedule status at work completion. It also shows what the projected schedule status was at every cycle previous to the current one, thus providing for the recognition of trends.

Each month, new projections are obtained from the Management Summary Report which provide new entries for the Schedule Outlook Report. This report is manually prepared by periodically plotting the projections obtained. These projections may be plotted by month for two years, after which the Schedule Outlook Report is redrawn to show previous projections condensed by year.

Limit lines, established by the manager for each program or project, identify the values of schedule status which require a narrative analysis to be included in the Problem Analysis Report.

PERT COST
SCHEDULE OUTLOOK REPORT

| | | | | |
|---------------------|--|-----------------|--------------|--|
| ① | | REPORTING ORGN. | CONTRACT NO. | REPORT DATES |
| LEVEL/SUMMARY ITEM: | | ③ | ④ | TERM (SPAN): CUT OFF DATE: RELEASE DATE: ⑤ |
| ② | | | | |

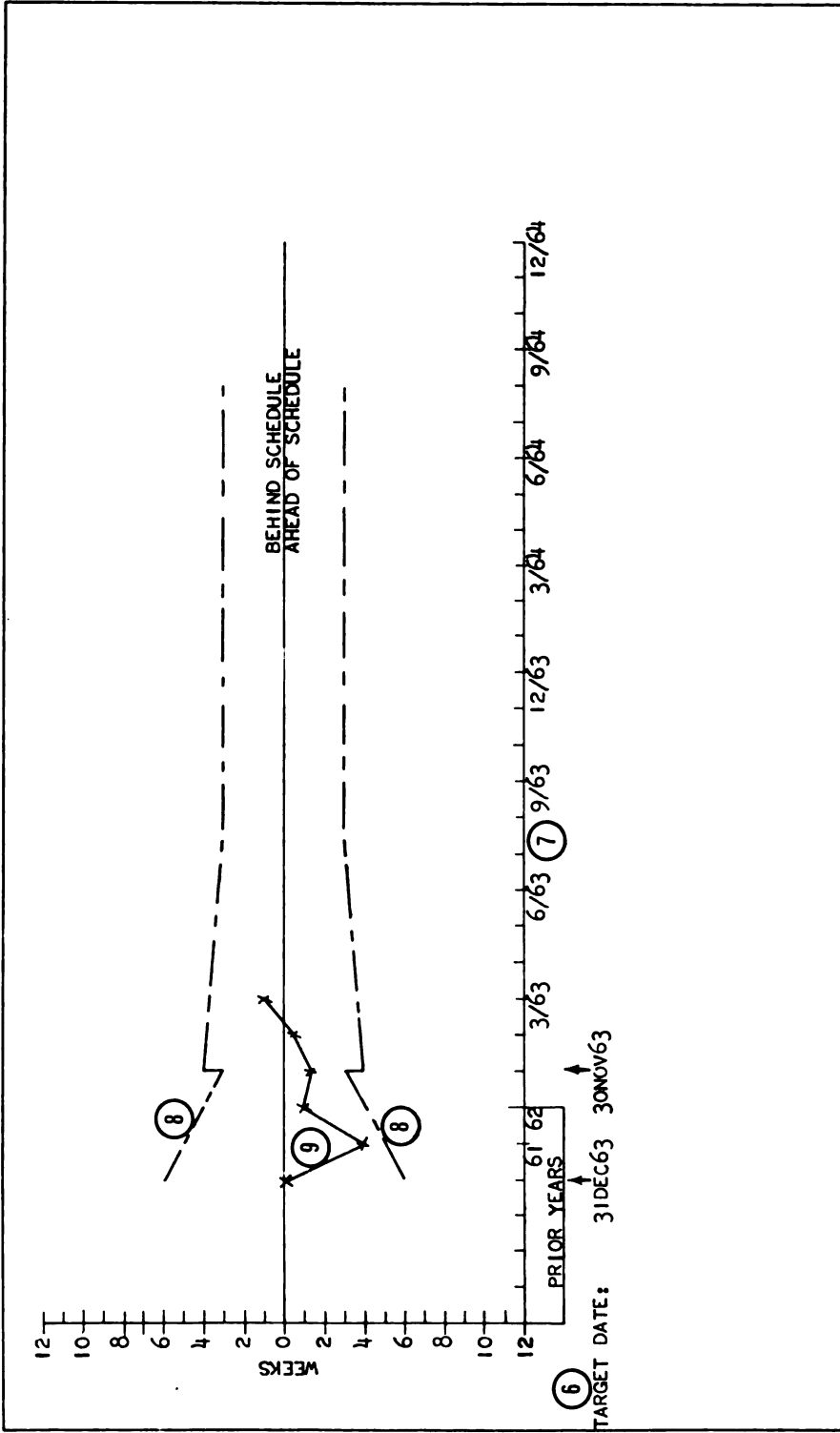


Figure 17
-48-

DEFINITIONS
PERT COST
SCHEDULE OUTLOOK REPORT

① The designation of the total (or a part of the total) system program or project that is identified with the reporting organization. For example, if reporting organization XYZ has the Missile and GHE part of weapon system ABC, the program or project definition would read:

ABC - Missile and GHE

② LEVEL/SUMMARY ITEM: The level number, noun description, and summary number of the summary item for which the report is being prepared.

③ REPORTING ORGANIZATION: The name or identification of the organization responsible for the work identified in the Contract Number ④ and Program/Project ① blocks.

④ CONTRACT NUMBER: The numeric designation of the contract(s) or agreement(s) included in each report (e.g., 33(600)28369A). When a report is prepared for a large program or project, several contracts may be included. Therefore, each contract number (or its representative code) would be indicated in this space. It may be noted that by sorting on contract number, a report can be prepared for each individual contract.

⑤ REPORT DATES:

TERM (SPAN): The beginning and ending date for the total increment being covered in the report. For example:

1 Jan 62 to 31 Dec 62
Total Program (Project)
Contract

CUT OFF DATE: The accounting cut off date for the period of actual costs being reported.

RELEASE DATE: The date that the report is to be released to management. In the event of subsequent

rerun and redistribution of reports, it is permissible to suffix the report release date with a revision number.

- ⑥ TARGET DATE: The planned scheduled completion date for the Summary Item ② identified in the title block. An arrow indicates on the Calendar ⑦ the date when the target value was established.
- ⑦ CALENDAR: The calendar shows two years of projected values to be plotted by month and six years of condensed historical information. Managers may elect to use other time scales.
- ⑧ LIMIT LINES: Limit lines, established for each program or project, identify the values of schedule slippage which require that a narrative analysis be included in the Problem Analysis Report.
- ⑨ PROJECTED SCHEDULE STATUS: This value, from the Most Critical Slack ⑬ of the Management Summary Report, is plotted each month.

PERT COST

COST CATEGORY STATUS REPORT

The Cost Category Status Report presents a grouping of functional, hardware, or other significant cost elements in specified categories for reporting purposes.

These cost categories are established by relating work packages or elements of cost within work packages to the specified categories. Thus, no distortion of the work breakdown structure is required to segregate this data.

Any cost categories which satisfy this relationship to the work breakdown structure may be established for a program or project, but once established, they must remain as originally defined for the life of the program or project.

The Cost Category Status Report provides for each cost category a manpower and total dollar comparison of:

planned vs. actual expenditure to date;

planned vs. latest revised estimate at completion.

PERT COST
COST CATEGORY STATUS REPORT

| | | | | | | | |
|---|--|-----------------|--|---------------|--|----------------------------|--|
| ABC - MISSILE AND GHE | | REPORTING ORGN. | | CONTRACT NO. | | REPORT DATES | |
| LEVEL/SUMMARY ITEM: 3/BALLISTIC SHELL 22300 | | XYZ - A&S | | 33(600)28369A | | TERM (SPAN): TOTAL PROGRAM | |
| | | | | | | CUT OFF DATE: 30MAR63 | |
| | | | | | | RELEASE DATE: 10APR63 | |

| IDENTIFICATION | MANHOURS | | | | TOTALS AT COMPLETION | | | TOTAL COST \$(000) | | |
|------------------|----------|---------|--------------|---------|----------------------|--------|---------|-------------------------|--------------------------------|-------------------------|
| | TO DATE | | WORK TO DATE | | TOTALS AT COMPLETION | | | TOTALS AT COMPLETION | | |
| | PLANNED | ACTUAL | PLANNED | ACTUAL | PLANNED | ACTUAL | PLANNED | LATEST REVISED ESTIMATE | PROJECTED (OVERRUN) / UNDERRUN | LATEST REVISED ESTIMATE |
| 1010 ENG A&S | 117,000 | 120,000 | 220,000 | 225,000 | 2,500 | 2,700 | 3,500 | 3,900 | (.01) | (400) |
| 1012 DEV D&T | 172,000 | 172,000 | 380,000 | 380,000 | 2,100 | 2,100 | 4,300 | 4,300 | | |
| 2010 EQUIP FA&C | 211,000 | 212,000 | 420,000 | 421,000 | 3,100 | 3,800 | 5,200 | 5,900 | (.01) | (700) |
| 3010 ENG FLD SPT | 63,000 | 61,000 | 170,000 | 169,000 | 980 | 900 | 2,800 | 2,700 | .04 | 100 |
| TOTAL | | | | | 18,620 | 20,500 | 35,200 | 39,650 | (.13) | (4,450) |

Figure 19
-53-

DEFINITIONS
PERT COST
COST CATEGORY STATUS REPORT

① The designation of the total (or a part of the total) system program or project that is identified with the reporting organization. For example, if reporting organization XYZ has the Missile and GHE part of weapon system ABC, the program or project definition would read:

ABC - Missile and GHE

② LEVEL/SUMMARY ITEM: The level number, noun description, and summary number of the summary item for which the report is being prepared.

③ REPORTING ORGANIZATION: The name or identification of the organization responsible for the work identified in the Contract Number ④ and Program/Project ① blocks.

④ CONTRACT NUMBER: The numeric designation of the contract(s) or agreement(s) included in each report (e.g., 33(600)28369A). When a report is prepared for a large program or project, several contracts may be included. Therefore, each contract number (or its representative code) would be indicated in this space. It may be noted that by sorting on contract number, a report can be prepared for each individual contract.

⑤ REPORT DATES:

TERM (SPAN): The beginning and ending date for the total increment being covered in the report. For example:

1 Jan 62 to 31 Dec 62
Total Program (Project)
Contract

CUT OFF DATE: The accounting cut off date for the period of actual costs being reported.

RELEASE DATE: The date that the report is to be released to management. In the event of subsequent

rerun and redistribution of reports, it is permissible to suffix the report release date with a revision number.

- ⑥ COST CATEGORY: The name and/or number of a functional, hardware, or other significant cost category for which costs are to be summarized.
- ⑦ - ⑪ MANHOURS: Information shown in this area of the report may represent services and facilities usage, as well as direct labor. Totals are shown only for each cost category.
- ⑦ PLANNED (To Date): The approved planned manhours assigned to all work packages or work package subdivisions identified with the indicated Cost Category ⑥ from the beginning of the Term ⑤ to the Cut Off Date ⑤.
- ⑧ ACTUAL (To Date): The actual manhour expenditures incurred, charged, or assigned to all work packages or work package subdivisions identified with the indicated Cost Category ⑥.
- ⑨ PLANNED (Totals at Completion): The approved planned manhours assigned to all work packages or work package subdivisions identified with the indicated Cost Category ⑥.
- ⑩ LATEST REVISED ESTIMATE (Totals at Completion): The latest estimate of manhours for all the work packages or work package subdivisions identified with the indicated Cost Category ⑥. This estimate is the sum of actual manhour expenditures plus estimates-to-complete. When all work packages associated with the cost category are completed, Latest Revised Estimate ⑩ equals Actual to Date ⑧.
- ⑪ PROJECTED (OVERRUN) UNDERRUN (Totals at Completion): The Planned Manhours ⑨ minus the Latest Revised Estimate ⑩. When planned manhours exceed latest revised estimate, a projected underrun condition exists. When latest revised estimate exceeds planned manhours, a projected overrun condition exists. The projected (overrun) underrun is also expressed as a percentage of the planned cost immediately above the number of manhours. Parentheses are used as a notational device to indicate overruns.
- ⑫ - ⑯ TOTAL COST \$(000): Cost information in this area of the report represents materials, other direct costs, labor dollar value of manpower (shown in ⑦ - ⑪), and overhead.

⑫ PLANNED (To Date): The approved planned cost assigned to all work packages or work package subdivisions identified with the indicated Cost Category ⑥ from the beginning of the Term ⑤ to the Cut Off Date ⑤

⑬ ACTUAL (To Date): The actual expenditures incurred plus any prespecified types of unliquidated commitments (unliquidated obligations or accrued liabilities) charged or assigned to work packages or work package subdivisions identified with the indicated Cost Category ⑥

⑭ PLANNED (Totals at Completion): The approved planned cost assigned to all work packages or work package subdivisions identified with the indicated Cost Category ⑥

⑮ LATEST REVISED ESTIMATE (Totals at Completion): The latest estimate of cost for all the work packages or work package subdivisions identified with the indicated Cost Category ⑥ This estimate is the sum of actual expenditures plus estimates-to-complete. When all work packages associated with the cost category are completed, Latest Revised Estimate ⑮ equals Actual to Date ⑬

⑯ PROJECTED (OVERRUN) UNDERRUN (Totals at Completion): The Planned Cost ⑭ minus the Latest Revised Estimate ⑮ When planned cost exceeds latest revised estimate, a projected under-run condition exists. When latest revised estimate exceeds planned cost, a projected overrun condition exists. The projected (over-run) underrun is also expressed as a percentage of the planned cost immediately above the dollar amount. Parentheses are used as a notational device to indicate overruns.

PERT

MILESTONE REPORT

The PERT Milestone Reports present schedule information for selected network events which represent major milestones of accomplishment toward completion of the program or project.

The reports are tiered, like the Management Summary Report, for several levels of management. However, the Milestone Report represents key network events that are of major significance in achieving the program or project objectives, whereas the Management Summary Report flags critical areas and work completions.

Together, the Milestone Report and the Management Summary Report provide the most comprehensive status information available in the PERT COST System.

PERT
MILESTONE REPORT

| | | | |
|-----------------------|-----------------|--------------|--|
| ① | REPORTING ORGN. | CONTRACT NO. | REPORT DATES |
| LEVEL/SUMMARY ITEM: ② | ③ | ④ | TERM (SPAN): CUT OFF DATE: RELEASE DATE: ⑤ |

| MILESTONE DESCRIPTION | SLACK | DATE | SCHEDULE | | REMARKS |
|---|-------|--|--------------------------------------|---|---|
| | | | S-SCHED E-EARLIEST L-LATEST | COMPL DATE COMPL DATE COMPL DATE | |
| ⑥ | ⑦ | ⑧ | 1963 P YR J F M A M J J A S O N D | 1964 A-ACTUAL M-EARLIEST AFTER MGMT ACTION | ⑩ |
| I2000685 APPROVE ELEC DSGN SPEC MOD ONE | 2.1 | 05 JUN 63 20 MAY 63 05 JUN 63 | S E L S E L | J F M A M J J A S O N D | ⑪ |
| I2000687 APPROVE ELEC DSGN SPEC MOD TWO | 2.1 | 20 JUN 63 05 JUN 63 20 JUN 63 | S E L | J F M A M J J A S O N D | |
| I2001999 COMPLETE SPECIAL TEST EQUIPMENT | -7.2 | 22 OCT 63 01 SEP 63 22 OCT 63 20 OCT 63 | S E L M | J F M A M J J A S O N D | |
| I2000391 COMPLETE INSTRUMENTATION PROTO PFRT | 0.0 | 22 DEC 63 22 DEC 63 22 DEC 63 | S E L | J F M A M J J A S O N D | ITEM 22322 SCHEDULED COMPLETE 10 Jan 64 |

Figure 20
- 58 -

DEFINITIONS
PERT
MILESTONE REPORT

① The designation of the total (or a part of the total) system program or project that is identified with the reporting organization. For example, if reporting organization XYZ has the Missile and GHE part of weapon system ABC, the program or project definition would read:

ABC - Missile and GHE

The network code number and/or other necessary identification may also appear in this block.

② LEVEL/SUMMARY ITEM: The level number, noun description, and summary number of the summary item for which the report is being prepared.

③ REPORTING ORGANIZATION: The name or identification of the organization responsible for the work identified in the Contract Number ④ and Program/Project ① blocks.

④ CONTRACT NUMBER: The numeric designation of the contract(s) or agreement(s) included in each report (e.g., 33(600)28369A). When a report is prepared for a large program or project, several contracts may be included. Therefore, each contract number (or its representative code) would be indicated in this space. It may be noted that by sorting on contract number, a report can be prepared for each individual contract.

⑤ REPORT DATES:

TERM (SPAN): The beginning and ending date for the total increment being covered in the report. For example:

1 Jan 62 to 31 Dec 62
Total Program (Project)
Contract

CUT OFF DATE: The accounting cut off date for the period of actual costs being reported.

RELEASE DATE: The date that the report is to be released to management. In the event of subsequent rerun and redistribution of reports, it is permissible to suffix the report release date with a revision number.

- ⑥ MILESTONE DESCRIPTION: The network event number and nomenclature which are selected as milestones. Two lines are available for description.
- ⑦ SLACK: The slack, in weeks, associated with the network event (Milestone) ⑥. This is the time difference between the "E" and "L" dates shown in the Schedule ⑨
- ⑧ DATE: The day, month, and year of the "S", "A", "E", "L", or "M" positions shown in the Schedule ⑨
- ⑨ SCHEDULE CALENDAR: A calendar time reference for display of schedule completions. The calendar contains one division for all prior years, two years divided by months, four years by years, and one division for all later years. A "Time Now" line appears between the next future month and the month of the cut off date.
- ⑩ SCHEDULE COMPLETIONS: The scheduled "S", Actual "A", earliest "E", and latest "L" completion dates for the network event (Milestone) in column ⑥ with respect to designated program or project end points. "M" may be entered by an analyst to indicate a revised completion date anticipated as a result of management action.

GLOSSARY OF TERMS

Account Code Structure

The numbering system used to assign summary numbers to elements of the work breakdown structure and charge numbers to individual work packages.

Activity

A work effort of a program which is represented on a network by an arrow. An activity may also simply represent a connection or interdependency between two events in the network. An activity cannot be started until the event preceding it has occurred.

Actual Costs

The actual expenditures incurred plus any prespecified types of unliquidated commitments charged or assigned to a program or project.

Charge Number

A number used for identifying the costs charged to a work package (also known as shop order number or work order number).

Contract Number

The numeric designation, or a representative code, for the contract(s) or agreement(s) included in each report.

Cost Category

The name and/or number of a functional, hardware, or other significant cost category for which costs are to be summarized.

Direct Cost

Costs charged directly to an activity, work package, or summary item in the contract.

Directed Date for an Event (T_D)

Date for a specific accomplishment formally directed by the contracting authority.

Earliest Completion Date (S_E)

The earliest calendar date on which a work effort (activity, work package, or summary item) can be completed. This date is calculated by:

- . summing the scheduled elapsed times (t_s) for activities on the longest path from the beginning of the program or project to the end of the work effort; and
- . then adding this sum to the calendar start date of the program or project.

For distant time effort where scheduled elapsed times (t_s) have not been established, expected elapsed times (t_e) will be used to calculate S_E .

Earliest Expected Date (T_E)

The earliest calendar date on which an event can be expected to occur. The T_E value for a given event is equal to the sum of the expected elapsed times (t_e) for the activities on the longest path from the beginning of the program to the given event. It is frequently transposed to a calendar date.

Elapsed Time

The total time estimated to complete an activity, including time required for the transmittal of information, delays, waiting periods, etc.

Estimate-to-Complete

The estimated manhours, costs, and time required to complete a work package or summary item, (includes applicable overhead except where only direct costs are specified)

Event

A specific, definable accomplishment in a program plan, recognizable at a particular instant in time. Events do not consume time or resources.

Expenditure

Actual disbursement of funds of a contractor for in-plant or subcontract expense pertaining to a contract.

Expected Elapsed Time (t_e)

The elapsed time which an activity is predicted to require. The expected elapsed time is identical to a single time estimate for the work to be accomplished, or is derived from the calculation of a statistically weighted average time estimate, incorporating the optimistic (a), most likely (m), and pessimistic (b) time estimates for the work to be accomplished $\frac{a + 4m + b}{6} = t_e$.

First Event Number

The number of the first event in time (based on S_E) for a work package or summary item. This event number defines the beginning of the work package or summary item in relation to the network.

Item

A summary item on the work breakdown structure.

Last Event Number

The number of the last event in time (based on S_E) for a work package or summary item. This event number defines the end of the work package or summary item in relation to the network.

Latest Allowable Date (T_L)

The latest calendar date on which an event can occur without delaying the completion of the program. The T_L value for a given event is calculated by subtracting the sum of the expected elapsed times (t_e) for the activities on the longest path between the given event and the end event of the program from the latest date allowable for completing the program. T_L for the end event

in a program is equal to the directed date (T_D) of the program. If a directed date is not specified, $T_L = T_E$ for the end event.

Latest Completion Date (S_L)

The latest calendar date on which a work effort (activity, work package, or summary item) can be scheduled for completion without delaying the completion of the program or project. This date is calculated by:

summing the scheduled elapsed times (t_s) for activities on the longest path from the end of the work effort to the end of the program or project; and

then subtracting this sum from the calendar end date of the program or project.

Latest Revised Estimate

The sum of the actual incurred costs plus the latest estimate-to-complete for a work package or summary item as currently reviewed and/or revised (including applicable overhead except where direct costs are specified.)

Level

The number of the tier or level on the work breakdown structure at which a charge or summary number appears.

Manhours

The common unit of direct labor used in PERT COST reports. When specific reports and/or input forms make use of other units such as man-months or manpower, appropriate conversion techniques are used to maintain this data in manhours within the system.

Milestone

Milestones are synonymous with events in a network.

Most Critical Slack (Weeks)

The worst (least algebraic) slack with respect to designated program or project end points, in weeks, for any of the activities within the work package or summary item. This slack is based

on $S_L - S_E$ for each activity. The slack indicated will not necessarily be the difference between the S_L and S_E for the end of a work package or summary item since the worst slack situation may be associated with an activity within the work package or summary item rather than at the end of the work package.

Network

A flow diagram consisting of the activities and events which must be accomplished to reach the program objectives, showing their planned sequences of accomplishment, interdependencies, and interrelationships.

(Over)Under Plan

The planned cost to date minus the latest revised estimate of cost to date. When planned cost exceeds latest revised estimate, a projected underplan condition exists. When latest revised estimate exceeds planned cost, a projected overplan condition exists.

(Overrun) Underrun (Projected)

See Projected (Overrun) Underrun.

(Overrun) Underrun (Work Performed to Date)

The value for the work performed to date minus the actual cost for that same work. Where value exceeds actual cost, an underrun condition exists. When actual cost exceeds value, an overrun condition exists.

Performing Organization

The contractor or government organization which will perform work on a work package.

Planned Cost

The approved planned cost for a work package or summary item. This cost, when totaled with the planned costs for all other work packages, results in the total cost estimate, committed under contract, for the program or project.

Projected (Overrun) Underrun

The planned cost minus the latest revised estimate for a

work package or summary item. When planned cost exceeds latest revised estimate, a projected underrun condition exists. When latest revised estimate exceeds planned cost, a projected overrun condition exists.

Resource Code

The contractor's code for a particular manpower skill or material type.

Responsible Organization

The contractor or government organization responsible for management of a work package.

Scheduled Completion Date (T_S)

A date assigned for completion of an activity or accomplishment of an event for purposes of planning and control within an organization. (Where no specific date is assigned, $S_E = T_S$.)

Scheduled Elapsed Time (t_S)

The period of time assigned for performing an activity from which earliest and latest completion dates are calculated.

Starting Event (Beginning Event)

An event which signifies the beginning of one or more activities on a network.

Summary Item

An item appearing in the work breakdown structure.

Summary Number

A number which identifies an item in the work breakdown structure.

Value (Work Performed to Date)

The planned cost for completed work, including that part of work in process which has been finished. This value is determined by summing the planned cost for each completed work package.

If a work package is in process, the part of its total planned cost which applies to work completed is approximated by applying the ratio of actual cost to latest revised estimate for that work package.

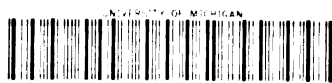
Work Package

The unit of work required to complete a specific job or process, such as a report, a design, a document, a piece of hardware, or a service. The content of a work package may be limited to the work which can be performed by a single operating unit in an organization or may require the contributing services of several operating units. The overall responsibility for the work content of a work package should be assigned to a single organization or responsible individual.

Work Breakdown Structure

A family tree subdivision of a program, beginning with the end objectives and then subdividing these objectives into successively smaller end item subdivisions. The work breakdown structure establishes the framework for:

- . defining the work to be accomplished;
- . constructing a network plan;
- . summarizing the cost and schedule status of a program for progressively higher levels of management.



UNIVERSITY OF MICHIGAN
3 9015 00605 7866

ENGIN. - TRANS. LIBRARY
312 UNDERGRADUATE LIBRARY
764-7494
OVERDUE FINE - 25¢ PER DAY

DATE DUE

~~MAR 15 1984~~
MAY 01 1984

AUG 23 1989

