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COST MEMORANDUM

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HANDBOOK OF ARMY  
COST ANALYSIS TERMS

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FOREWARD

THIS HANDBOOK WAS WRITTEN TO PROVIDE A SIMPLE AND CONVENIENT REFERENCE FOR COST ANALYSIS TERMS AND CONCEPTS. IT DRAWS FROM MANY SOURCES AND, HOPEFULLY, SELECTS THE BEST FROM EACH. THE PRINCIPAL SOURCE DOCUMENTS USED TO DEVELOP THIS PUBLICATION ARE LISTED IN THE BACK OF THE HANDBOOK.

AS AN EVOLVING DISCIPLINE, THE VOCABULARY OF COST ANALYSIS IS NOT ONLY CHANGING, BUT ALSO GROWING. THE SUBJECT MATTER OF COST ANALYSIS HAS INCREASED IN DEPTH AND BREADTH OF COVERAGE IN THE LAST DECADE. FOR EXAMPLE, IT WASN'T UNTIL THE LATE 1970'S THAT LIFE CYCLE COST WAS CODIFIED IN THE DA PAMS. RECENTLY, THAT FRAMEWORK HAS RECEIVED ANOTHER MAJOR REVISION. OVER A PERIOD OF TIME, THIS HANDBOOK WILL GROW AS WELL. IT IS FAR FROM COMPLETE. THIS IS A BEGINNING.



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Administrative routing table with columns for 'To', 'By', and 'Date'. Includes handwritten initials and dates.

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HANDBOOK OF ARMY COST ANALYSIS TERMS

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1. AMC Guidance Package: A package forwarded to the Major Subordinate Commands (MSC's) by HQ AMC, consisting to two items: (1) The OSD inflation indices for budget and cost work and (2) detailed instructions on how to interpret the OSD indices and how they are to be applied to cost and budget documents.

2. AMC Historical Inflation Report: An annual report which summarizes the historical inflation indices used throughout the Army and compares them with other DOD indices and price deflators.

3. Administrative Leadtime: The time interval between initiation of a PWD and letting of a contract. This term will also be applied to the time interval between the initiation of a directive for rebuild and the start of the overhaul or assembly activity.

4. Alternative: One of several different methods of achieving a desired capability.

5. Analogy Method: Method of estimating costs based on similarities between systems. It assumes that due to physical similarities there will be similarities between costs. Provides only a proper order of magnitude estimate (ball park figure).

6. Appropriation: Ordinary current appropriations are budget authorizations granted by Congress, made so these government agencies can make obligations

and disbursements in specified amounts. This definition excludes contract authorizations and authorizations to spend debt receipts.

7. Appropriation Inflation Indices: Inflation indices developed to inflate specific appropriations used by the Department of the Army, such as Operations and Maintenance, Army (OMA), or Other Procurement, Army (OPA).

8. Appropriation Summary: A listing of costs in a cost or budget document by appropriation.

9. Army Cost Analysis Paper (ACAP): A HQDA, Comptroller of the Army, (COA) originated document presenting a comparative analysis between system costs presented in the materiel developer's current Baseline Cost Estimate (BCE) and a corresponding Independent Parametric Cost Estimate (IPCE) developed by COA. It must address varying inflation rates used if the BCE and IPCE use different rates.

10. Army Force Planning Cost Handbook (AFPCH): An Army handbook which provides general costs and other factors used in estimating the acquisition and support costs for weapon systems and other Army materiel. Of primary importance are Operating and Support Cost factors such as military pay and associated benefits.

11. Army Materiel Plan (AMP): A five year materiel plan which begins after the program year and is included in the President's Budget Request.

12. Army Stock Fund (ASF): A rotating fund which provides a pool of small items and other parts used to support Army equipment.

13. Army Systems Acquisition Review Council (ASARC): An Army panel, composed of the Vice Chief of Staff, United States Army (Chairman), Assistant Secretary of the Army (R&D), Assistant Secretary of the Army (I&L), Deputy Under Secretary of the Army (OR), Commanding General, United States Army Materiel Command, Commanding General, United States Army Training and Doctrine Command, Deputy Chief of Staff for Operations and Plans, Deputy Chief of Staff for Operations and Plans, Deputy Chief of Staff for Research, Development and Acquisition. Additional participants as appropriate may be prescribed by the chairman. The Army Systems Acquisition Review Council reviews major Army programs at the key milestones during their development and production.

14. Authorization: An Act of Congress which authorizes federal programs, obligations, or expenditures. The term sometimes refers to basic substantive legislation setting up a program or an agency, and authorizing appropriation to be made for them, but not actually providing authority to spend.

15. Baseline Cost Estimates (BCE): The Baseline Cost Estimate is the first deliberate, detailed, and complete cost estimate made for a new system. This estimate will address acquisition and operating costs and will be the baseline for all subsequent tracking and auditing purposes. A Work Breakdown Structure (WBS) will be established concurrently with the baseline estimate. If one already exists, it will be used. Discrete cost elements, cost parameters, and the recommended "design-to" unit production cost(s) will be included in the Baseline Cost Estimate.

16. Base Year: The first year (year of reference) for an index. The index is 1.0000 in this year and changes each succeeding year.

17. Basis of Issue: Authority which prescribes the number of items issued to an individual, a unit, a military activity, or for a unit piece of equipment. The basis of issue is usually contained in a table of allowances, table of organization and equipment, or other similar authorization.

18. Budget: A financial plan serving as a pattern for and as a control over future operations. It generally consists of an estimate of future expenditures and a systematic plan for the utilization of manpower, materiel, or other resources. The term "budget" in the federal budget context also refers to the summary totals of appropriation, receipts, expenditures (excluding net lending), expenditure account surpluses or deficits, gross and net lending, total expenditures, and total budget surplus or deficit.

19. Budgeting: Budgeting is the process of translating planning and programming decisions into specific projected financial plans, usually for relatively short periods of time. Budgets are short-range segments of adopted action programs which highlight planned accomplishments and estimate the resources to be applied by budget period in order to attain them.

20. Budget Year: The next complete fiscal year for which a budget can be executed. In June 1984, the budget year is Fiscal Year (FY) 1985, Oct 1, 1984 to Sep 30, 1985.

21. Bureau of Economic Analysis (BEA): An organization within the Department of Commerce which has the responsibility for evaluating the condition of the economy, for both the private sector and government. BEA publications include Business Conditions Digest, and Price Changes of Defense Purchases of the United States.

22. Bureau of Labor Statistics (BLS): A bureau within the Department of Labor which specializes in collecting, interpreting, publishing, and distributing wage and price data for the United States. It produces the Consumer Price Index (CPI), Producer Price Index (PPI), and Employment and Earnings (E&E) monthly.

23. Business Conditions Digest (BCD): A publication produced by the Department of Commerce which measures the current condition of the US economy, and provides economic indicators and other data useful in forecasting inflation, production, and unemployment.

24. Calendar Year (CY): The twelve month year starting in January and ending in December. The basic accounting time frame for the Bureau of Labor Statistics (BLS) wage and price data is the calendar year (CY).

25. Calendar Year Index: An index developed by averaging wage or cost escalation data for the twelve months from January to December.

26. Change of Base Year: The change of the point of reference for an estimate from one year to another. This is done by multiplying all the values in the estimate by a compound inflation index.

27. Common Support Equipment: The equipment required to maintain and care for the system while not directly engaged in the performance of its mission, which is presently in the DOD inventory for the support of other systems.
28. Composite Index: An index used to inflate a multi-year project. It is calculated by inflating the percentage of funds spent each year by the appropriate compound inflation factor.
29. Compound Index: An inflation index which translates cost forward or backward for a multi-year period. It is the product of the individual (yearly) escalation factors. For example, if the escalation factor for FY 1985 to FY 1986 were 8% and the escalation factor from FY 1986 to FY 1987 were 7%, then the compound index for 1985 to FY 1987 is  $(1.08) \times (1.07) = 1.1556$ .
30. Constant Dollars: A cost or budget estimate in constant dollars is an estimate which has not been inflated. Any year's dollars may be used as the base year. For example, an estimate can be in FY86 or FY89 constant dollars (prices).
31. Consumer Price Index (CPI): An index which is based on the average market basket of goods and services purchased by the US consumer. A change in the CPI indicates a change in the cost of living for an average American family.
32. Contract Cost and Price Analysis: An analysis performed to support contract negotiations by evaluating prices submitted by prospective suppliers.

Such analyses are the responsibility of the procurement and production directorates of the subordinate commands of the US Army Materiel Command (AMC).

33. Contract Cost Data Report (CCDR): Detailed breakout of actual costs incurred by contractor for labor, material, overhead, engineering, and other cost items.

34. Cost: The value of economic resources such as manpower, equipment, real facilities, supplies, and all other resources necessary for weapon and support systems and programs. Usually measured in dollars.

35. Cost Analysis: An analytical process employed to estimate the cost of materiel development and procurement programs, management information/operating system development and operation, forces, and facilities. This cost is a measurement of economic resource requirements; i.e., manpower equipment, real property, facilities, and supplies. Cost analysis generally involves the following three steps:

a. The development of relationships between prior, and current system resource requirements, design or performance characteristics, and force deployments.

b. The application of these relationships to new systems specifications as a means of projecting their resource requirements.

c. The examination of the sensitivity of resource use to varying assumptions regarding future system performance, operational concepts, and force composition. Cost analysis is not designed to provide the precise measurements required for budgetary purposes.

36. Cost Analysis Brief (CAB). A HQDA (Comptroller of the Army) originated document presenting a comparative analysis between the Materiel Developer's BCE and his IPCE/ICE or between his BCE and the Joint Cost Team developed IPCE

37. Cost Analysis Improvement Group (CAIG). The principal advisory body to the DOD on matters of cost. Organizationally located in the Office of the Secretary of Defense, Directorate of Program Analysis and Evaluation.

38. Cost-Benefit Analysis: An approach to solving problems of choice involving a definition of objectives and alternatives, and what each alternative will yield in benefits. Often used interchangeably with economic analysis or cost-effectiveness analysis.

39. Cost Categories: The major divisions of weapon/support systems' costs from inception to retirement of the system. These are:

a. Research and Development (R&D): This category includes those costs resulting from applied research, engineering design, analysis, development, and testing which can be related to a specific weapon/support system WBS component. The effort from which these costs derive usually occurs within

advanced development, engineering development, and operational systems development of the R&D cycle.

b. Investment: This category contains those cost elements which occur as a result of the size of the production buy or occur repeatedly in the production of a weapon/support system or its components. The buy will include end items (generally level II equipment) projected for replacement due to wearout during the total life cycle of the weapon support system.

c. Operating and Support Costs: This category includes those costs resulting from the operation, maintenance, and consumption of materials and supplies for a weapon/support system after acceptance into the Army inventory.

40. Cost-Effectiveness Analysis: The quantitative examination of alternative prospective systems for the purpose of identifying the preferred system and its associated equipment, organizations, etc. The examinations aim at finding more precise answers to a question and not merely justifying a conclusion. The analytical process includes trade-offs among alternatives, design of additional alternatives, and the measurements of the effectiveness and cost of the alternatives. The process of comparing alternative solutions to mission requirements in terms of the value received (effectiveness) for the resources expended (costs).

41. Cost Elements: The subdivision of cost categories related to work areas by processes performed in developing, producing, and operating a weapon/support system. Cost elements in the R&D cost category, for example, include engineering, tooling, and prototype production.

42. Cost Estimate: The estimated cost of a component or aggregation of components. The analysis and determination of cost of equipment and inter-related activities is cost analysis. Costs in a cost analysis usually fall into one of three basic categories: Research and Development, Investment, or Operating and Support Costs.

43. Cost Estimate Control Data Center (CECDC): A separate and identifiable point of registration and control for cost submissions, which is located within the cost analysis activity at each MSC, established to review and validate cost estimates and data before release for official use.

44. Cost Estimating Principles: Cost estimates should be expressed in terms of limits within which the ultimate cost of the program may be expected to fall. To the extent possible, schedules and funding profiles will be structured to accommodate program uncertainties and unforeseen problems. The actual approved program cost may vary somewhat from the estimated cost because of varied constraints, such as availability of funds, a factor which is outside the control of the project manager or other responsible agencies. Cost tracks to insure traceability of estimates will be maintained with particular attention given to program influences outside the control of the project manager.

45. Cost Estimating Relationship (CER): A numerical expression of the link between a physical or performance characteristic, resource, or activity and a particular cost associated with it. A functional expression which states that the cost of something may be estimated based on a certain variable or set

of variables. The relationship is derived by analyzing historical data on different systems to obtain a functional relationship between several system characteristics. The variable to be estimated is called the dependent variable, and the variables which drive the dependent variable in the CER are called independent variables.

46. Cost Factors: A cost per unit of resource. A value established on a per unit basis which, when multiplied by the number of units or program factor, yields the estimated total cost.

47. Cost Growth: Cost growth is a term related to the net change of an estimated or actual amount over a base figure previously established. The base must be relatable to a program, project, or contract and be clearly identified including source, approval authority, specific items included, specific assumptions made, date, and amount.

48. Cost Information Reports (CIR's): Breakout of actual costs incurred on a project by labor, material, overhead, engineering, direct labor, and similar categories. Done by Work Breakdown Structure (WBS) and requested on DA Form 1559. Has been replaced by CCDR, DA Form 1921.

49. Cost Model: An ordered arrangement of data and equations that allows measuring the use of physical resources in terms of cost. A mathematical device used to develop estimates and output formats for presentations. The model consists of an input format to specify the problem, information, (including both system description data and estimating relationships), and an output format.

50. Cost and Operational Effectiveness Analysis (COEA): A study which has as its purpose the development of recommended rank orderings of candidate systems based on meaningful relationships between cost and operational effectiveness.
51. Cost Overrun: A cost for a system which is larger than the amount budgeted due to management oversight or miscalculation. The cost overrun is the difference between the cost and amount budgeted.
52. Cost Parameters: Any of a number of parametric constants used in cost estimating work. These include overhead and burden rates, inflation factors, learning factors, learning curve data, and Army TOE relationships.
53. Cost Tracking: A process in which data is collected and evaluated to determine reasons for variation between successive cost estimates or between planned versus actual costs.
54. Cost Validation: The examination of all elements of a cost estimate to determine if it is accurate and reasonable: e.g., the soundness of computational methods, reasonableness of assumptions, and completeness.
55. Current Assessment or PM's Current Estimate: The latest estimate made for the system's project costs, based upon current cost, production, and management conditions. This estimate is compatible with the Work Breakdown Structure of the Baseline Cost Estimate at least at the aggregate level. The current assessment is developed, maintained, and submitted by the proponent for Army Systems Acquisition Review Council/Defense Systems Acquisition Review

Council (ASARC/DSARC) Milestones II and III review without regard to the previously established, approved program. In effect, it represents the proponent's "best" estimate of project costs at that point in time. More commonly referred to as the PM's Current Estimate.

56. Current Dollar Estimate: Estimate in inflated dollars.

57. Current Dollars: Another name for inflated dollars. Also referred to as "then year" dollars.

58. Data Resources, Inc. (DRI): A subsidiary of McGraw-Hill Publishing Company which forecasts prices and wages for the Office of Management and Budget and many commercial firms. Currently considered to be the best source in the US for forecasted commodity and wage costs by Bureau of Labor Statistics classification. Publishes the US Cost Forecasting Service Review.

59. Decision Coordinating Paper (DCP). The principal document to record essential system program information for use in support of the Secretary of Defense decision making process at the major acquisition milestones.

60. Defense Systems Acquisition, Review Council (DSARC). An advisory body to the Secretary of Defense on major system acquisitions. The Council members are the service secretaries and the OSD staff principals.

61. Delphi Technique: A polling technique used to make "expert opinion" estimates. The experts in a given technical area are usually polled by letter. They are asked to estimate the cost for a system displaying certain specified characteristics. Their responses are summed, and a mean, standard deviation, and range established. This data is fed back to the experts in another letter and they are allowed to change their estimates, if they desire. After several iterations, an order of magnitude estimate or consensus for the mean results.

62. Deployment Schedule: A schedule which displays the fielding of a weapon system by calendar year, month, or week.

63. Design to Cost (DTC): The cost established prior to development of an item as a means for guiding and controlling program costs. Design to cost is the flyaway cost of the item. When used, what it includes should be clearly stated. The "design to cost" represents, in essence, a contract between the Army and Office of the Secretary of Defense (OSD). Exceeding the "design to cost" will cause review and decision on the future of the program by the Army and OSD.

64. Design to Unit Production Cost (DTUPC). The Design to Unit Production Cost (DTUPC) is used in dealings between the materiel developer and potential contractors. It is based on the contractor's recurring costs for major system equipment and may include other costs such as non-recurring costs, as appropriate.

65. Development Estimate: The estimate of operational/technical characteristics, production and delivery schedules, and program acquisition cost for both development and procurement, when approval is given by the Secretary of Defense for the program to move into full-scale engineering development. The cost portion of the development estimate is that portion of the current assessment accepted or modified by the ASARC/DSARC II and approved by the Secretary of Defense.

66. Discounting: A procedure by which the time value of money is entered into an analysis. If two projects require expenditure of \$5 million each and one has a deferred payment schedule, it is less costly to the government, other things equal. The discount rate is currently 10%.

67. Discrete Cost Elements: Discrete cost elements are per unit cost expressions such as unit hardware, flyaway, or production cost. Their development is required in order to establish cost parameters for program cost control purposes and for the establishment of "design to" unit production cost. The development of discrete cost elements is to be in conformance with the key cost analysis definitions contained in AR 11-18. Discrete cost elements must be carefully chosen so that cost parameters can be traced, and causes for cost growth identified.

68. Economic Analysis: A systematic approach to the problem of choosing how to employ scarce resources most effectively, which investigates the full implications of achieving the given objective with each viable alternative approach. The determination of efficiency and effectiveness is implicit in the assessment of the cost effectiveness of alternative approaches.

69. Economic Price Adjustment (EPA): A mathematical formula put into procurement contracts which allows the purchase price of an item to change as the contractor's labor and material costs rise due to inflation. The goal is to protect the contractor from unforeseen inflation and the government from unreasonably high bids due to market uncertainties.

70. Economies of Scale: As the size of a manufacturing plant increases, more efficient machines can be purchased and labor can be utilized more productively. Economies of scale result in more output per contract dollar until the optimal plant size is reached.

71. Engineering estimate. Sometimes referred to as "grass-roots" or "bottoms-up" estimate. An industrial engineering based approach relying on detailed simulation of all the operations and an exhaustive list of all the materials required.

72. Engineering Index: An index which is based upon detailed engineering data which describes labor and material and how they are combined to produce the item to be purchased.

73. Equipment:

a. Common Support: The equipment which is presently in or projected for inclusion in the DOD inventory for support of two or more different weapon/support systems.

b. Peculiar Support: The equipment which is developed and produced for the unique purpose of supporting a specific weapon/support system.

74. Escalated Dollars: "Current" or "inflated" dollars.

75. Escalation Factor: A one year inflation factor which allows a cost figure to be translated from one year's dollars to the next.

76. Escalation Schedule: A schedule in a procurement contract which indicates how costs will escalate, given changes in certain parameters specified by the contract.

77. Escalation Clause: A clause in a contract which allows the contractor to increase the price charged the customer when certain conditions are met.

78. Expert Opinion Estimating: Estimation of costs based on the opinion of the experts in the field. Especially useful when estimating costs for "state-of-the art" technology or systems. Involves a Delphi polling of experts.

79. Extrapolation: The process by which data outside of set of experience are obtained using mathematical or statistical procedures. Extrapolation becomes increasingly hazardous the farther the extrapolated point is from the set of experience.

80. Fiscal Policy: Government policy, as expressed through legislation, taxation, and expenditure as it affects the nations's economy.

81. Fiscal Year (FY): The standard government year for accounting purposes. Before 1977, the fiscal year began in July and ended in June. Starting in 1977, the fiscal year has begun in October and has ended in September.

82. Five-Year Defense Program (FYDP). The Five-Year Defense Program summarizes all approved programs of the entire Department of Defense. Resources or inputs for five years are combined with military outputs or programs for the same period. FYDP is expressed in terms of programs, program elements, and resource categories.

83. Fixed Market Basket Index: An index based on a group of items which does not change in quantity or quality over time. Also called a Laspeyre's index.

84. Flyaway Cost: Total procurement costs of the investment recurring and nonrecurring cost categories of AR 11-18 for the production of major system equipment, excluding modifications.

85. Force Structure Analysis: The analysis of proposed forces to obtain a picture of resource implications for planning.

86. Force Structure Cost Analysis: An analysis of resource requirements for past, present, and future force structures. The analysis may consider the

interrelationship of resources to properly credit the use of common and inherited assets, when the given force is structured partially from existing components.

87. Forecasted Indices: Forward looking indices or projections of current trends for use in cost analysis or budgeting. Examples of forecasted indices are the OSD indices, distributed by AMC to the Major Subordinate Commands for cost and budget study preparation, and the Data Resources Inc (DRI) indices which forecast commodity prices by Bureau of Labor Statistics code.

88. Forecast: A pictorial view of the future summarized by key data, as estimated for the future time periods of interest.

89. Foreign Military Sales (FMS): The sale of weapon systems and other defense materiel to qualifying foreign countries for cash. The principle of sale is "replacement pricing", and accurate replacement pricing is accomplished using inflation indices if the last procurement is not in the current fiscal year.

90. Full Costing: An estimate which considers all costs, even those remotely associated with the system. Exceedingly difficult to achieve and not necessary in most situations.

91. Funding Profile. A document which shows funding by appropriation for each year in review.

92. Generic Index: An index which pertains to a group of similar items, rather than one specific item.

93. Hardware Cost: Defined as the total costs (all appropriations) for the investment recurring cost category of AR 37-18 for the major system equipment which is part of the work breakdown structure.

94. Historical Inflation Index: An index which tracks cost changes over time, from a point in the past up to the current date.

95. Historical Inflation Program: A computational methodology used to produce historical inflation indices. Normally, constituent material and labor indices are combined to get the historical index for the end item. The Standard Army Inflation Methodology (SAIM) requires that Bureau of Labor Statistics Producer Price Index (PPI) and Standard Industrial Classification (SIC) codes will be used.

96. Implicit Pricing: The imputation of a price to an item for which no direct verifiable source is available.

97. Incremental Cost: The net additional costs that would result from choosing a particular alternative as compared to a continuation of the present program. Costing that takes into account the availability of existing resources when estimating the costs of adding a new system to the force or changing the configuration or activity rate of an existing system.

98. Independent Cost Estimate. An estimate of program cost developed outside normal advocacy channels by a team which generally includes representation from the functional areas of cost analysis, procurement, production management, engineering and program management.

99. Independent Government Cost Estimate (IGCE): A cost estimate developed by a government agency, independent from contractor program proponent channels, and having the express purpose of serving as an analytical tool to validate or cross-check estimates developed in proponent channels.

100. Independent Parametric Cost Estimate (IPCE): The IPCE is intended to provide an estimate independent of functional, project manager, or contractor influence. These estimates generally consider cost at a high level, or the Work Breakdown Structure (WBS), and are predicated upon actual historical costs encountered in like or similar programs. IPCE's are used to "test the reasonableness" of the proponent estimates at key decision points. The project manager's estimate normally is to be used for programming purposes, including changes to the Five-Year Defense Plan (FYDP). The IPCE will not be used for programming purposes unless directed by OSD. To preserve the intent of independence. IPCE's are the functional responsibility of the Comptroller of the Army (COA). IPCE's are prepared and submitted through command channels for each DSARC/ASARC review or to other special demand.

101. Index: A mathematical technique or procedure for tracking cost changes over time. Historical indexes track the movement of cost in the past, up to the current date, whereas projected indexes use statistical procedures, and employ current data and economic indicators, to estimate future price levels.

102. Index Number: A numerical value obtained from an index function by substituting actual data into the equation.

103. Indexing By Similarity: The use of an index for a similar item as a proxy for the desired item's index, when the desired index does not exist.

104. Indices: Plural of index.

105. Individual System Cost Analysis: An analysis which considers the costs associated with one system, as opposed to an analysis of several alternatives, which is termed a force structure cost analysis.

106. Industrial Engineering Estimate: Used primarily to estimate recurring production or investment costs, and is developed by building up costs by detailed analysis of work processes and material. It involves an examination of separate segments of work at a low level of detail and synthesis of the many detailed estimates into a total.

107. Inflated Dollars: Dollars which reflect the purchasing power of the dollar in the year of expenditure.

108. Inflation: A decrease in the purchasing power of the unit of account (i.e., dollar) over time or, equivalently, an increase in the cost of an item due to increases in the costs of the constituent items used in its manufacture.

109. Inflation Factors: A numerical inversion of an inflation index which allows cost computations to be made easily by the user. An example follows:

Historical Inflation Index

FY	<u>Index</u>	<u>Factor</u>
84	1.193	1.000
83	1.144	1.043
82	1.076	1.109
81	1.000	1.193

To move a price from FY 82 to FY 84, an analyst would multiply the FY 82 cost by 1.109, the FY 82 factor.

110. Inflation Focal Point: An area within a command, generally Cost Analysis, Office of the Comptroller, which has responsibility for inflation policy and guidance within the command. This term is commonly associated with the individual who is designated "key man" for that function.

111. Inflation Index: A numerical index that measures inflation over a period of time. Historical inflation indices measure inflation from a point in the past to the present date. Projected indices are a forecast of inflation, given current trends and anticipated supply and demand conditions.

112. Interval Estimate. An estimate which states that the parameter of interest has a value that is located somewhere within a range or interval of values.

113. Investment Cost: The sum of all costs resulting from the production and introduction of the materiel system into the Army's operative inventory.

114. Layspeyre's Index: An index in which the market basket is fixed, and only prices vary over time.

115. Lead Time: The time allowed or required to initiate and develop an item or system so that it will be available and ready for use.

116. Learning Curve: The cost-quantity relationships for estimating the cost of equipment. Generally used to predict or describe the decrease in the cost of a unit as the number of units produced increases. Also called experience curves.

117. Level: A term applied to the structuring of the hardware components of a given system. Level refers to subdivisions of hardware and software in the Work Breakdown Structure (WBS).

118. Life Cycle Cost Analysis: The determination of costs for a system, organization, or item of equipment, which will be incurred throughout its entire life. This cycle begins with research and development and continues through investment and operations to disposal of the system through redistribution or phasing out of the organization. In addition to the generally considered acquisition, installation, and operation costs, maintainability and reliability of the system or organization are major considerations.

119. Life Cycle Costs: The estimated or actual costs associated with proposed courses of action on materiel programs from the initial development through the operational phase. Life-cycle costs are those out-of-pocket costs

and expenses expected or estimated to accrue, based upon predicted system effectiveness, operational efficiency, logistics and manpower requirements, the acquisition process, and the effects of reliability, maintainability, obsolescence, wear-out, loss, and attrition factors. Life-cycle costs may include resources, such as manpower, materiel, capital equipment, and installations (translated into monetary terms) as well as the monetary costs of acquisition and operational use.

120. Major Item: A finished combination of end products, component parts, and or materials ready for intended use.

121. Major Systems Acquisition: A system acquisition program designated by the Secretary of Defense to be of such importance and priority as to require special management attention.

122. Major Weapons System: One of a limited number of systems or subsystems which for reasons of military urgency, criticality, or resource requirements, is determined by the Department of Defense as being vital to the national interest.

123. Make Or Buy: Refers to the decision by management as to whether parts, components, or equipment items will be fabricated by the company ("make") or obtained from outside sources ("buy").

124. Management Reserve: The amount in dollars or manhours which is held back from the negotiated contract amount or allocated target at the program management level.

125. Management System: A set of policies, methods, procedures and reports having for its objective the orderly, routine, and economical performance of a business operation or function.

126. Materiel: (1) Weapons, equipment, supplies, etc; distinguished from personnel. (2) The name of the organization which manages materiel.

127. Materiel Systems: Weapon systems, complementary equipment systems such as air defense control and coordination systems, or related items.

128. Mean Time Between Failures (MTBF): For a particular interval, the total functioning life of a population of an item divided by the total number of failures within the population during the measurement interval. The definition holds for time intervals, cycles, miles, events, or other measures of life for a system or part.

129. Mean Time To Repair: The total corrective maintenance time divided by the total number of corrective maintenance actions during a given period of time.

130. Military Construction Army: An appropriation category providing for the acquisition, construction, installation, and equipping of temporary or permanent public works, military installations, and facilities for which authorizing legislation is required. An estimate of this cost is used in the derivation of program acquisition cost and program life cycle cost.

131. Military Personnel, Army (MPA): Provides for the pay, allowance, individual clothing, subsistence, and permanent change of station for members of the military service on active duty. It is used in the derivation of program and life cycle cost.

132. Mission Reliability: The probability that a system will operate in the mode for which it was designed for the duration of a mission, given that it was operating in this mode at the start of the mission. This measure is included in the concept of dependability, and is sometimes referred to by that name.

133. Modification: Changes to an end item or an item of supply for any stated purpose. A change in an airframe, component, or equipment that affects performance, ability to perform intended mission, flight safety, production, or maintenance. A block change upgrades a system in the field or on ships or on aircraft. A customer request to change a proposal is termed a modification.

134. Modification Request (MR): It is used in source selection and covers government change in requirements after proposal has been submitted.

135. Monetary Policy: The use of controls over bank lending power, the money supply, and interest rates to affect the economy. Directly affects the rate of inflation.

136. Moving Market Basket Index: An index which is predicated on a commodity or group of commodities which change as time passes. The Consumer Price Index

of the 1940's included items such as table model radios and phonographs. The Consumer Price Index of the 1980's has replaced them with solid state color televisions sets and stereo equipment.

137. Multi-Year Appropriation: An appropriation against which obligations may be made for a specified period in excess of one fiscal year.

138. Multi-Year Contract: A contract covering more than one year but not in excess of five fiscal years' requirements. Total contract quantities and annual quantities are planned for a particular level and type of funding. Each program year is budgeted and funded annually and, at the time of award, funds need only to have been appropriated for the first year. The contractor, however, is protected against loss resulting from cancellation by contract provisions which allow reimbursement of costs included in the cancellation year procurement and advanced funding requirements for the follow-on fiscal year procurement.

139. Multi-Year Funding: A Congressional authorization and appropriation covering more than one fiscal year. The term should not be confused with "two year" or "three year" funds which cover only one fiscal year's requirements, but permit the Executive Branch more than one year to obligate the funds.

140. Multi-Year Procurement: A generic term describing situations in which the government contracts for more than the current year block buys, and advance procurement. In general, advance long lead procurements in support of a single year's requirements would not be considered a multi-year procurement.

141. Negotiated Contract: One obtained by direct agreement with a contractor without formal advertising for bids, but after soliciting price quotations from qualified sources.

142. Nonrecurring Costs: Those elements of development and investment cost which generally occur only once in the life cycle of weapon/support system. Often referred to as engineering, system test, tooling, and pre-production activities. Further, includes basic design development through first release of engineering drawings and data, all system and subsystem test activities (except end item acceptance testing), configuration audits, qualification testing, technical publications through initial release, basic tool and production planning through initial release, all basic tooling, prototypes, engineering models, units built for test purposes only, units not built to production configuration, and specialized work force training.

143. Obligations: Obligations in federal accounting represent assignment of funds to specific projects to acquire materials or services, or to make payments under certain conditions (such as loans, grants, subsidies, and contributions). The Congress has specifically prescribed the kinds of transactions that may be recorded and reported as obligations of the government of the United States. Total obligations incurred include the value of orders placed, contracts awarded, services received, and similar transactions requiring the disbursement of money at a later date.

144. Operating Cost: The total outlay in cash, or its equivalent, applied in carrying out a specific program or function. For major systems, it can represent a large portion of the life cycle cost.

145. Operating Program: The program prepared by each Army command, agency, and installation which lists the objectives to be achieved by that organization during the fiscal year. The program relates the fiscal year objectives to available resources such as manpower, materiel, and money.

146. Operating and Support Costs. A life cycle cost term covering the cost of operating and supporting a system from initial operational capability (IOC) for a given period of years.

147. Operations Research: A scientific approach which uses analytic methods adopted from mathematics to solve operational problems. The objective is to provide management with a logical basis for making sound predictions and decisions. Among the common scientific techniques used in operations research are mathematical programming, monte carlo methods, statistics, information, game, and queuing theory.

148. OSD Indices: The Department of Defense inflation indices produced by Data Resources Inc. for Office of Management and Budget. The indices project inflation by appropriation and list anticipated average spendout rates, so the cost and budget studies with future expenditures can be computed in inflated dollars.

149. Other Costs: A cost element which covers costs not usually listed under direct material, labor, or overhead. Some of these are: data processing, travel, freight, and consultants.

150. Outlay Rate: The rate at which funds are disbursed on a project. The usual method of disbursement is on an accrual basis. The contractor is paid as work is completed. Average spendout or outlay rates for each appropriation are listed in the OSD/AMC Inflation Guidance Package.

151. Outlays: The payments made against a contract; also called disbursement.

152. Outyears: The years beyond the current year and the budget year.

153. Overhead: A cost which, because of its incurrence for common or joint objectives, is not readily subject to treatment as a direct cost. Such indirect cost is incurred to benefit the manufacturing or business base of a contractor. The character of overhead cost requires estimating, budgeting, and control techniques that take into account the total business base of a contractor. Accordingly, the overhead applicable to any one estimate or contract is by an appropriate distribution of indirect costs through the use of a per hour rate or percentage applied to direct hours or costs. Indirect is a term which is synonymous with overhead.

154. Overhead Budget: Management allocation of planned indirect costs to each established overhead pool or organization.

155. Overhead Rates: Indirect dollars per hour or cost to cost relationships that mathematically reflect the distribution of overhead costs over a labor or cost base.

156. Overrun: Costs in excess of the estimated (target) contract cost.
157. Paasche Index: A moving market basket index in which the typical group of items purchased changes as technology changes.
158. Parametric Estimating: Parametric estimating is an estimating technique which employs one or more cost estimating relationships for measurement of costs associated with the development, manufacture, and/or modification of a specified end item, based on its technical, physical, or other characteristics. Also may be used to develop estimates for physical or performance characteristics.
159. Payback Period: The period over which the government will receive a return on its investment. The Quick Return on Investment Program (QRIP) justifies capital expenditures on the basis of significant short term return. Weapon systems, on the other hand, supply benefits for twenty years or more in most cases.
160. Peculiar Support Equipment: Those equipments required to maintain and care for the system which are not directly engaged in the performance of its mission, and which have application peculiar to the system being analyzed.
161. Performance Budget: A budget based upon functions, activities, and projects, whose principal analytical orientation is the measurement of efficiency of operating units. For example, such a budget in an agency might require computation of the cost per unit of mail processed for one branch of the agency and the cost to process reorders in another branch.

162. Planning Estimate: The estimate of operational/technical characteristics, schedule, and program acquisition cost when approval is given by the Secretary of Defense for program initiation. The cost portion of the planning estimate is that portion of the Baseline Cost Estimate accepted or modified by the ASARC/ DSARC I approved by the Secretary of Defense.

163. Planning-Programming Budget System (PPBS): A management system, introduced by the President into the Executive branch in 1965, comprised of three elements:

Planning. The study of objectives and of alternative ways to achieve them in future environments, and of contingencies and how to respond to them.

Programming. A method or system of describing activities according to objectives or outputs and of relating these objectives to the cost or inputs needed to produce the outputs or effectiveness desired.

Budgeting. The activity through which funds are requested by the President and Congress, and appropriated, apportioned, and accounted for.

164. Point Estimate: An estimate which measures a single numerical value rather than a range of values.

165. Points of Change: A measure of change in an index. It is computed as the difference between the value of an index measured at two different points

in time. Percentage change is this difference, normalized by the index value in question.

166. Price: Refers to the dollar value a company will sell its product for or commit to a contract. Includes profit or fee added to cost.

167. Price and Availability (P&A) Study: The effort required to prepare P&A data (estimated dollar cost and estimated delivery dates) for use in the preparation of a letter of obligations authority (LOA).

168. Price Analysis: The process of examining and evaluating a prospective price without evaluating the separate cost elements and proposed profit of the individual offer or whose price is being evaluated. It may be accomplished by: (a) a comparison of submitted quotations; (b) comparison of price quotations and contract prices with current quotations for the same or similar items; and (c) the use of parameters such as dollars per pound, or a comparison of proposed prices with independently developed estimates.

169. Price Change: A change in price asked by the seller. Market conditions as well as costs for labor and raw materials affect price.

170. Price Index: A ratio which expresses the relationship between prices at two different points in time. Labor and materials are the two basic resources generally considered in constructing a price index. The cost of living index is a form of price index.

171. Pricing: The collection of actual contractor costs and fees related to a product or service and the development of a unit figure for inclusion in price catalogs, customer billings, or accounting operations.

172. Prime Cost: Cost of direct material and direct labor.

173. Procurement: The act of obtaining raw material, purchased parts and equipment, subcontracted and other externally produced items. The contractual accession of equipment, resources, property, or services by purchasing, renting, leasing, or other means. In the supply management sense, it may include the functions of design, standards determination, specifications writing, selection of suppliers, funding, contract administration, and other related function.

174. Procurement Cost: The sum of recurring and non-recurring production costs. It includes engineering changes, system test and evaluation, data, system/project management, operational/site activation, training services and equipment, initial spares and repair parts, transportation, and miscellaneous costs.

175. Procurement Lead Time: The time elapsing between the initiation of procurement action and the receipt into the system of material purchased as a result of such actions.

176. Procurement Schedule: Display by fiscal year of quantities of system peculiar major items/components to be procured for a program.

177. Producer Price Index (PPI): A price index developed by the Bureau of Labor Statistics which tracks goods and commodities at the wholesale level.

178. Product Cost: The total cost associated with production of a specific quantity of an item.

179. Production Cost: The procurement and other appropriation supported costs of system hardware and support equipment. Encompasses both contractor and government cost of the tooling, production engineering, manufacturing, procurement, sustaining/liaison engineering, initial, and customer training.

180. Production Decision. The last of the major milestone decision points. At this point the Secretary of Defense decides whether a weapon system is to proceed into final production and be deployed in the field.

181. Production Lead Time (PLT): The time interval between the award for a contract or placement of an order, and the first contract or scheduled delivery.

182. Production Time: The time required to manufacture an item. The time varies depending on government definitions as to what is a "complete item".

183. Productivity: The state of yielding results, benefits, or profits. Productivity rate is a measure of the rate at which results, benefits, or profits are supplied. For example, the amount of concrete poured per hour is a measure of productivity.

184. Profit: Generally characterized as the basic motive of business enterprise. The excess of the revenues from sales of goods or services over the related cost thereof in a given transaction or over a given period of time. The word "profit" is used in fixed price type contracts versus "fee" in cost type contracts.

185. Program: A plan of action designed to accomplish a definite objective. It is specific as to the work to be accomplished, the time-phasing of the work to be done, and the means proposed for its accomplishment, particularly in quantitative terms, with respect to labor, material, and facilities requirements.

186. Program Acquisition Cost: This cost encompasses all contractor and government cost elements and work breakdown structure elements for the research and development, and investment cost categories. Does not include operation and support elements.

187. Program Analysis: The detailed examination of a program to determine its requirements and its feasibility as indicated by available resources; or the review of a program to determine and summarize technical, schedules, and cost history.

188. Program and Financial Plan (PFP). A multi-year budget forecast based on a program structure which projects the future output (usually five years) and cost implications of current decisions, and shows comparative data for the fiscal year just past, the current year, and the budget year.

189. Program Cost: This cost is developed using the entire work breakdown structure; considers all appropriations; and encompasses all contractor and government cost elements for the complete research and development, and investment cost categories, i.e., includes all nonrecurring and recurring costs. It usually excludes sunk costs prior to program go-ahead and program deactivation costs. Normally, it does not include operating and support costs unless so specified by program ground rules.

190. Program Cost Categories: (1) Research and Development - Those program costs primarily associated with research, design, development, and test efforts, including the development of a new or improved capability to the point that it is ready for operational use. The costs include equipment costs funded under the RDT&E appropriation. They exclude costs which appear in the procurement, military personnel, operation and maintenance appropriations. (2) Investment (Production) - Those program costs required beyond the development phase to introduce a new system or capability into operational use. To procure initial, additional or replacement equipment for operational forces or to provide for major modifications of an existing capability. They include procurement and military construction appropriation costs. (3) Operating and Support (O&S) - Those program costs necessary to operate, support, and maintain the operational capability. These costs include military personnel, and operation and maintenance and exclude RDT&E and investment appropriations. O&S costs may or may not be included in program costs. The term "acquisition" is often used to cover the RDT&E and investment cost categories.

191. Program Objectives Memorandum (POM). A memorandum, in prescribed format, submitted to the Secretary of Defense by the secretary of a military department or the director of a defense agency, which recommends the total resource requirements within the parameters of the Secretary of Defense fiscal guidance.

192. Programming: The process of time phasing resources. Within a project funding may be distributed or programmed over a several year period.

193. Program Year: The first fiscal year after the budget year, or the second fiscal year after the current fiscal year. During fiscal year 1985, the budget year would be fiscal year 1986 and the program year would be fiscal year 1987.

194. Progress Curve: A curve which depicts percent of project completion as a function of time.

195. Project Budget: The targeted cost for all cost elements of a budget.

196. Projected Indices: Forecasted inflation indices which provide estimates of relative cost for definite time periods.

197. Range Estimate: An estimate of the range of variation of a variable. Also called "getting a handle" on the problem or finding a "ballpark figure".

198. Real Cost Growth: Cost growth in real rather than nominal terms. Cost growth with all inflation recovered. Real cost growth is attributable to changes in design or method of manufacture not to increases in the prices of labor and material.

199. Rearrangement Cost: The cost of shifting the positions of units of machinery or equipment to obtain greater efficiency under existing conditions. Similar costs for office, test, or storage areas.

200. Reasonable Cost: A cost is reasonable if, in its nature or amount, it does not exceed what would be incurred by a prudent person in the conduct of competitive business.

201. Recurring: Those elements of investment cost which occur repeatedly during production and delivery of a weapon or support system. Includes fabrication, assembly, manufacturing, sustaining engineering and planning, sustaining tooling, and acceptance testing of production items.

202. Recurring Costs: Repetitive production costs that vary or occur with the quantity being produced.

203. Regression Analysis: A statistical procedure by which a single dependent variable is explained or predicted by one or more independent variables. The technique generally used to develop the regression curve is called "least squares", which refers to the calculus involved the solution process. It is

called "regression analysis" because the regression curve is developed by an averaging process, which deemphasizes the significance of outlying data values given the estimated value of the dependent variable.

204. Reprogramming: The transfer of funds between programs for an appropriation; a shifting of funds from the original purpose for which they were justified by Congress.

205. Request for Proposals (RFP): A solicitation document used in negotiated procurements. It usually contains a description of the items or services to be procured, the terms and conditions, types of contracts, schedules, work statements, specifications, listings of the items to be delivered, funding, data requirements, and instructions for the preparation of technical management and cost proposals.

206. Request for Quotations: A solicitation document used in negotiated procurements. Similar in usage to an RFP. However, usually only covers the procurement of standard off-the-shelf items built to known specifications and not requiring extensive proposal documentation.

207. Required Operational Capabilities (ROC): The ROC is a document which states concisely the minimum essential operational, technical, logistical, and cost information necessary to initiate development or procurement of a system. Preparation of a ROC is appropriate when a thorough, advanced development program has been conducted which results in an up-to-date CFP or when

procurement of a nondevelopmental item has been determined to be desirable. The ROC is prepared by the combat developer in coordination with the materiel developer and forwarded to HQDA.

208. Research Development, Test, and Evaluation (RDT&E) Cost: The sum of all costs (contractor and government) resulting from applied research, engineering design, analysis, development, test, evaluation and managing development efforts related to a specific system.

209. Reserve: The portion of appropriations, contract authorizations, other funds, or capital set aside for savings, contingency, or other purposes.

210. Risk: A state in which the ultimate outcome is unknown, but in which all possible outcomes can be enumerated and probabilities assigned to each.

211. Secondary Items: End items, requirement assemblies, parts and consumables, other than principal items.

212. Selected Acquisition Report (SAR): Standard, comprehensive, summary reports on major defense systems for management within the Department of Defense. SAR's are submitted to the Office of Secretary of Defense for transmittal to the Congress and other government agencies.

213. Sensitivity Analysis: Repetition of an analysis using different quantitative values for selected key parameters or assumptions in order to demonstrate the effects of changing the parameters.

214. Shadow Price: An imputed value; an exchange rate other than a market price. In economics (especially in appraisal of public investment projects), the estimates of the intrinsic value of the scarce factors of production available. Shadow prices may be used when market prices (particularly those of capital and labor) diverge from the values that would prevail if (1) the investment under consideration were actually carried out, and (2) no fundamental disequilibria existed in the market. In linear programming, the shadow price is the amount of change in objective achievement per marginal change in some constraint.

215. Short Lead Time Items: Items having a procurement lead time of twelve months or less.

216. Should Cost: A concept of contract pricing that employs an integrated team of government procurement cost/price analysts, contract administration, audit, and engineering representatives to conduct a coordinated, in depth cost review and evaluation of a program at the contractor's plant. Its purpose is to identify uneconomical or inefficient practices in the contractor's management and operations, to quantify the findings in terms of their impact on cost, and to develop a realistic price objective for negotiations for for the program itself.

217. Simulation: The construction of a working mathematical or physical model presenting similarity of properties or relationships with the natural or technological system under study.

218. Source Selection: The formal procurement process used within DOD or a company to: (a) call for proposals, (b) evaluate proposals, (c) pass recommendations to higher authority, and (d) make final award of a contract by the selection authority.

219. Source Selection Advisory Council (SSAC): A group of military and civilian personnel from various departments and agencies within a DOD department that prepares summary reports and advises the SSA in the procurement process.

220. Source Selection Authority (SSA): Person designated as the final decision authority in a formal procurement.

221. Source Selection Evaluation Board (SSEB): A group of military and civilian personnel, representing the various functional and technical areas involved in a procurement. They are appointed by the Source Selection Advisory Council to direct, control, and perform the evaluation of proposals, and to produce the summary facts and findings required in the source selection process.

222. Spendout Rate: The rate at which funds are disbursed on a project. Also called the outlay rate.

223. Standard Army Inflation Methodology (SAIM): The uniform Army methodology developed for computing historical inflation indices. The method was developed to establish uniformity and comparability among system unique historical inflation indices for major weapon systems. It is based on several fundamental

concepts: cost weighting, engineering estimates, and standardization of computations using Product Price Index (PPI) and Employment and Earnings (SIC) code data.

224. Standard Industrial Classification (SIC) System: The method used by the Bureau of Labor Statistics, US Department of Labor, to define job skills across industries. SIC codes are four digits in length. The first two digits determine an industry, the third digit a product specialization, and the fourth a specific product. For example, for labor coded with 3792, the first two digits (37) indicate "transportation industry", the third (9) indicates "miscellaneous equipment", and the fourth digit (2) specifies "travel trailers and campers".

225. Standard Price: A uniform price for any item established by a designated central authority based upon the estimated purchase cost or replacement cost.

226. Statement of Work: A document which defines the contractual work to be accomplished. The part of an RFP or contract that defined the work which a customer wants performed.

227. Statistical Cost Estimating: Has been called "top-down" estimating, statistical cost analysis, cost analysis, formula estimating, parametric estimating, parametric cost sizing, estimating cost-to-cost, cost estimating relationship (CER) estimating, and other names. The estimating method

requires an analysis of the work to be performed, but generally can be used with much less detail in the definition of work than those required for other methods. When using this method of estimating, cost is estimated for the entire job, or major portions of it, using certain major or technical or physical characteristics (like weight, speed, horsepower, etc.) with their relationships to costs as developed by studies of past projects, their technical characteristics, and their costs. One example of this kind of estimating is "dollar per pound" for airframe structure.

228. Statistics: The science concerned with the collection and interpretation of data, and with the scientific techniques of analysis used to draw conclusions about them while operating under uncertainty or under probabilistic conditions.

229. Sunk Cost: The total of all past expenditures or irrevocably committed funds related to a program or project. Sunk costs are generally not relevant to decision making as they reflect previous choices rather than current choices. Sometimes referred to as prior year costs.

230. Support Data: Labor, material, and other cost information that support prices or costs. It includes written information submitted with a cost proposal, explains the derivation and the bases for the estimates, and the rates and factors included in the proposal. Also includes the detailed information retained at the contractor's facility for on-site review.

231. Surrogate Index: An index which takes the place of another usually due to the non-availability of data for the original index.

232. Survey of Current Business: A monthly publication published by Department of Commerce, using Bureau of Labor Statistics data which highlights current business conditions and the state of the economy.

233. System: An integrated relationship of men, equipment, and methods appropriately organized to accomplish defined tasks.

234. System Effectiveness: A measure of the extent to which a system may be expected to achieve a set of specific mission requirements.

235. Table of Organization and Equipment (TOE): A table which prescribes the normal mission, organizational structure, personnel, and equipment requirements for a military unit, and is the basis for an authorizations document.

236. Then Year Dollars: Dollars which are escalated into the time period of contract performance. Sometimes referred to as escalated or inflated dollars.

237. Time and Material Contract: A contract providing for the purchase of supplies or services on the basis of: (a) direct labor hours at specified hourly rates (which rates include direct labor, overhead, and profit), and (b) material at cost.

238. Time-Phased Cost: A presentation of the cost results broken down by the period in which the costs occurred rather than a single total cost figure.

239. Time Series: A dependent variable which is expressed as a function of time. Although other factors not explicitly stated determine the dependent variable's value, the relationship between the dependent variable and time is the more important relationship.

240. Total Obligational Authority (TOA): The total amount of funds available for programming in a given year, regardless of the year the funds are appropriated, obligated, or expended. TOA includes new obligational authority, unprogrammed or reprogrammed obligational authority from prior years, and unobligated balances transferred from other appropriations.

241. TRACE: An acronym standing for total risk assessing cost estimate. A procedure whereby a risk factor is assigned to a system or subsystem under development. The most likely cost estimate for this system or subsystem is multiplied by its associated risk factor to obtain a cost which might be incurred due to technical problems or slippages in schedules.

242. Troop Support Indices: Historical inflation indices used to update past procurement prices in troop support items. The updated procurement prices are used for replacement cost estimates for repair or replace decisions and foreign military sales cases.

243. Uncertainty: A situation in which there is no objective basis for assigning numerical probability weights to the different possible outcomes or no way to describe or enumerate the possible outcomes.

244. Unit Cost Report (UCR): A report on the status of (1) program acquisition unit cost (total program cost divided by the total quantity), (2) current procurement unit cost (current fiscal year procurement cost divided by quantity to be procured in the current fiscal year), (3) contract costs, (4) schedule, and (5) performance. The UCRs are also to include any known, expected, or anticipated changes from the schedule milestones or operational and technical characteristics shown in the baseline program. It is submitted by the program manager on each SAR program at the end of each calendar quarter or when the program manager expects the unit costs to breach the thresholds described in the UCR legislation.

245. Unit Cost Summary (UCS): A HQDA (COA) document containing system unit costs reflecting various levels of cost aggregation. Its purpose is to provide a definitionally consistent set of unit cost figures for a materiel system.

246. Validated Cost Data: Cost data which are objectively analyzed and documented by the preparing agency and independently examined and certified to meet validation criteria prescribed by HQ AMC.

247. Variable Cost: A cost that changes with the rate of production of goods or the performance of services. As distinguished from "fixed" costs (which do not change with the rate of production or performance), and "semi-variable" costs (which are neither entirely fixed nor variable).

248. Weapon System Cost Analysis: An analysis of resource requirements for past, present, and future systems to obtain the costs of research and development, investment, and operation. Proposed weapon systems can be costed and compared to other proposed or existing systems to assist the decision maker in selecting the most appropriate system.

249. Weapon System Unique Index: An inflation index which tracks the cost of a single weapon system over time. The rules and procedures prescribed for construction of such indices are listed in Army Regulation 37-63 entitled the Standard Army Inflation Methodology (SAIM).

250. Wholesale Price Index (WPI): Now called the Producer Price Index (PPI). A price index developed by the Bureau of Labor Statistics (BLS) which tracks goods and commodities at the wholesale level.

251. Weapon/Support Systems: A combination of components which function together as an entity to accomplish a given objective. It includes the hardware itself, and all items required for the direct operation and maintenance of the system such as facilities, personnel, data, test diagnostic equipment, and training equipment. The system includes all aircraft, electronic, missile,

ordnance, surface vehicle, and ship systems used or projected for use in the Army force structure.

252. Work Breakdown Structure (WBS): A description of the work to be performed, structured by the distinctive components or items required to produce the system, and the categories of other work elements or materiel needed (such as Data, Test, Support Equipment, Initial Space, etc.). Development of the Baseline Cost Estimate and the establishment of cost parameters require early definition of a WBS, and the use of this as the single WBS throughout the life of the project for estimating, reporting, and managerial purposes.

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