Defense Fundamentals
of
Incentive Contracting

Office

Assistant Secretary of the Navy
Research, Development and Acquisition

Current Through
FAC 90-5
DAC 88-18

PLEASE PRINT CLEARLY AND COMPLETE THE ENTIRE FORM

COURSE EVALUATION SHEET

Course Title: ______________________________

Location: ______________________________

Course Dates: ______________________________

A. General: What is your overall evaluation of this course?

Excellent _____ Good _____ Satisfactory _____ Poor _____ Unsatisfactory _____

B. Course Materials:

1. How do you rate the text?

Excellent _____ Good _____ Satisfactory _____ Poor _____ Unsatisfactory _____

2. How do you rate the case materials?

Excellent _____ Good _____ Satisfactory _____ Poor _____ Unsatisfactory _____

Comments: ______________________________

____

C. Instruction: How do you rate the course instructor?

Excellent _____ Good _____ Satisfactory _____ Poor _____ Unsatisfactory _____

Comments: ______________________________

____

D. Usefulness: Of what benefit was this course to you?

Very Great _____ Great _____ Medium _____ Little _____ None _____

E. General Comments (if any): ______________________________

____

____
Your Signature and Rank or Grade, If You Wish

Defense Fundamentals of Incentive Contracting

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Three	Chapter E; Award Fee Contracts Practical Exercises	E36-E47 Chapter F Appendix D
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CHAPTER A

INTRODUCTION TO THE COURSE

Learning Objective A-1:

Comprehend the Purpose of This Training Course

Learning Objective A-2:

Conceptualize the Importance and Relevance of the Incentive Contract

Chapter A - Introduction to the Course

Learning Objective A-1

Comprehend the Purpose of This Training Course

Purpose and Coverage

This course is an introduction to the application and use of incentive contracts in DOD contracting. It has been designed for anyone with a role in the acquisition of supplies and services for the DOD who needs a general knowledge of the:

- Nature of the incentive contract;
- Types of incentive contracts;
- Contracting circumstances which make incentive contracts appropriate;
- Basic regulations which govern the use of incentive contracts;
- Structure of incentive contracts;
- Adjustment provisions for incentive contracts;
- Specific provisions that govern the administration of incentive contracts.

This course introduces the multifaceted objectives of incentive contracting and the strengths and weaknesses of current incentive contracting approaches. This course also establishes a capability to properly evaluate the ramifications of risk and uncertainty under a specific procurement circumstance in order to structure a contract that should result in more effective contractor management of its effort toward achieving cost, performance, and schedule expectations. The course provides comprehensive coverage of incentive contracting problems and choices facing contracting and technical personnel in program/project management.

It includes a comprehensive treatment of relevant Government policies and guidelines as they apply to meeting incentive contracting objectives. Graphic analysis is used to describe cost/profit (fee)/price relationships, share-ratio diagramming, the determination of a fee/profit swing and the "objectivity" of sharing formula outputs of cost-only incentive contracts. Subjective incentives of the award fee contract are explored, and additional, but limited, techniques are covered for structuring the multiple-incentive contract.

Finally, this course focuses on post-award contract management problems, including funding, payment and audit requirements inherent in incentive contract clauses, as well as understanding "equitable adjustment" approaches brought about when contract changes are implemented.

Instructional Methods

Because of the nature of the Incentive Contracting course, the student must bear a substantial degree of responsibility for bringing him/herself, if necessary, up to a level of reasonable understanding of basic **terminology** and fundamental DOD policy on types of contracts. To this end, the course emphasizes reading assignments from the Appendices of this text.

Lecture/demonstrations/discussions are used extensively for subject orientation early in the course. Every attempt is made to reflect "real world" applications of incentive contracting. Nonetheless, broad economic implications of incentive contract concepts and formulations are addressed.

Practical Exercises, in which the student works independently to solve specific technique-oriented problems, are used to reinforce what was learned from the lecture/discussions and reading assignments. These exercises and their discussion constitute a major segment of the student workload and account for about 25 percent of the classroom time.

Case studies are used to explore major problem areas in which several alternative courses of action may be considered. The case studies tend to deal less with the mechanics of structuring than with broader decision-making or decision-oriented acquisition objectives. The students work in small groups and must report their results through a spokesman to the class as a whole and defend their conclusions.

The last instructional technique is the administration of one comprehensive objective examination for the purpose of supplementing instructor data on student progress and to further reinforce the subject matter by discussing the correct answers immediately after students have completed the examination.

Learning Objective A-2

Conceptualize the Importance and Relevance of the Incentive Contract

Introduction

The Contract Tool-Kit

The enormous scale and complexity of the Department of Defense's (DOD) technical requirements/needs and contracting processes have stimulated the development of various types of contracts. Several of them offer greater flexibility than traditional fixed-price type contracts. All of them are without the defects of the prohibited cost-plus-a-percentage-of-cost contract, under which there is an implied incentive to spend dollars continuously, since the more the contractor spends, the greater the profit it receives.

The complexity, volume and value of DOD contracting have resulted in the development of various types of contracts. Consequently, DOD contracting personnel are currently authorized to use a wide variety of contract types in procuring the myriad supplies and services required to execute our national defense programs. The increase in the number of contract types available for use has resulted in one of the most challenging efforts confronting DOD contracting personnel --- **that of selecting the proper type of contract for the various requirements DOD acquires.**

A single type of contract that provides for every situation would be impossible to draft and difficult to use. Consequently, different types have been devised to offer a range of alternatives from which selections can be made to satisfy a great variety of needs or achieve a variety of objectives.

The fact that there may be several types to choose from in satisfying a need or achieving an objective does not assure that the one selected will result in the optimal business arrangement.

While the availability of a variety of contract types enhances the possibility of favorable results, ultimate success depends more on the **skill** with which the contract is negotiated and administered by the parties than on the particular type of contract employed.

It is deceptive to think of any type of contract, no matter how ingenious it may seem, as automatically assuring a good business arrangement.

Types of contracts are a set of tools that a DOD contract specialist may use; they are not a substitute for good negotiation. In large measure, selection depends first on close and continuous cooperation among procurement, legal, program or project and requirements personnel; second, on developing and drafting its provisions in light of performance requirements; and third, on making the best use of it in motivating contractor performance to do the job.

The Two Major Family Groups (FAR 16.101 (b))

According to FAR 16.101(a), contract types vary according to (1) the degree and timing of the responsibility assumed by the contractor for the costs of performance and (2) the amount and nature of the profit incentive offered to the contractor for achieving or exceeding specified standards or goals. To grasp the meaning of this reference, the text will explore different connotations associated with the term "type of contract."

In one sense, it signifies different compensation arrangements, of which there are many. For instance, firm-fixed-price contracts, fixed-price incentive contracts, cost-plus-fixed-fee contracts, cost-plus-award-fee contracts are examples of different types of contracts. Expressed as compensation arrangements, most types of contracts fall into one of two major family groups: cost reimbursement or fixed price.

Differences in Structure and Form

In another sense, the term "type of contract" is used, regardless of the compensation arrangement, to signify differences in **structure and form.** Letter contracts, purchase orders, and indefinite delivery contracts are examples of different **structures.** Completion-type and term-type contracts represent different **forms.**

Contract Types Signify an Intended End-Purpose

Finally, the term "type of contract" is used to signify an **intended end-purpose**, regardless of the compensation arrangement or the structure and form of the contract. In this sense, research contracts, supply contracts, construction contracts, and operating and onsite service contracts constitute different end-purposes.

While it is important to understand the different connotations associated with the term "type of contract," it is equally important to understand they are **not mutually exclusive.** Indeed, every contract, whether large or small, represents a **synthesis** of **compensation arrangement, structure and form, and end-purpose.**

Summary

Contracts Can Be Grouped As:

- **Members of Two Families**
- **Structure and Form**
- **End-Purpose**

The Most Commonly Used Types of Contracts

The following are the basic types of contracts available for use in DOD procurement:

- Firm-Fixed-Price (FFP)
- Fixed-Price-Incentive (FPI)
- Cost-Plus-Incentive-Fee (CPIF)
- Cost-Plus-Award-Fee (CPAF)
- Cost-Plus-Fixed-Fee (CPFF)

The Fixed Price Contract

The principal characteristic of any fixed-price type contract is that there is a legal obligation to deliver something -- hardware, a report, or a service -- no matter what the actual cost of performance may be. If the cost of performance is greater than the contract price, the contractor suffers a loss. Theoretically, at least, the loss may grow larger and larger as the contractor strives to deliver what it has contracted to do. If the cost of performance is less than the contract price, the contractor benefits through increased profit. If the contractor fails to deliver, it will be paid nothing for the effort made. Indeed, in its usual form, a fixed-price type contract with a commercial source gives the Government the right, in the event of termination for default, to procure from another source and to collect from the defaulted contractor any added costs for doing so.

The Cost-Reimbursement Contract

The principal characteristic of any cost-reimbursement type contract is that there is a legal obligation to work at performance, but only if the Government provides reimbursement for the costs incurred in performing. If the Government stops funding performance, the contractor has no further obligation, and there is no liability for costs that may be incurred by the Government in procuring from another source. Cost-reimbursement type contracts are frequently referred to as "best efforts" contracts. That is, so long as the contractor is providing its "best efforts" to perform, then the Government is obligated to reimburse it for incurred costs under the terms and conditions of the contract as long as funds exist.

The types of contracts identified on the preceding page are in order of decreasing contractor responsibility for the cost of performance. At the top is the **FFP** contract, under which the parties agree that the contractor assumes full responsibility in the form of profits or losses for all costs under or over the firm fixed price. At the bottom of the list is the **CPFF** contract, where the fee, rather than the price, is fixed and contractor cost responsibility is minimal, if not non-existent. In between are **incentive contracts** (FPI, CPIF, CPAF) that provide for varying degrees of contractor cost responsibility, depending on the degree of complexity and uncertainty involved in performance requirements.

CHAPTER B

THE INCENTIVE CONTRACT

Learning Objective B-1:

Describe the Incentive Contract

Learning Objective B-2:

Comprehend the Objective Incentive

Learning Objective B-3:

Comprehend the Subjective Incentive

Chapter B - The Incentive Contract

Learning Objective B-1

Describe the Incentive Contract

Introduction

This chapter describes the nature of the incentive contract as it applies to the DOD contracting process.

Incentive contracts are used when an FFP or a CPFF type contract is inappropriate. They provide a middle alternative that imposes some performance risk on the contractor without requiring a full assumption of that risk by the contractor. Incentive contracts are designed to encourage contractors to improve contract performance in the areas of cost, technical quality and the delivery schedule by harnessing the profit motive. Consequently, incentive contracts provide contractors with a dollar incentive to reduce costs, improve end-item performance and/or accelerate delivery.

FAR Guidance at 16.401 (a)

FAR 16.401(a) contains the following guidance on this contract form:

> (a) Incentive contracts as described in this subpart are appropriate when a firm-fixed-price contract is not appropriate and the required supplies or services can be acquired at lower costs and, in certain instances, with improved delivery or technical performance, by relating the amount of profit or fee payable under the contract to the contractor's performance. Incentive contracts are designed to obtain specific acquisition objectives by --

(1) Establishing reasonable and attainable targets that are clearly communicated to the contractor; and

(2) Including appropriate incentive arrangements designed to (i) motivate contractor efforts that might not otherwise be emphasized and (ii) discourage contractor inefficiency and waste.

Types of Incentive Contracts

There are two distinct types of contract incentives. The **objective incentive** describes a relationship where parties include a predetermined formula(s) in the contract to determine the profit or fee earned by the contractor based on the actual performance results achieved. The **subjective incentive** describes a relationship where the parties agree that the profit or fee earned on the contract will be determined by the Government based on an appraisal of the contractor's performance. These two types of incentives are translatable into specific types of incentive contracts belonging to the family of contract types. Three **objective incentive contracts** are the **cost-plus-incentive-fee** (CPIF) contract, the **fixed-price-incentive** (FPI) contract, and the **multiple-incentive** of the CPI or FPI type. Two **subjective incentive contracts** are the **cost-plus-award-fee** (CPAF) contract and the **fixed-price-award-fee (FPAF)** contract (although the latter is not a specific contract type cited in the (FAR 16).

Requirements of the Objective Incentive

Objective or formula incentive contracts can employ a cost-only incentive, or a combination of cost and performance incentives. Performance incentives on technical performance and time may be included at the discretion of the contracting activity. In all cases, however, contracts **must** include an incentive on the **cost of performance** as described in FAR 16.402-1(a). An expanded discussion on the objective incentive follows. Although the multiple incentive contract is introduced in this chapter, an expanded discussion on incentive combinations is found in Chapter E.

The Essence of Incentive Contracting

While survival may very well be the essence of a firm's existence, the profit motive is the **essence** of incentive contracting strategy. Incentive contracts utilize the drive for financial gain under risk conditions by rewarding the contractor through increased profit or fee for attaining cost (and sometimes performance and schedule) levels more beneficial for the Government than expected and by penalizing the contractor through reduced profit or fee for less-than-expected levels. In stressing the profit-making aspects of a company's existence, however, there is no intention to discount the importance of extracontractual incentives, such as gaining future business or maintaining specific engineering capabilities.

Learning Objective B-2

Comprehend the Objective Incentive

The Objective Incentive

The objective incentive, as described in Chapter A, is an incentive contract where the final profit or fee is determined by the application of a **negotiated predetermined formula, a mathematical calculation.** Contractor performance requirements are such that **specific quantitative or objective measurements of performance** are totally feasible and appropriate. For example, as extracted from FAR 16.402:

- Cost Incentives
- Technical Performance Incentives
- Delivery Incentives
- Multiple Incentives

Cost Incentive (FAR 16.402-1)

The cost incentive takes the form of a profit or fee adjustment formula. Application of this formula is intended to **motivate** the contractor to effectively manage costs. As previously noted, no incentive contract may provide for other incentives without also providing for a cost incentive.

The reward and penalty aspects of the cost-only incentive contract is expressed as a **percentage ratio.** (The percentage ratio is a ratio of two whole numbers -- decimals are acceptable but usually limited to one position to the right of the decimal point -- and the percentage symbol (%) is absent.) A 60/40 ratio means the Government pays 60 cents, and the contractor is responsible for 40 cents of every dollar of cost above the target cost of the contract. It follows that for every dollar of cost under the target cost, the Government saves 60 cents and the contractor earns an additional 40 cents, over and above the target profit or fee. **The precise dollar amount of this adjustment is determined by this formula after the contract is completed.**

Technical Performance Incentive (FAR 16.402-2)

The technical performance incentive is aimed at specific product characteristics of the contractor's performance. It is designed to tailor profit or fee to **results achieved** by the contractor **compared with specified target goals.**

Incentives on individual technical characteristics must be balanced so that no one characteristic is exaggerated to the detriment of the overall performance of the end item. They are used only when the Government desires improvements in product performance. These improvements must be based on the **worth** of **equivalent dollar savings.**

Delivery Incentive (FAR 16.402-3)

Delivery incentives are important when improvement from a **required delivery schedule** is a significant Government objective.

Multiple-Incentive (FAR 16.402-4)

In a multiple-incentive contract, profit or fee may be increased or decreased through objective measurements depending of the success or failure of the contractor in meeting goals above or below preestablished targets. The multiple incentive contract identifies alternative levels of performance and relates the value of these performance alternatives as affected by interrelationships between cost, technical, and schedule decisions.

Learning Objective B-3

Comprehend the Subjective Incentive

The Subjective Incentive

The subjective incentive, as described in Chapter A, is an incentive arrangement where the **final profit or fee is determined by the Government's appraisal of the contractor's performance.** Contrary to the objective incentive, the subjective incentive is appropriate when objective measurement of contractor performance is neither feasible nor appropriate.

This incentive is appropriate when the achievement of performance objectives will be enhanced by a negotiated arrangement that provides for fee rewards as the contractor demonstrates exceptional performance. This type of incentive introduces the flexibility for the Government to evaluate both actual performance levels **and** the conditions under which such levels were achieved. Accordingly, this incentive provides that the contractor's earned fee will be determined subjectively by designated Government personnel on the basis of **periodic,**

after-the-fact evaluations of the contractor's performance. Where outputs of contractor performance can be objectively quantified with outcomes specified in advance, the subjective incentive is clearly inappropriate.

CHAPTER C

USING INCENTIVE CONTRACTS

Learning Objective C-1

Identify the Goals of Incentive Contracts

Learning Objective C-2

Identify the Conditions that Restrict Selection of an Incentive Contract

Chapter C - Using Incentive Contracts

Learning Objective C-1

Identify the Goals of Incentive Contracts

Introduction

This chapter first describes the objectives sought to be attained by the incentive contract. It also describes the limitations that restrict selection and the documentation requirements to support selection. Finally, this chapter describes the contracting situations which make each type of incentive contract appropriate.

FAR Guidance at 16.401 (a)

As has been previously discussed, there are several types of incentive contracts, ranging from those that are based on cost incentives only to those that are based on a composite of cost, schedule and technical performance considerations. In order to develop a better understanding of the circumstances which restrict the selection of one type of incentive contract over another, it is important to know what goals incentive contracts seek to attain. They are:

- To provide an accurate expression of DOD requirements by conveying performance expectations and the basis on which effort and activity will be assessed, evaluated and determined.

The contractual document must clearly and completely **describe the operational basis** for the incentive through a system of clauses and special provisions. This becomes increasingly more difficult for the incentive contract which embodies the subjective incentive.

- To emphasize reward-based incentives where rewards are contingent on performance.

The operation of any incentive provision must be based on **contractor performance** as measured by the objective or subjective incentive provisions described in the contract.

- To recognize the diversity of real-world motivations encountered during the performance period.

The profit motive is the essence of incentive contracting. Incentive contracts utilize the **drive for financial gain under risk conditions** by rewarding the contractor through increased profit for attaining performance levels more beneficial for the Government than expected. The contractor must be free to manage its effort and activity toward its goals.

- To cultivate communication and feedback of information among DOD and contractor personnel.

The contractor must be **made aware** of the Government's position regarding **performance decisions.** Under the objective incentive, feedback is the terminal action which communicates the mathematical calculation that quantifies the reward and/or penalty decision. For the subjective incentive where improvement is conditioned on contractor reaction to areas susceptible to improvement, Government feedback must be timely and complete to foster contractor reaction and action.

Learning Objective C-2

Identify the Conditions that Restrict the Selection of an Incentive Contract

What Conditions Restrict Selection?

An incentive-type contract may only be used, according to FAR 16.403(c) and FAR 16.301-3(c), only when a determination and findings (D & F) have been executed showing that:

- This contract type is likely to be less costly than any other type, or

- It is impractical to obtain supplies or services of the kind or quality required without the use of this contract type.

Consequently, this D & F must conclude, without a doubt, that the provisions of FAR 16.401 are met.

DOD Format for the D&F (DFARS 216.102)

Set forth on the following page is a format for the D & Fs to be made by the contracting officer with respect to the use of a cost, cost-plus-fixed-fee, or incentive type contract. The format may be modified as appropriate.

[Military Department or Agency]
Determination and Findings
Authority to Use a __(1)__ Contract

Upon the basis of the following findings and determination which I hereby make pursuant to the authority of 10 U.S.C. 2306(c), the proposed contract described below may be entered into on a __(1)__ basis.

Findings

1. The __(2)__ proposes to enter into a __(1)__ contract for the acquisition of (3) at an estimated cost of $ __(4)__.

2. The work to be performed is __(5)__.

Determination

1. It is impracticable to secure services of the kind of quality required without the use of the proposed type of contract. (6)

(Alt: The use of the proposed type of contract is likely to be less costly than other methods.) (6)

(Alt: It is impracticable to secure services of the kind or quality required with the use of the proposed type of contract and the use of such type of contract is likely to be less costly than any other method.) (6)

2. The estimated cost of the proposed contract is $__(4)__. (7)

Date ____________________ ____________________

NOTES:
- (1) Enter type of contract to be used, i.e. fixed-price incentive, cost-plus-incentive-fee, cost, or cost-plus-fixed-fee.
- (2) Contracting activity.
- (3) Brief description of supplies or services.
- (4) Enter amount to nearest thousand.
- (5) Describe the nature of the work to be performed and set forth the facts (for the type of contract proposed, see FAR Part 16) that show why it is impracticable to secure supplies or services of the kind or quality required without the use of such type of contract, or that such method of contracting is likely to be less costly than other methods.

CHAPTER D

TYPES OF INCENTIVE CONTRACTS

Learning Objective D-1:

Distinguish Among the Types of Incentive Contracts

Learning Objective D-2:

Select the Most Appropriate Incentive Contract Given Specific Circumstances

Chapter D - Types of Incentive Contracts

Types of Incentive Contract

This chapter describes the following types of incentive contracts and discusses the acquisition situations which make each of them most appropriate. They are:

- Fixed-Price Incentive (FPI)
- Fixed-Price-Award-Fee (FPAF)
- Cost-Plus-Incentive-Fee (CPIF)
- Cost-Plus-Award-Fee (CPAF)
- Multiple Incentive Contract

The Fixed-Price-Incentive (FPI) Contract

The FPI contract is a fixed-price contract that provides for adjusting target profit and establishing the final contract price by a formula based on the relationship of final negotiated total cost to total target cost. The two types of fixed-price-incentive contracts are the firm target (FPIF) and the successive target (FPIS). Of the two, the firm target is preferred whenever its use is practicable.

When Is the FPI Contract Appropriate?

The FPI contract is appropriate when:

- A firm-fixed-price contract is not suitable;

- The nature of the supplies or services being acquired and other circumstances of the acquisition are such that the contractor's assumption of a degree of the cost responsibility will provide a positive profit incentive for effective cost control and performance.

The FPI type contract is used in lieu of an FFP contract in situations where the assumption of technical risk and cost uncertainty by the contractor is too great for use of the FFP. But since the uncertainties are foreseeable and can be reasonably estimated and evaluated, the use of a cost reimbursement contract is not fully justified.

FPI contracts are ideal for requirements with relatively firm design specifications or performance features so the contractor can perform without detailed and continual technical direction from the Government. Accepting a contract with these performance features provides a positive profit incentive for effective cost control if the contractor is willing to assume **a degree of cost responsibility** for contract placement.

The FPI contract is a **completion** type of contract. The contractor guarantees on-schedule delivery of a product meeting the specification requirements. If the contractor cannot meet the requirements at a cost below the ceiling price, the work must be continued at the contractor's own expense. The Government may not pay more than the ceiling price or increase the ceiling because of the contractor's cost experience. Failure makes the contract subject to default and reprocurement costs.

There are two types of FPI contracts: the fixed-price incentive - firm target (FPIF) and the fixed-price incentive - successive targets (FPIS).

When is the FPIF Contract Appropriate?

The FPIF contract is appropriate for use when technical and cost uncertainties are too great for the use of an FFP contract, but the uncertainties can be identified and quantified so that a reasonable target cost and a price ceiling can be established with confidence that the latter will not be breached. According to FAR 16.403-1(b), an FPIF contract is appropriate when:

- The parties can negotiate a firm target cost, target profit and profit adjustment formula;

- These elements provide a fair and reasonable incentive;
- A price ceiling provides for the contractor to assume an appropriate share of the financial risk.

The FPIF is a completion form contract, and the contractor is required to perform regardless of the final cost outcome. Thus the contractor is required to continue performance even when the costs exceed the price ceiling, and all costs in excess of the price ceiling are at the contractor's own expense. This being the case, it is critical that the price ceiling represent a figure that the contractor is not expected to reach.

Under the FPIF contract, the contractor should attempt to reduce costs, make a better product or expedite performance, since the cost savings generated by the contractor are shared with the Government. The contractor can thereby realize a greater profit for improved performance.

The FPIF contract is used, for example, in the weapons systems production environment where the initial design has been fairly stabilized and the performance period is long enough to achieve substantial cost reductions through repetitive contractor operations that respond favorably to the learning curve theory. This theory simply argues that savings (less time to perform) materialize under situations where the contractor performs repetitive sequential operation on a non-interrupted basis.

Basic Elements of the FPIF Contract (FAR 16.403-1)

An FPIF contract specifies a target cost, a target profit, a price ceiling and a profit adjustment formula (FAR 16.403-1). These elements are all negotiated at the outset. The price ceiling is the maximum that may be paid to the contractor, except for adjustments to these elements that are required by change, funding, options or other such clauses. When the contractor completes performance, the parties **negotiate** the final cost. The final price is **established** by applying the profit adjustment formula. When the final cost is less than the target cost, application of the formula results in a final profit greater than target profit; conversely, when final cost is MORE ~~less~~ than the target cost, application of the formula results in a final profit less than the target profit, or even a net loss. If the final negotiated cost exceeds the price ceiling, the contractor absorbs the difference as a loss. **Because the profit varies inversely with the cost, the FPIF contract provides a positive, calculable profit incentive for the contractor to control costs.**

1. Target Cost

The initial establishment of the target cost objective is based on the Government's analysis of the contractor's proposal as compared to the Government's own cost estimate. The contractual target cost is, of course, the result of negotiation.

2. Target Profit

The target profit generally results from non-competitive (negotiation after selection) but it can result from a competitive negotiation solicitation strategy. When selection precedes negotiation, the Government's prenegotiation goal for target profit is developed through cost analysis of the contractor's proposal and the application of DOD weighted guidelines. Since the contractor assumes more cost risk in the FPIF contract than the CPIF contract, the target profit for the FPIF contract is greater than the target fee for the CPIF contract when expressed as a percentage of target cost.

3. Profit Adjustment Formula

The profit adjustment formula, cost sharing ratio or share line describe how the Government and the contractor will share in the actual cost associated with contractor performance. This "formula" describes what portion of the fee adjustment will be borne by the Government and what portion will be borne by the contractor. Both portions add up to 100% and thus the concept "sharing of cost risk" evolves. Since the contractor is expected to assume more of the "cost risk" in the FPIF type contract than the CPIF contract, the contractor's numerical share is usually larger in the FPI-F contract.

4. Ceiling Price

The ceiling price is the maximum amount the Government will pay, regardless of the contractor's actual cost experience. This is a price figure, cost plus profit. In order for the contractor to make any profit, the contractor must keep costs below the ceiling price. In practice, the ceiling price is expressed as a percent of target cost, but the Government has not established any guidelines on what this percent should be.

When is the FPIS Contract Appropriate?

FPIS contracts are appropriate in situations where available cost and pricing information is not sufficient to establish an FPI-F contract initially but it is possible to establish initial targets to permit conversion, commonly called "firm-up," to a FFP or FPIF arrangement as performance data becomes available. The FPIS contract is typically used in situations involving procurement of the first production of a newly developed item. Long lead time requirements may make it necessary to contract for a follow-on quantity before design or production stability has been achieved, although DOD acquisition policies may dictate restrictions for follow-on buys. When the FPIS contract is used, cost or pricing data adequate for the establishment of a firm target arrangement is expected at a point relatively early in performance of the follow-on contract. The FPIS establishes an overall ceiling price and gives the contractor some degree of cost responsibility and profit incentive in the interval before a realistic firm arrangement can be negotiated.

Basic Elements of the FPIS Contract (FAR 16.403-2)

The FPIS contract specifies a ceiling price, initial target cost, initial target profit, initial target price, initial share formula and a ceiling and floor on firm target profit. With the exception of the price ceiling, the elements of the FPIS contract are used to determine the firm target profit at the time of firm-up. In addition to these elements, the FPIS contract also specifies the point in time when the parties will meet to negotiate an FFP or, failing that, an FPIF contract.

1. **Production Point**

This is a mutually agreed upon time (usually before completion of the first item) when the contractor will have gained sufficient cost experience to project the remaining costs and negotiate a final agreement.

2. **Initial Target Cost, Initial Target Profit, and Initial Profit Adjustment Formula**

Once the period of time to the production point is identified, an initial sharing arrangement is negotiated to cover this period and to form the basis for the negotiation and definitization of a final arrangement. The initial sharing arrangement is then superseded by the final arrangement. As described in DFARS 216.403-2, the formula does not apply for the life of the contract but simply is used to fix the firm target profit for the contract.

3. **Firm Target Profit Ceiling and Floor**

The firm target profit ceiling and floor are guarantees to the contractor that the calculations for the final contractual arrangement will carry a profit figure within the firm target profit ceiling/floor. This does not guarantee that the contractor will earn such a profit on the final contract, but it does guarantee the opportunity to earn a profit within the ceiling/floor range.

4. **Ceiling Price**

The ceiling price is established initially to apply to the entire arrangement. The ceiling price may be lowered, but cannot be increased during the negotiations of the final agreement.

At the production point, the contractor must submit a new proposal pricing the entire arrangement based on incurred costs and estimated cost to complete. The objective is to negotiate either an FFP or FPIF contract. The new cost is compared to the initial target cost, and the initial share formula is applied to determine the profit which must fall between the firm target profit ceiling and floor. The final results may not exceed the ceiling price.

The Fixed-Price-Award-Fee (FPAF) Contract

The FPAF contract is an FFP contract (FAR 16.102(b)) where the contractor can earn an award fee over and above the negotiated fixed price. The contractor will be paid the negotiated fixed price and whatever portion of the award fee amount the Government subjectively determines through the evaluation plan **regardless** of what the final cost outcome of the contract.

When is the FPAF Contract Appropriate?

In certain cases, as set forth in DFARS 216.404-2, it may be desirable to motivate and reward a contractor for management performance over and above that which can be objectively measured and incentivised under other arrangements. For example, logistics support, quality, timeliness, cooperation, ingenuity and cost effectiveness are areas under the control of management which may be susceptible only to **subjective** measurement and evaluation. In such cases, the award fee is an ideal method for incorporation of these additional incentives into government contracts.

When approved by the Chief of the Contracting Office as described in DFARS 216.404-2(S-70), the award amount of the CPAF contract may be used in conjunction with other kinds of contracts for Government benefit.

Basic Elements of the FPAF Contract

The FPAF contract specifies a price (cost plus profit) and an award fee which together make up the firm-fixed-price. It also contain an award fee evaluation plan which consists of the evaluation team, the award fee pool amount, evaluation criteria, grading table and a fee conversion table that translates the contractor's overall score into the amount of award fee it will earn.

The Cost-Plus-Incentive-Fee (CPIF) Contract

The CPIF contract is a cost-reimbursement type contract with special fee features which allow the fee to vary, within a stated range, for actual cost performance measured in accordance with an agreed upon formula.

The CPIF contract is used in preference to the CPFF contract (greater assumption of cost risk by the contractor), yet there are a number of similarities between the two contract types. The estimated cost of the CPFF contract and the target cost of the CPIF contract are the same. While Federal statute limits fee levels (expressed as a percentage of estimated cost) for the CPFF contract, regulatory limits have been imposed on the CPIF contract but only at the maximum fee.

When is the CPIF Contract Appropriate?

The CPIF contract is appropriate for development and test programs when objective incentives can be negotiated that are likely to motivate the contractor to manage effectively and with increased efficiency.

Basic Elements of the CPIF Contract

1. Target Cost

The initial establishment of the target cost objective is based on the Government's analysis of the contractor's cost proposal as compared to the Government's cost estimate. The contractual target cost is the result of negotiation.

Target cost should represent that point in the range of possible costs which both parties agree is "most probable." While target cost should represent a 50-50 probability of occurring, this should not be interpreted to mean an equal magnitude of variance from target cost.

The main functions of target cost are:

(1) To provide a goal for both the contractor's and Government's internal management;

(2) To provide a basis for the obligation of funds and contractor billing during contract performance; and

(3) To calculate final fee using the fee adjustment formula once actual allowable costs are determined.

2. Target Fee

Target fee results from negotiation and represents the reward for performance at target cost. The Government's prenegotiation goal for target fee may be developed through cost analysis of the contractor's proposal and the application of DOD weighted guidelines or the direct results of competition.

3. Fee Adjustment Formula

The fee adjustment formula, cost sharing ratio or share line functions identically as the profit adjustment formula in the FPI contract. It describes how the Government and the contractor will share in cost deviations as measured against target cost. It is expressed as a ratio of two numbers (60/40): the number to the left (60) is always the Government's share, and the number to the right (40), the contractor's share. The total of both must be 100 or 100 percent.

An 80/20 ratio means that for every $1 the contractor saves, or underruns in actual costs, the contractor's target fee will be increased by $0.20. And, for every $1 in actual costs that the contractor exceeds target cost (overruns), the contractor's target fee will be decreased by $0.20. Thus, if the contractor's actual costs were $10,000 less than the target cost, target fee would be increased by $2,000. If the contractor's actual costs were $10,000 more than target cost, the target fee would be decreased by $2,000.

4. Minimum Fee

The minimum fee is that fee determined to be reasonable for acceptably performing at the most pessimistic cost outcome or high cost estimate. The minimum fee may be zero or even a negative. DOD weighted guidelines may be used to establish this fee; however, current regulations offer no specific guidance as to what the reward value should be for performing at this cost. If it is determined that the contractor would get to the high cost estimate **only** through inefficiency and poor cost control, then a zero or negative minimum fee might be appropriate.

If technical uncertainty is high and it is possible that resolution of these uncertainties could cause a cost growth, a zero or negative figure would not be appropriate. The combination of the high cost estimate and the minimum fee represents an acceptable, though not desirable, level of performance.

The contractual minimum fee is a negotiated figure. Once the contractor's actual allowable costs reach or exceed the high cost estimate, the minimum fee becomes fixed. The contractor will be assured of collecting at least the minimum fee, no matter what the actual allowable costs are, given the Government is willing to finance contractor performance through conclusion.

Thus, at the point where actual allowable cost earns the minimum fee, the CPIF contract behaves like a CPFF contract with the minimum fee acting as a fixed fee on the overrun side.

5. Maximum Fee

The maximum fee is that fee determined to be reasonable for work performed at the most optimistic cost outcome or low cost estimate for acceptable performance. In the CPIF contract, the maximum fee is limited by regulation to 15 percent of the total estimated costs for research and development (R&D) and 10 percent of the total estimated costs for supply or other than R&D service contracts. The maximum fee represents a contractual ceiling on fee. No more than the maximum fee may be paid regardless of the final cost outcome. The combination of low cost estimate and maximum fee should be attainable without a major technological breakthrough. **If such is not attainable, the contractor most likely will not be motivated to perform on the underrun side.**

The maximum fee is a negotiated figure. Once the contractor's actual allowable costs reach or underrun the low cost estimate, the maximum fee becomes fixed. The contractor will collect the maximum fee, no matter how severe the underrun is. Thus, at the point where actual allowable cost earns the maximum fee, the CPIF contract behaves like a CPFF contract with the maximum fee acting as the fixed fee on the underrun side.

The Cost-Plus-Award-Fee (CPAF) Contract

The CPAF contract is a cost-reimbursement incentive type contract with special fee provisions. It provides a means of applying incentives in contracts which are not susceptible to development of firm objectives in cost, technical and management performance.

When is the CPAF Contract Appropriate?

The CPAF contract should not be used to avoid CPFF contracts when the criteria for CPFF contracts apply, nor should a CPAF contract be used in place of an CPIF contract when objective targets are feasible and appropriate. Finally, the CPAF contract should not be used for procurements categorized as either engineering development or operational system development which have already undergone contract definition, except where it may be more advantageous to do so (DFARS 216.402-2(c)).

The CPIF and FPI contracts are designed for use when contractor performance can be objectively measured. In cost-only CPIF and FPI contracts, final fee/profit is objectively determined by application of the fee/profit adjustment formula; in multiple incentive contracts, final outcomes in profit/fee are objectively determined by the application of formulas for cost, schedule and technical standards defined in the contract. The CPAF contract is suitable for use when (FAR 16.404-2):

The Report Card Aspect is Extremely Important in Motivating the Contractor

- The work to be performed is such that it is neither feasible nor effective to devise predetermined objective incentive targets applicable to cost, technical performance or schedule;

- The likelihood of meeting acquisition objectives will be enhanced by using a contract that effectively motivates the contractor toward exceptional performance and provides the Government with the flexibility to evaluate both actual performance and the conditions under which it was achieved;

- Any additional administrative effort and cost required to monitor and evaluate performance are justified by the expected benefits; and

- Level of effort contracts for performance of services where mission feasibility is established but measurement of achievement must be by subjective evaluation rather than objective measurement (DFARS 216.404-2(b)(1)(S-70).

It should be noted that a minimum limit on dollar size of CPAF contracts does not exist. Contracts for less than $100,000 may be placed on a CPAF basis if the contractor is providing critical supporting services or when the significance of performance gains outweigh the additional administrative expense. If the cost of administration of a CPAF contract is in excess of any benefits accruing to the Government, a contract form other then CPAF should be used. For example, the FPAF contract for facility support requirements.

CPAF contracts are particularly appropriate for support services generally associated with research and development activities, maintenance and operations, and mission support activities not suitable for fixed-price contracting.

It is the Government's policy to provide for as much flexibility within the CPAF contract as possible. As contract work progresses, the Government's desire to emphasize certain aspects of the contractor's activity under the contract terms may change. Accordingly, the criteria and the standards for performance are to be structured to allow for changes in desired emphasis within the limits outlined in the contract.

CPAF contracts can be applied in the acquisition of hardware in the R&D phase; however, the widest application is in support services.

Basic Elements of the CPAF Contract

The CPAF contract includes the following:

- An estimated cost;
- A base fee;
- An award fee;
- Award fee plan consisting of the following:
  - Evaluation board;
  - Performance criteria;
  - Weighting scheme for the criteria;
  - Evaluation periods to measure contractor performance;
  - Award fee allocation plan;
  - Evaluation plan.

The Multiple Incentive Contract

Multiple incentive contracting combines the motivation for technological progress, timely delivery, and effective cost control with the ultimate objective of attaining an appropriate balance between performance, schedule, and cost control -- not necessarily the lowest cost. Obviously, in cost-only incentives, the emphasis is on the attainment of the stated performance achievement level at the lowest cost.

To be sound, the concept of multiple incentive contracting must quantitatively relate profit motivation directly with the Government's objectives. Multiple incentives must identify the alternative technical levels of performance and place the relative value on the alternatives as affected by the relationship between cost, performance, and schedule decisions.

When is the Multiple Incentive Contract Appropriate?

Multiple incentives should be negotiated within a structure which gives appropriate weight to acquisition objectives. This includes a balancing of the range of cost and performance goals. The proper balancing of objectives achieves two important results:

(1) It communicates the Government's objectives to the contractor;

(2) **It establishes the contractor's profit in direct relationship to the value of the combined level of performance in all areas.**

The contractor's program and administrative management procedures must provide visibility for trade-offs.

Basic Elements of the Multiple Incentive Contract

All multiple incentive contracts must have a cost incentive. It is the responsibility of the negotiators to establish the cost/performance correlation or cost-equivalent ratio. Procurement personnel should seek assistance from program and technical personnel. For example, under an FPI contract with a performance incentive, for every dollar the contractor spends over target cost, a dollar must be earned of performance incentive profit in order to break even.

A multiple incentive contract with performance aspects interrelated with the range of probable cost is designed to motivate the contractor to achieve or surpass stated performance levels or goals. Multiple incentive features provide for increases in the fee to the extent that performance levels are reached or exceeded, and provide for decreases to the extent that these levels or goals are not met.

It is important that the phrase "balanced incentive structure" is properly understood. A balanced incentive does not mean that half of the incentive fee pool is allocated to rewards and half is allocated to performance, or a 33-1/3 percent allocation to each of the cost, performance and schedule areas. A balanced incentive structure will

(1) Identify alternative technical levels of performance, and the relative fee value for each of the alternatives at various cost positions; and

(2) Communicate the Government's priority for preferred actions.

The fee level for any combination of achievements should be in direct relationship to the Government's value statement for that particular level of overall achievement.

CHAPTER E

STRUCTURING INCENTIVE CONTRACTS

Learning Objective E-1:

Develop Profit/Fee Adjustment Formula

Learning Objective E-2:

Structure Cost-Only Incentive Contracts

Learning Objective E-3:

Generate Graphic Models for the Cost-Only Incentive Contracts

Learning Objective E-4:

Structure the Multiple-Incentive Contract

Learning Objective E-5:

Comprehend the Award Fee Contract

CHAPTER E - Structuring Incentive Contracts

Of the three types of incentives discussed in this text, cost, schedule, and performance, the straight cost incentive has received the widest application. It is also the simplest conceptually: an arrangement is made whereby the contractor's profit, or fee, increases of decreases as the actual incurred costs fall below or above the contract target cost. The arrangement must be written so that it offers the contractor a real incentive to meet or better cost objectives; it must offer the contractor rewards commensurate with the risks assumed; and it must not create a situation in which cost is overemphasized or underemphasized relative to other procurement objectives.

This chapter begins with a discussion and construction of the profit/fee adjustment formula. It follows with sections which provide instruction on structuring the cost-only incentive and the multiple-incentive contracts. The chapter concludes with a discussion of the elements and structure of the award fee plan.

Graphics are useful to effectively develop, negotiate, and administer an incentive contract. Graphics enable the visualization of an incentive arrangement, something that is difficult to do with just numbers.

Learning Objective E-1

Structuring the Profit/Fee Adjustment Formula

The profit/fee adjustment formula (also known as the share formula, share ratio or share line) expresses the Government/contractor **cost** sharing arrangement. The sharing relationship is always expressed as a ratio of two numbers, such as 70/30. They may be whole numbers or they may include decimals; however, when they are expressed as a decimal number, usually only two positions to the right of the decimal point are used.

The first figure or the figure to the left is always the Government's share, and the figure to the right, the contractor's share. The total of both must always be **100.**

The share ratio describes how the Government and the contractor will share the cost risk of contract performance. A 70/30 relationship means that for every \$1 deviation of actual cost as measured against the predetermined target cost, the Government assumes responsibility for \$.70 while the contractor assumes the responsibility for \$.30. Stated differently, the ratio means that for every \$1 the contractor **saves** in actual costs under the target cost, the contractor's target profit or fee will be **increased** by \$.30. And, for every \$1 in actual costs that the contractor **exceeds** target cost, the contractor's target profit or fee will be **decreased** by \$.30.

SAVINGS LEAD TO INCREASED PROFIT OR FEE

COST GROWTH LEADS TO DECREASED PROFIT OR FEE

Thus, if the contractor's actual costs were \$10,000 less than the target cost, target fee or profit would be increased by \$3,000. If the contractor's actual costs were \$10,000 more than target cost, the target profit or fee would be decreased by \$3,000. The student is cautioned that there are constraints that may preclude the contractor from reaping these benefits entirely such as the maximum fee for the cost-only CPIF contract.

An infinite number of share ratios are available for use in incentive contracting. The chart in **Figure E-1** illustrates a few of these, all of which pass through the same target cost (TC) and target fee (TF) for ease of comparison. The term "target profit" may be used interchangeably with "target fee" for purposes of discussion on this topic. Notice that as the contractor share ratio increases from zero, or zero percent to 100, or 100 percent, the line segment becomes steeper and steeper and the contractor shares more and more heavily in any cost growth, or overrun or cost savings, or underrun.

Share Ratios

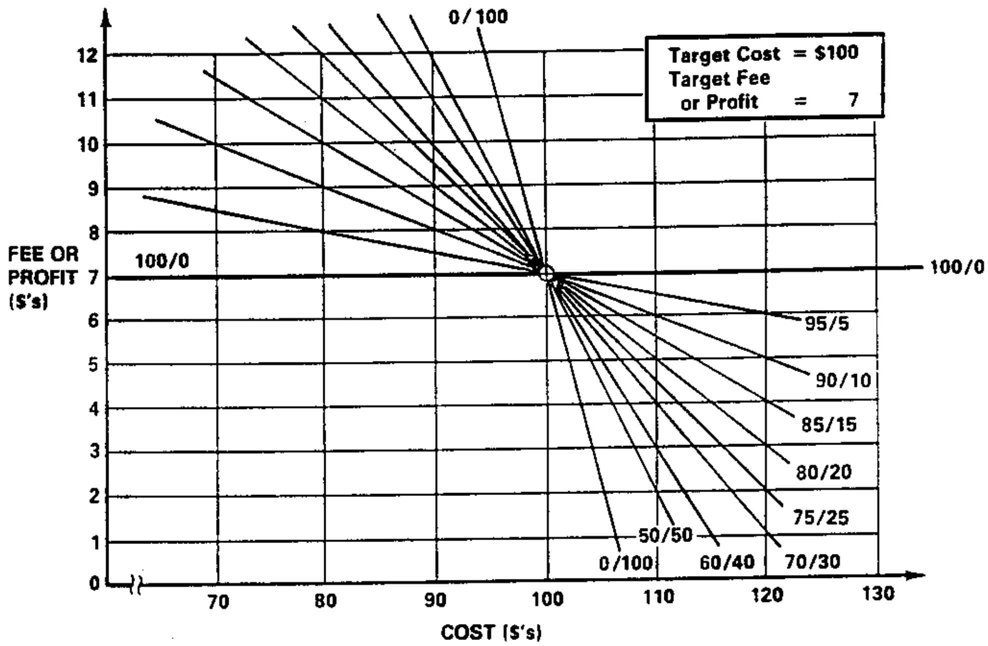

Figure E-1.

Constructing the Formula and Share Line

How do you construct a profit/fee adjustment formula? Suppose the problem is to develop an 80/20 sharing ratio and pass a line segment with this ratio through the intersection of target cost (TC) of $100 and target fee (TF) of $7. Where do you begin?

Step 1. The first step is to locate the intersection of TC and TF. This is accomplished by constructing a vertical line that passes through the TC of $100 and a horizontal line that passes through the TF of $7; the intersection then is marked by a small circle. (See **Figure E-2**).

Constructing a Share Line - Step 1

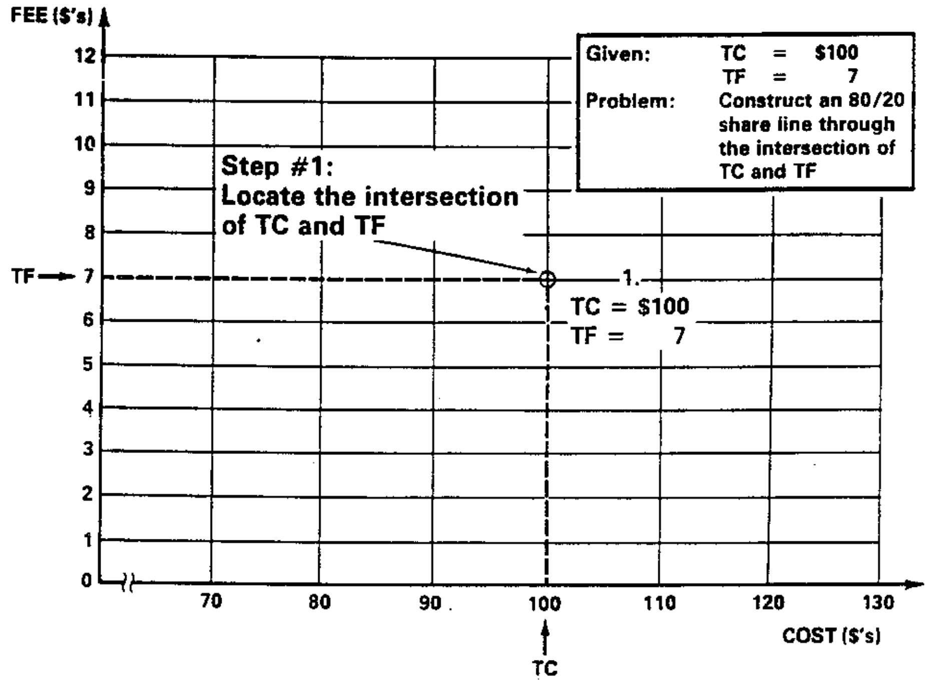

Figure E-2.

Step 2. The next step is to assume a cost outcome other than TC, to determine the fee associated with the assumed cost outcome, and to locate the intersection of the assumed cost and associated fee.

If the assumed cost outcome is $80, what will the corresponding fee be?

A cost outcome of $80 represents a cost underrun of $20 and a contractor cost share of 20 percent, the increase in fee is $4 ($20 x 20 percent). The $4 increase in fee added to the TF of $7 results in a fee of $11 being paid for a cost outcome of $80. To locate this point ($80 cost, $11 fee), draw a vertical line parallel to the fee axis passing through the cost of $80 and a horizontal line parallel to the cost axis passing through the fee of $11; then mark the intersection of these lines with a small circle. (See **Figure E-3.**)

Constructing a Share Line - Step 2

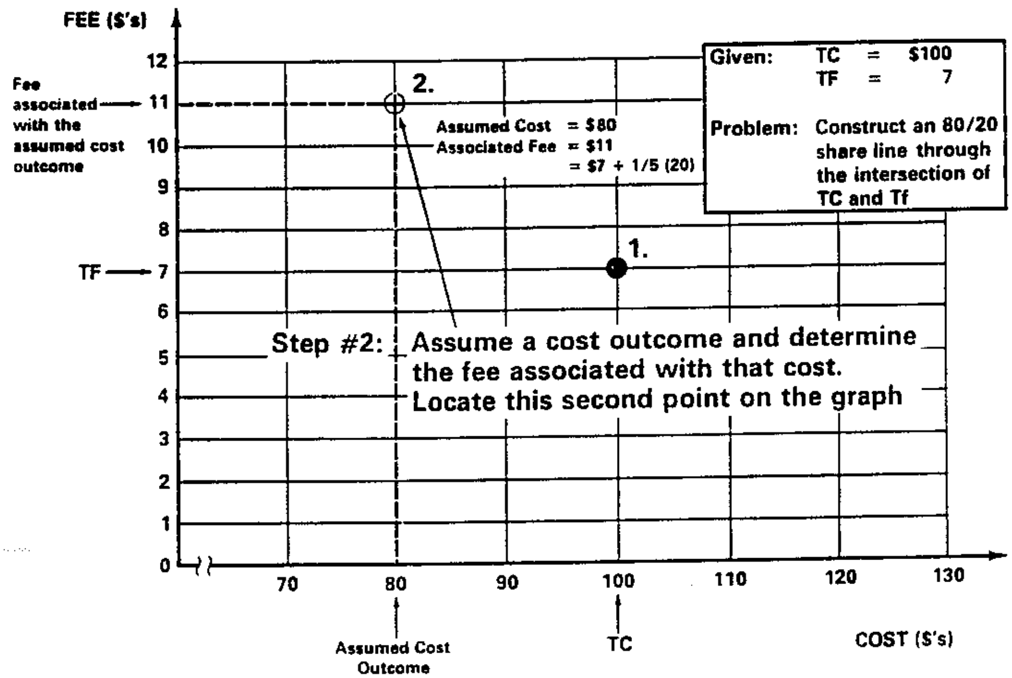

Figure E-3.

Step 3. Construction of the 80/20 formula/share line is completed by connecting the two encircled points with a solid line and extending this line in both the increasing and decreasing fee directions. Note that the second point defining the share line could have been constructed by assuming a cost overrun rather than a cost underrun. The important step to remember is that a cost outcome other than TC **must be assumed** in order to locate the second point on the line. Once two points that lie on a straight line have been found, the line is defined completely by connecting the two points and extending the line to infinity. (See **Figure E-4.**)

Constructing a Share Line - Step 3

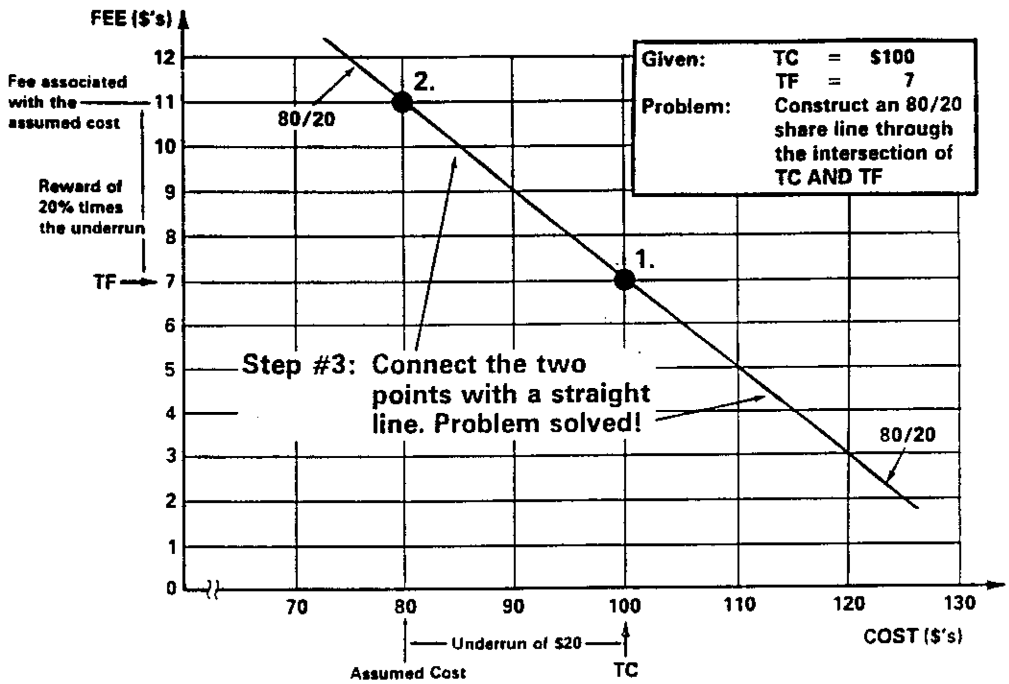

Figure E-4.

Converting the Formula to a Share Line Equation

The construction on the preceding pages is made easier when it is recognized that the contractor share of all cost savings (or cost overruns) would be 20 percent. All that really was necessary to construct the share line was to locate the intersection of TC and TF and assume either a cost underrun or overrun. In the construction, a $20 cost underrun (relative to TC) was assumed (that is, $80 was assumed as a cost outcome), and the increase in fee was found by multiplying the underrun ($20) by the contractor cost share (20 percent).

To summarize, the steps involved in the construction of any formula/share line are:

Step 1. **Locate the point defined by TC and TF (or target profit).**

Step 2. **Assume any cost outcome other than TC.**

Step 3. **Determine the fee (or profit) associated with the assumed cost.**

Step 4. **Locate the point defined by the assumed cost and associated fee (or profit).**

Step 5. **Connect the two points found in Steps 1 and 4, extending the line beyond either point.**

Stated another way, the positive change in fee relative to TF (assuming an underrun) was found by multiplying the change in cost by the contractor cost share. In the language of mathematics:

$$\Delta F = \Delta C \times \text{contractor share;} \qquad (1)$$

where "Δ" (delta) is defined as "the change in," and is read as "delta." This mathematical relationship is extremely important to an understanding of incentive contracting and is one of the very few equations the student should know thoroughly. The mathematical expression may be put in a more useful form by dividing each side of the equation by the Δ C term:

$$\frac{\Delta F}{\Delta C} = \frac{\Delta C}{\Delta C} \times \text{contractor share} \qquad (2)$$

or

$$\Delta F/\Delta C = \text{contractor share} \qquad (3)$$

Equation (3) is the form of the relationship normally used in incentive contracting.

The relationship may be used to construct a share line; it also may be used to determine the contractor share ratio when the share line already has been drawn. For example, suppose the problem had been to determine the contractor share for the share line illustrated in **Figure E-5** (assuming that it previously had not been labeled as an 80/20 share line). The determination is quite simple.

Share Line Equation

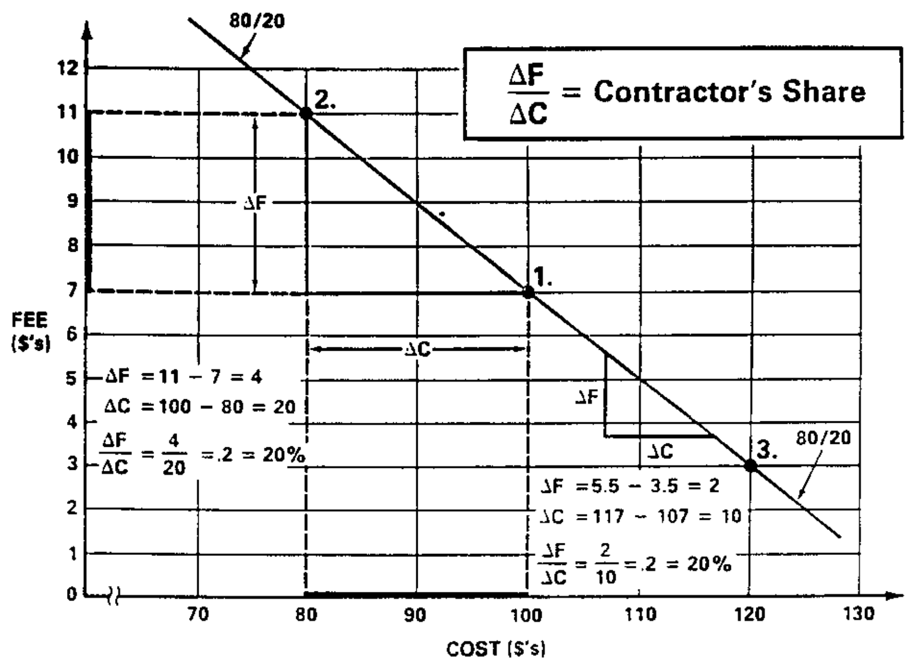

Figure E-5.

If vertical lines are constructed from the cost axis at $100 and $80 until they intersect the share line, it is relatively easy to see that the fees associated with these costs are $7 and $11, respectively. These fee determinations are made by extending horizontal lines from the vertical-line, share line intersections to the fee axis. The change in fee (Δ F) is equal to \$11 minus \$7, or \$4. The change in cost (Δ C) equals \$100 minus \$80, or \$20. Dividing Δ F by Δ C results in a contractor share of 20 percent:

$$\Delta F = \$11 - \$7 = \$4 \tag{4}$$

$$\Delta C = \$100 - \$80 = \$20 \tag{5}$$

$$\frac{\Delta F}{\Delta C} = \frac{\$4}{\$20} = \frac{1}{5} = .2 = 20\% \tag{6}$$

If the contractor share is known, the government share is found by making use of the fact that the sum of the two share figures is always equal to 100, or 100 percent. When the contractor share equals 20, or 20 percent, the Government share equals 80, or 80 percent (100, or 100 percent minus the contractor's share). (See **Figure E-6.**)

Share Line Equation - Example 1

1 UNIT MOVE FOR EACH 10 UNITS ON THE X AXIS

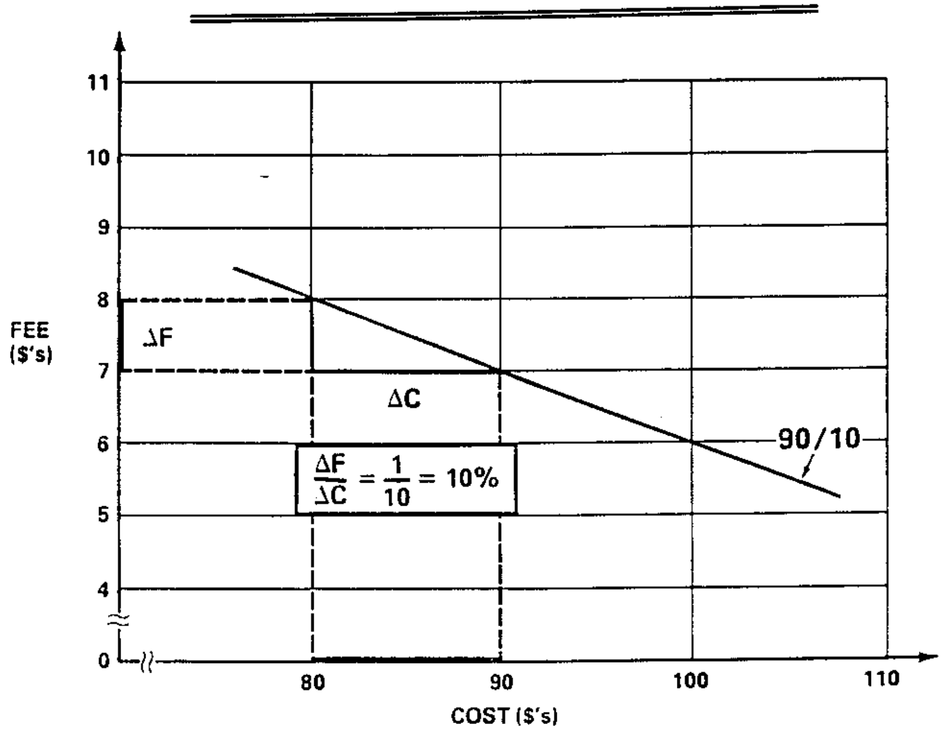

Figure E-6.

If, at a cost of $90, the contractor's fee is $7, and if, at a cost of $80, the contractor's fee is $8, then the contractor share of the underrun must be 10 percent.

$$\Delta F = \$8 - \$7 = \$1 \tag{1}$$

$$\Delta C = \$90 - \$80 = \$10 \tag{2}$$

$$\frac{\Delta F}{\Delta C} = \frac{\$1}{\$10} = \frac{1}{10} = .1 = 10\% \tag{3}$$

What is the price of the contract if the cost outcome is $90 and the fee is $7?

$$\text{Price} = \text{Cost} + \text{Fee} = \$90 + \$7 = \$97 \tag{4}$$

What is the price of the contract if, at a cost of $80, the fee is $8?

$$\text{Price} = \text{Cost} + \text{Fee} = \$80 + \$8 = \$88 \tag{5}$$

How much does the government save, in price, when the cost is $80 instead of $90?

$$\$97 - \$88 = \$9 \tag{6}$$

Isn't the $9 price saving equal to 90 percent of the $10 cost saving (underrun)?

$$\text{Government Share} = \frac{\$9}{\$10} = 90\% \tag{7}$$

Finally, doesn't the sum of the two share ratios equal 100 percent?

$$90\% + 10\% = 100\% \tag{8}$$

Share Line Equation - Example 2

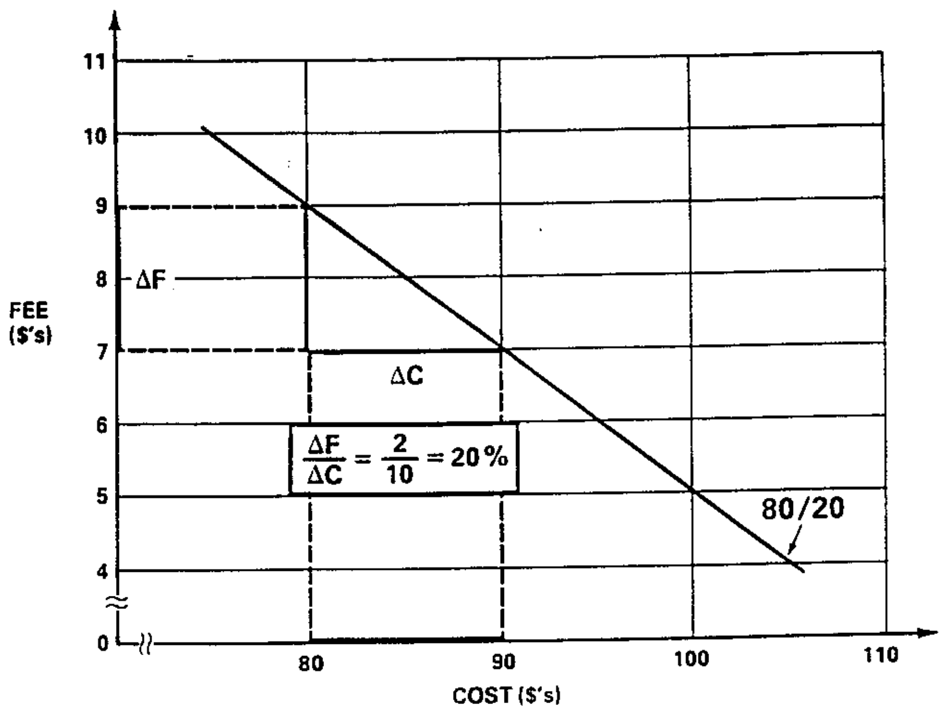

Figure E-7.

At a cost of $90, the fee equals $7. At a cost of $80, the fee equals $9. The contractor share of the underrun must equal 20 percent.

$\Delta F = \$9 - \$7 = \$2$ (1)

$\Delta C = \$90 - \$80 = \$10$ (2)

$\Delta F/\Delta C = \frac{\$2}{\$10} = \frac{2}{10} = .2 = 20\%$ (3)

If the contractor share of the underrun equals 20 percent, the Government share of the underrun must equal 80 percent.

$$\text{Price (Cost = \$90)} = \$90 + \$7 = \$97 \tag{4}$$

$$\text{Price (Cost = \$80)} = \$80 + \$9 = \$89 \tag{5}$$

$$\text{Government Savings} = \$97 - \$89 = \$8 \tag{6}$$

$$\text{Government Share of Underrun} = \frac{\$8}{\$10} = 80\% \tag{7}$$

$$\text{Sum of the Two Share Ratios} = 20\% + 80\% = 100\% \tag{8}$$

Learning Objective E-2

Structure Cost-Only Incentive Contracts

Learning Objective E-3

Generate Graphic Models for the Cost-Only Incentive Contracts

Structuring the Cost-Only Fixed-Price-Incentive Contract (Firm Target)

The FPI contract is preferred over the CPIF contract by both the Government and the contractor **when all prerequisites for the selection of the FPI contract are met.**

The structuring of the FPIF contract has a different orientation than any other incentive contract. It is concentrated between the target cost and the ceiling price rather than the entire spectrum of possible cost outcomes. In effect, the target cost becomes the expected or anticipated outcome, with a positive incentive added to encourage the contractor not to exceed target cost or to vigorously pursue cost control when actual costs will exceed target cost.

In developing Government's negotiation objectives, two cost figures are generally developed through cost analysis although an effective price competition could control the outcome. One is the target cost while the other is the high cost estimate (pessimistic cost) or the point of total cost assumption (PTA). If these two cost figures are developed through cost analysis, two profits are developed through the use of the DOD weighted guidelines methodology. The profit value at target cost is labeled **target profit.** The profit value at the high cost estimate has no specific label. When it has been added to the high cost estimate, the combined value represents the **ceiling price.**

The contractor's cost risk share of the profit adjustment formula can be predetermined by the Government, fixed during competition negotiation, or calculated from the following four elements:

- Target Cost
- Target Profit
- High Cost (Pessimistic) Estimate
- Profit at High Cost Estimate

Structuring Guide
for the Cost-Only Fixed-Price-Incentive Contract (Firm Target)

Step 1. Estimate the pessimistic and target costs. Target cost is the point at which these is a 50/50 chance of overrun versus underrun.

Pessimistic cost should be the Point of Total Assumption (PTA).

Step 2. Determine an acceptable profit for each level of cost.

Remember: Target profit is determined using the DOD Weighted Guidelines if cost analysis was used to establish target cost. Pessimistic cost plus profit at this cost point equals ceiling price.

Step 3. Compute the share ratio for the overrun.

$$\text{Contractor Share} = \frac{\text{Change in Fee}}{\text{Change in Cost}} \text{ or } \frac{\Delta\text{ Fee}}{\Delta\text{ Cost}}$$

Step 4. Review it to see if it makes sense.

Is the pessimistic cost realistic? Is the target cost reasonable?

Step 5. Graph it.

To restate the process but somewhat differently, first, subtract the profit at the high cost estimate from target profit. Second, subtract target cost from the high cost estimate. Divide the cost difference into the profit difference and multiply the resulting decimal by 100 percent. The percentage is the contractor's cost risk share of the profit adjustment formula. To calculate the Government's share of the cost risk, subtract the contractors share from 100 percent. For example:

Target Cost (C)	$10.0M	High Cost Estimate (PTA)	$11.5M
Target Profit (TP)	1.0M	Profit at the PTA	.5M

$$\text{Contractor's share of the cost risk} = \frac{\text{Change } (\Delta) \text{ in Profit}}{\text{Change } (\Delta) \text{ in Cost}}$$

Target Profit	$ 1.0M
PTA Profit	- .5M
Change in Profit	$ .5M
High Cost Estimate (PTA)	$11.5M
Target Cost	-10.0M
Change in Cost	$ 1.5M

Profit difference ($.5M) divided by the cost difference ($1.5M) equals .30 or 30 percent and is the contractor's share of the cost risk; 100 percent minus 30 percent equals 70 percent and this is the Government's share of the cost risk.

Other Commonly Used Structuring Techniques

The sharing relationships constructed as shown above accurately reflect the inter-relationships of the elements that were derived from an actual cost analysis. There are, however, other commonly used structuring techniques.

One method is to negotiate target cost and target profit and then establish the ceiling price as **a percentage of target cost.** Thus the ceiling price is based on an assumption rather than analysis. This can create a problem in situations where the technical uncertainties prove more difficult and costly to resolve than originally anticipated, and the contractor could be forced into a loss position even when performing satisfactorily.

Another method, used in competitive situations, is for the Government to establish the share ratio, target cost, target profit and ceiling price and require the offerors to propose within this structure. This method, as with the one above, is structured on assumptions rather than analysis and is only as valid as the assumptions used.

The Point of Total Assumption (PTA)

A final consideration for the fixed-price incentive contract is the PTA. The PTA is one specific cost value at which that specific cost value plus a specific profit value equals the ceiling price. From this cost point on, the incentive feature of the FPIF cost-only contrict is inoperable. Essentially, the cost-only FPIF contract behaves like an FFP contract. That is, for each dollar of actual cost greater than the PTA, the contractor's profit is decreased by one dollar. The PTA can be calculated by the following formula:

$$\frac{\text{Ceiling Price} - \text{Target Price}}{\text{Government Share}} + \text{Target Cost} = \text{PTA}$$

For example:

Target Cost	\$100	Ceiling Price	\$124
Target Profit	\$ 10	Share Ratio	70/30

$$\frac{\$124 - (100 + 10)}{.70} + 100 = \frac{124 - 110}{.7} + 100 = \frac{14}{.7} + 100 = \$120 = \textbf{PTA}$$

In the example above, the PTA cost point is \$120 and the profit at the PTA cost point is \$4. When combined, the total of \$124 is the ceiling price. Since the Government cannot pay any more than the ceiling price, each dollar of actual cost greater than \$120, the contractor's profit must be reduced by a dollar from the profit at the PTA cost point. Consequently, if actual negotiated cost is \$121, profit must be \$3; for actual cost of \$122, profit must be \$2, while for actual cost of \$123, profit must be \$1.

The PTA is important because it **represents the actual cost value at which the contractor bears total cost responsibility through contract completion.**

Graphing the Cost-Only FPIF Contract

To graph the following cost-only FPIF contract, use the steps outlined below.

Target Cost	$1,000,000	Ceiling Price	$1,250,000
Target Profit	100,000	Share Ratio	75/25

Steps for Graphing the Cost-Only FPI Contract (Firm Target)

Step 1. Scale the graph putting cost dollars on the horizontal axis; locate target cost on the scale by counting from left (origin) to right.

Step 2. Scale the graph putting profit dollars on the vertical axis; locate target profit on the scale by counting from bottom (origin) to top.

Step 3. Locate and plot the point of intersection of target cost ($1M) and target profit ($100K). Indicate by drawing dotted lines from each respective axis and label appropriately.

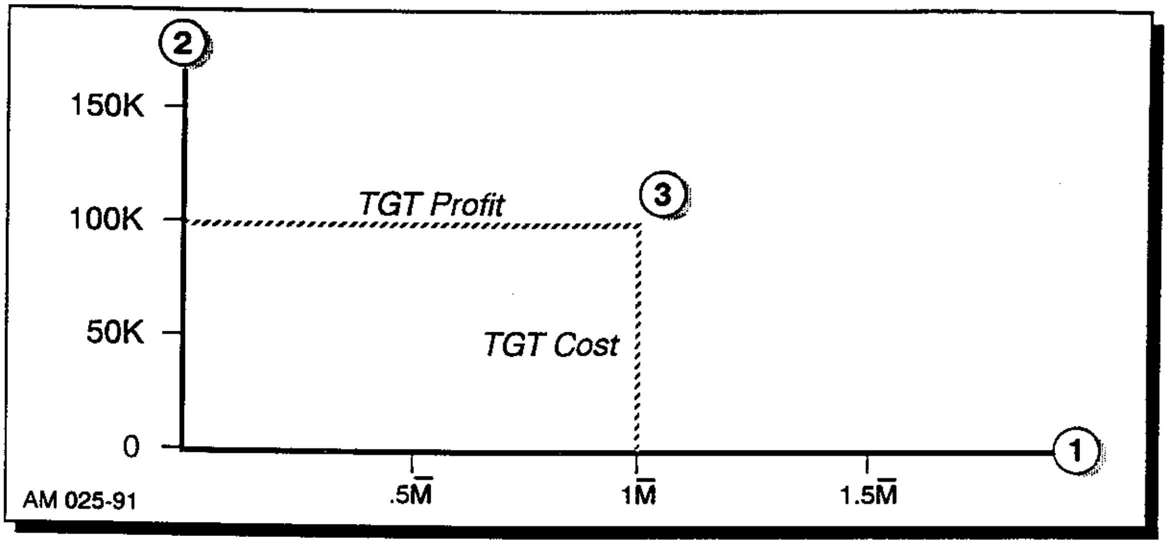

Figure E-8.

Graphing the Cost-Only FPI Contract (Firm Target) (continued)

Step 4. Calculate the PTA.

$$\frac{\text{Ceiling Price} - \text{Target Price}}{\text{Government Share}} + \text{Target Cost} = \text{PTA}$$

$$\frac{\$1.25M - \$1.1}{\$.75M} + \$1.0M = \$1.2M = \text{PTA}$$

Step 5. Subtract the PTA from the ceiling price to determine the profit value at the PTA.

Ceiling Price	\$1.25
PTA Cost	-1.20
PTA Profit	.05

Step 6. Locate and plot the point of intersection of the PTA and the profit at the PTA.

Step 7. Draw a line segment from the PTA/profit point through the target cost/profit point. Label this line segment with the ratio 75/25. This line segment has a decreasing slope when moving from left to right. More specifically, it is a line segment with a slope of -.25 which happens to be the contractor's share of the cost risk preceded by a negative sign. This simply represents that for each increasing dollar of actual cost, the contractor's share of that cost is $0.25 and will serve to reduce target profit by that amount.

Step 8. Draw a line segment from the PTA/profit point to the ceiling price point on the cost line. This line segment also has a decreasing slope when moving from left to right, but its slope is -1.00 and not -.25. This should be easily understood since the incentive is no longer operable at actual costs greater than the PTA cost point because the contract behaves like an FFP where the contractor no longer shares in the cost risk with the Government but assumes it all.

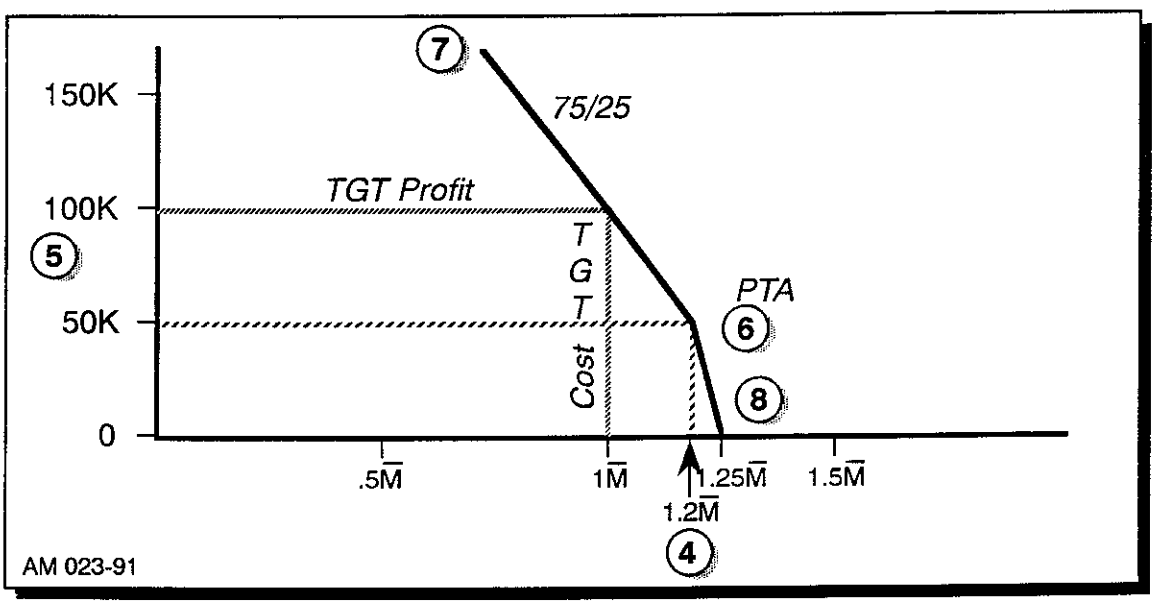

Figure E-9.

It is possible to calculate final profit and final price mathematically by assuming various final negotiated cost outcomes. The results of these calculations can be used to demonstrate the effectiveness of this arrangement and possible cost/profit trade-offs. For example, assume the following FPIF cost-only contract has been proposed:

Target Cost	$1,000,000	Ceiling Price	$1,250,000
Target Profit	100,000	Share Ratio	75/25

UNDERRUN			OVERRUN
$800,000	(1)	Assume a final cost figure.	$1,100,000
200,000	(2)	Find the difference between target and final cost.	$ 100,000
x.25	(3)	Multiply the contractor's share.	x.25
$50,000		Additional profit earned.	- $ 25,000
$100,000	(4)	Apply additional profit to target profit.	$ 100,000
$150,000		Final profit	$ 75,000
$800,000	(5)	Add final profit to final cost.	$1,100,000
$950,000		Final Price	$1,175,000

To fully analyze this arrangement, it would be necessary to perform the mathematics for all possible outcomes. Referring to the graph provides a useful tool by facilitating a visual overview of the entire incentive arrangement. Once a final cost figure is selected, merely locating that figure on the horizontal axis, moving up to the line segment that applies and locating the corresponding profit figure on the vertical axis is an easy and accurate way to determine final profit and price without the aforementioned steps.

Structuring the Cost-Only Fixed-Price-Incentive Contract (Successive Targets)

This contract type is used infrequently, although Secretary Cann, in his speech cited in the Preface to this text states:

> *At a predefined point in the development stage, for instance at system critical design review, the firm target price and the ceiling price for production options would be established. These options would be event driven, instead of calendar driven... The solicitation, and any resultant contract, would also specify a profit adjustment formula which would be applicable to the production option... This arrangement differs from a customary fixed-price incentive (successive) arrangement in that the firm targets are established prior to commencing production and the adjustment formula does not specify a profit ceiling, profit floor or absolute ceiling price...*

As was previously described, long leadtime requirements may make it necessary to contract for a follow-on before design or production stability has been achieved. Lacking this stability, cost or pricing information available at the time of follow-on award may not be adequate for the negotiation of a cost-only FPIF contract. Given this situation, it may be better to use a cost-only FPIS contract than to award a letter contract or negotiate a CPIF arrangement. The cost-only FPIS establishes an over-all ceiling price and gives the contractor some degree of cost responsibility and profit incentive in the interval **before** a realistic firm arrangement can be negotiated.

As you may recall, the elements of the FPIS contract are:

- A ceiling price
- Initial target cost
- Initial target profit
- Initial target price
- Initial share formula
- Ceiling and floor on firm target profit

Structuring Guide for the Cost-Only FPI Contract (Successive Targets)

Step 1. Estimate the initial target cost.

Target cost is the point at which there is a 50/50 chance of overrun versus underrun.

Step 2. Determine an acceptable profit for this level of cost. Remember: Initial target profit may be preset for a competitive strategy or determined using the Weighted Guidelines approach if cost analysis was employed.

Step 3. Establish the firm target profit ceiling and floor.

Weighted Guidelines may be used to establish the rewards due the contractor for operating at specific high and low cost outcomes.

The two profit levels are similar to the maximum and minimum fees of the CPIF contracts.

Step 4. Establish the initial profit adjustment formula.

The initial share should not provide as great a degree of contractor cost responsibility as would a formula negotiated under an FPIF contract.

Step 5. Establish the ceiling price.

The most pessimistic cost and the initial profit floor equal the ceiling price.

Step 6. Review it to see if it makes sense.

Is the target cost reasonable? Is the initial target profit reasonable? Is the initial profit adjustment formula reasonable?

Step 7. Graph it.

Graphing the Cost-Only FPI Contract (Successive Targets)

To graph the following FPIS contract, use the steps outlined below.

Initial Target Cost	$15,000,000
Initial Target Profit	1,200,000
Initial Target Price	16,200,000
Initial Sharing Formula	95/5
Firm Profit Ceiling	1,350,000
Firm Profit Floor	1,050,000
Ceiling Price	19,500,000

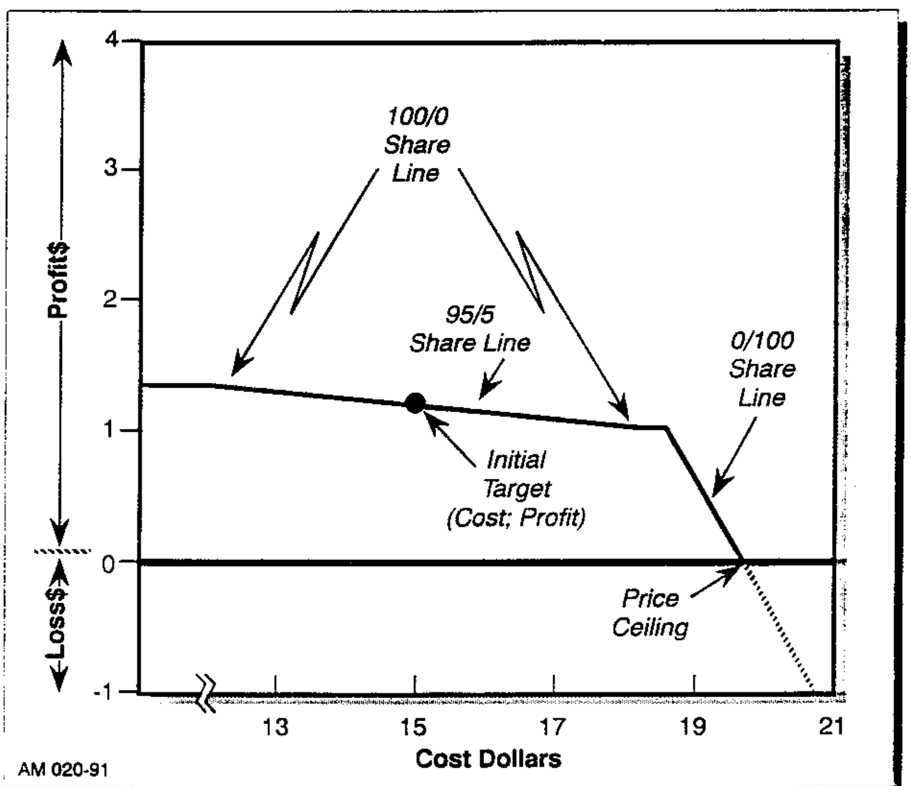

Figure E-10.

Steps for Graphing the Cost-Only FPI Contract (Successive Targets)

Step 1. Scale the graph putting cost dollars on the horizontal axis; locate initial target cost on the scale by counting from left (origin) to right.

Step 2. Scale the graph putting profit dollars on the vertical axis; locate initial target profit on the scale by counting from bottom (origin) to top.

Step 3. Locate and plot the point of intersection of initial target cost ($15M and initial target profit ($1.2M). Indicate by drawing dotted lines from each respective axis and label appropriately.

Step 4. Draw individual line segments parallel to the horizontal axis through the values of the firm target profit ceiling and floor.

Step 5. Calculate the corresponding cost points for the firm target profit ceiling and floor using the profit adjustment formula.

Step 6. Locate and plot the points of intersection of the profit ceiling and its cost point (underrun) and the profit floor and its cost point (overrun).

Step 7. Draw a line segment from this underrun point through the initial target cost/initial target profit point and on to the overrun point. Label this line segment with the ratio 95/5. This line segment has a decreasing slope when moving from left to right. More specifically it is a line segment with a slope of -.05 which happens to be the contractor's share of the cost risk preceded by a negative sign.

Step 8. Draw a line segment from the ceiling price point on the cost line which has a slope when moving from left to right of -1.00 and not -.05. Where this line segment intersects the overrun point, the incentive is no longer operable at actual costs greater than the overrun point because the contract behaves like a FFP contract.

The elements identified below are used to determine the firm target profit at the time of firm-up. When the time agreed by the parties arrives, the contracting parties will meet to negotiate an FFP or, failing that, a cost-only FPIF. This negotiation is referred to as the "firm-up".

Using the example above, assume a firm-up negotiation of an estimated cost of $14,500,000. Firm target profit would be determined as follows:

Initial Target Cost	$ 15,000,000	
Negotiated Cost	$ 14,500,000	
Difference	$ 500,000	(Decrease)
Contractor's Share	$ 25,000	(Increase)
Plus Initial Target Profit	$ 1,200,000	
Firm Target Profit	$ 1,225,000	

Choosing the FFP or FPIF Contract at Firm-Up

At this point, two alternatives exist. First, using the negotiated cost of $14,500,000 and the firm target profit as guides, an FFP contract may be negotiated. If a satisfactory firm price cannot be agreed to, or if the parties agree that the uncertainties involved in the remaining part of the contract are too great, an FPIF may be negotiated. In this event, the parties **must negotiate a new profit adjustment formula.** Also while the ceiling price cannot be **increased** at firm-up, a **decrease** may be agreed to where the negotiated costs are lower than initial target costs. Assuming that a revised ceiling price of $16,700,000 and a 60/40 formula were negotiated, a cost-only FPIF arrangement would be established as follows:

Target Cost	$14,500,000
Target Profit	1,225,000
Target Price	15,725,000
Profit Adjustment Formula	60/40
Ceiling Price	$16,700,000

Graphing this arrangement as well as final settlement at contract completion, would be done in the manner described previously for the FPIF contract.

Structuring the Cost-Only Cost-Plus Incentive-Fee Contract

The structuring of the CPIF contract, unlike the FPI contract, uses the entire range of possible cost outcomes that fall between the two extreme cost outcomes. If cost analysis is used, the target cost, the most optimistic cost (low cost estimate), and the most pessimistic cost (high cost estimate) are developed first. Then the target fee objective is developed through the application of weighted guidelines and the minimum and maximum fees are developed based on the reasonableness of the fee in relation to the attainment of the high/low cost estimates.

The fee adjustment formula is the result of the same analysis used to structure the profit adjustment formula in the FPIF contract.

Recall the relationship for finding the contractor's share of the profit adjustment formula under the FPIF contract:

$$\frac{\text{Mathematical difference in profit}}{\text{Mathematical difference in cost}} = \text{Contractor's Share}$$

While the difference in **profit** was determined by subtracting profit at the high cost estimate from the target fee, the difference in **fee** is the difference between the target fee and either the minimum or maximum fee. The difference in **cost** was determined by subtracting the target cost from the high cost estimate, the difference in **cost** for the CPIF is determined by subtracting the target cost from either the high or low cost estimate. There is no requirement that the contractor's share of the cost risk be the same on both sides of target cost.

If sharing ratios are predetermined, the high/low cost estimates are not the result of analysis, but are strictly mathematical conclusions. If the high cost estimate is too high (contractor isn't worried about it at all) or too low (contractor couldn't stay below the high cost estimate no matter what), the incentive arrangement loses its credibility and the contractor will not be motivated. Similar situations apply to the low cost estimate. If the contractor is not motivated, the incentive arrangement becomes a waste of time and may even become counterproductive by encouraging the contractor not to be concerned with cost control and efficiency.

Structuring Guide for the Cost-Only Cost-Plus-Incentive-Fee Contract

Step 1. Estimate the optimistic, pessimistic, and target cost. This establishes the Range of Incentive Effectiveness (RIE).

Target cost is the point at which these is a 50/50 chance of overrun versus underrun. Optimistic cost and pessimistic cost estimates define the range of probable (not possible) cost outcomes, assuming sound management and aggressive cost control by the contractor.

Step 2. Determine an acceptable fee for each level of cost. This establishes maximum fee, minimum fee, and target fee. If cost analysis is used, target fee is determined using the weighted guidelines. Maximum fee cannot be more than 15% of target cost for R&D contracts (10% for all others).

Step 3. Compute the share ratio for both overruns and underruns.

$$\text{Contractor Share} = \frac{\text{Change in Fee}}{\text{Change in Cost}} \text{ or } \frac{\Delta \text{ Fee}}{\Delta \text{ Cost}}$$

Step 4. Review it to see if it makes sense.

Are the optimistic and pessimistic costs realistic? Is the target cost reasonable?

Step 5. Graph it.

Graphing the Cost-Only CPIF Contract

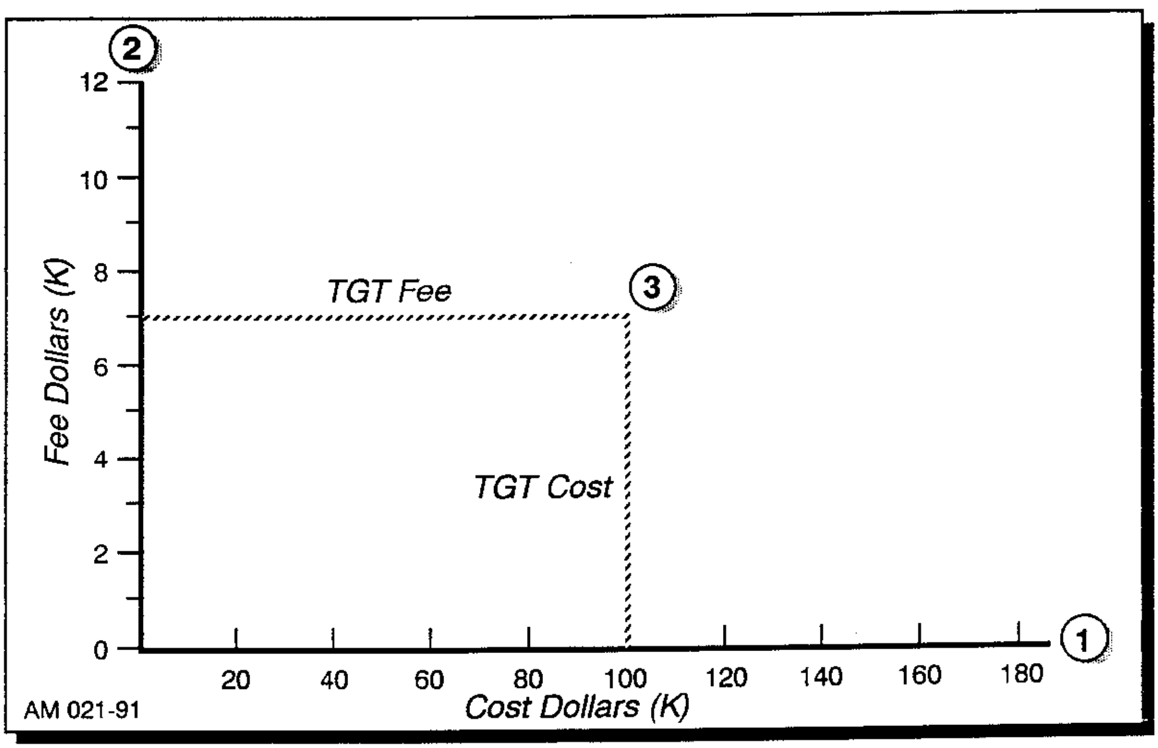

Figure E-11.

For example, assume the following CPIF arrangement has been proposed:

Target Cost	$100,000		
Target Fee	$7,000	Maximum Fee	$12,000
Share Ratio	80/20	Maximum Fee	$2,000

Steps for Graphing the Cost-Only CPIF Contract

Step 1. Scale the graph putting cost dollars on the horizontal axis; locate target cost on the scale by counting from left (origin) to right.

Step 2. Scale the graph putting fee dollars on the vertical axis; locate target fee on the scale by counting from bottom (origin) to top.

Step 3. Locate and plot the point of intersection of target cost ($100K) and target fee ($7K). Indicate by drawing dotted lines from each respective axis and label appropriately.

Step 4. In order to plot the remaining points, it is necessary to calculate the cost points that are associated with the minimum and maximum fee values.

Underrun Side

$$\frac{\text{Maximum Fee - Target Fee}}{\text{Contractor's Cost Risk Share}} = \text{Cost Difference}$$

$$\frac{\$12{,}000 - \$7{,}000}{.20} = \frac{\$5{,}000}{.20} = \$25{,}000$$

To calculate the cost point associated with the maximum fee, subtract the cost difference ($25,000) from target cost ($100,000). The value is $75,000 and represents the **low cost estimate**, or **most optimistic cost outcome.**

Locate and plot the point of intersection of maximum fee ($12,000) and the low cost estimate ($75,000). Draw a line segment from the vertical axis to the plot point. Label the line segment "Max Fee."

Overrun Side

$$\frac{\text{Target Fee - Minimum Fee}}{\text{Contractor's Cost Risk Share}} = \text{Cost Difference}$$

$$\frac{\$7{,}000 - \$2{,}000}{.20} = \frac{\$5{,}000}{.20} = \$25{,}000$$

To calculate the cost point associated with the minimum fee, add the cost difference ($25,000) to target cost ($100,000). The value is $125,000 and represents the **high cost estimate**, or **most pessimistic cost outcome.**

Locate and plot the point of intersection of minimum fee ($7,000) and the high cost estimate ($125,000). Draw a line segment from the plot point outward to the end of the graph. Label the line segment "Min Fee."

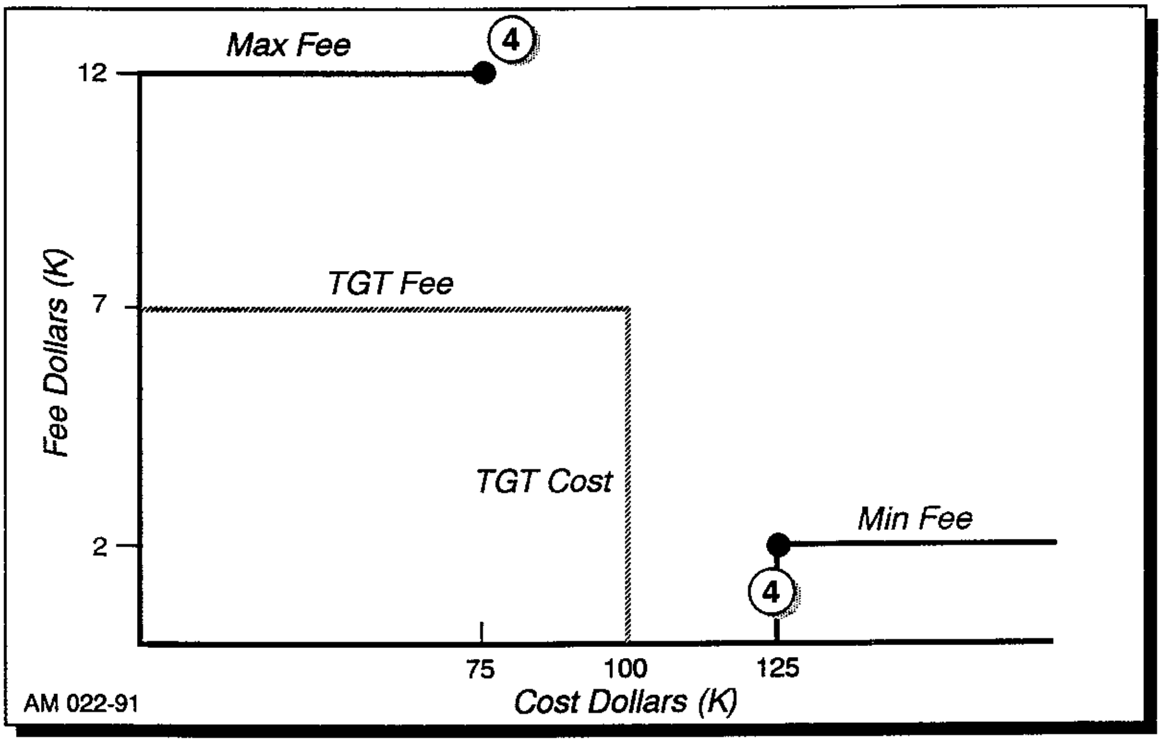

Figure E-12.

Step 5. Draw a line segment from the maximum fee/low cost estimate point to the target cost/target fee point. Label this line segment with the ratio 80/20. This line segment has a decreasing slope of -.20 when moving from left to right. This simply represents that for each increasing dollar of actual cost above the low cost estimate, the contractor's share of that cost is $0.20 and will serve to reduce maximum fee by that amount.

Stated another way, for each dollar that the contractor underruns target cost, the contractor's share of $0.20 will be added to target fee to act as the incentive for underrunning. However, this will only continue until actual costs equal the low cost estimate.

Step 6. Draw a line segment from the target cost/target fee point to the minimum fee/high cost estimate point. This line segment also has the same decreasing slope (-.20) when moving from left to right. This simply represents that for each increasing dollar of actual cost greater than target cost, the contractor's share of that cost is $0.20 and will serve to reduce target fee by that amount.

Stated another way, for each dollar that the contractor overruns target cost, the contractor's share of $0.20 will be subtracted from target fee to act as a deterrent from overrunning. However, this will only continue until actual costs equal the high cost estimate.

The Completed CPIF Contract

The completed CPIF contract is depicted in **Figure E-13.** It is apparent from both the numeric analysis performed previously and the graphic representation of the contract that, once either the maximum fee or the minimum fee is reached, the contract behaves like the **CPFF contract** form for **all further underruns or overruns.** There is a range of cost, therefore, over which the 80/20 share line is operative; beyond the extremes of this cost range, the incentive is inoperable and the contract converts to the CPFF form.

The operative cost range of the 80/20 share line is defined as the **Range of Incentive Effectiveness** (RIE). For the sample contract illustrated, the lower limit of the RIE is $75, the upper limit of the RIE is $125. The mathematical difference between these two cost points is the RIE. Note that at these cost outcomes the fee has reached its maximum and minimum levels, respectively. The difference between the maximum fee and the minimum fee is defined as the "fee swing or the fee pool". In the sample contract, the fee swing is $10 ($12 - $2) and the RIE is $50 ($125 - $75).

Division of the fee swing by the RIE results in the contractor share ratio -- 20 percent:

$$\frac{\text{Fee Swing}}{\text{RIE}} = \frac{\$12 - \$2}{\$125 - \$75} = \frac{\$10}{\$50} = \frac{1}{5} = 20\% = \text{Contractor Share}$$

The Completed CPIF Contract

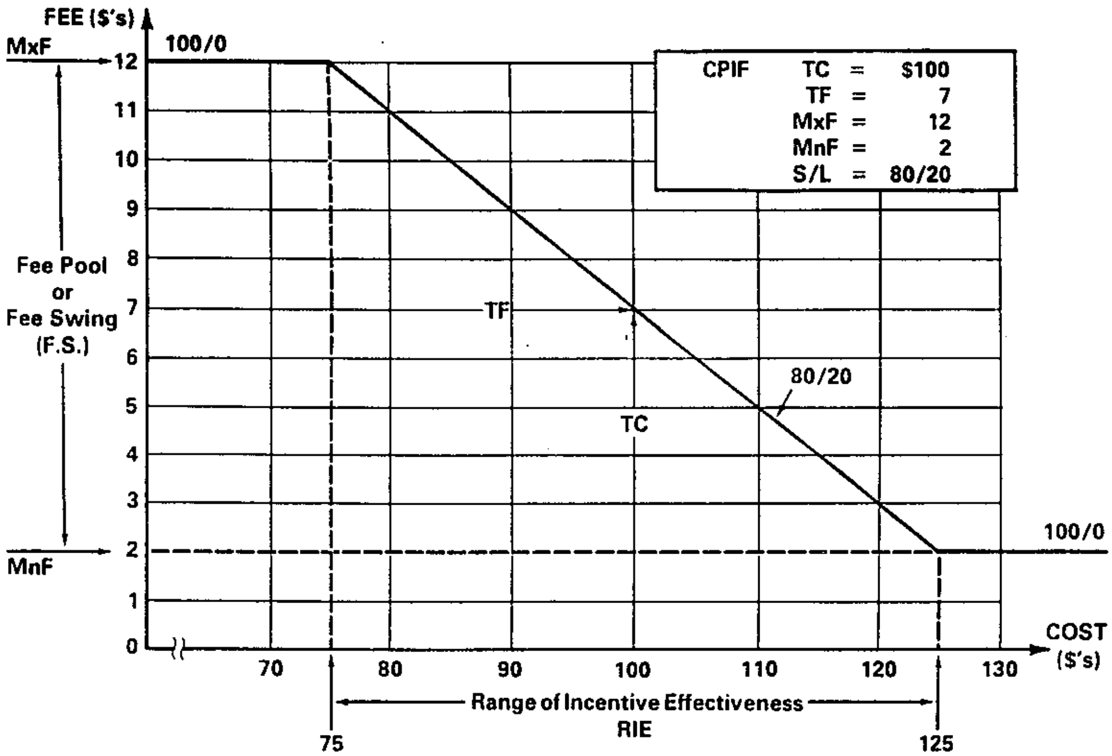

Figure E-13.

Graphing a Contract with a Broken Share Line

The first two steps in graphing the contract would be to construct horizontal CPFF share lines at the maximum fee and minimum fee limits, and to locate the intersection of target cost and target fee. The remaining steps are similar to those used for the construction of any CPIF contract. (See **Figure E-14.**)

Graphing a Contract with a Broken Share Line

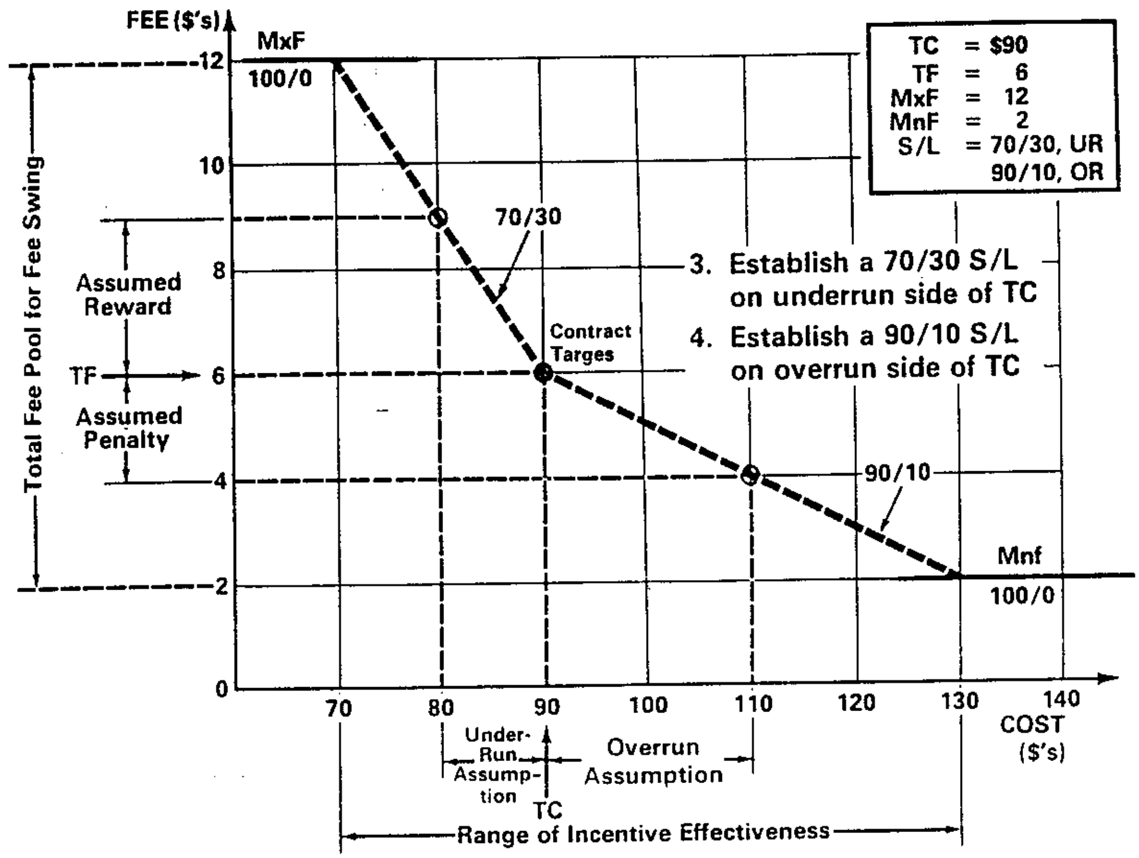

Figure E-14.

Learning Objective E-4

Structuring the Multiple-Incentive Contract

Multiple incentive contracting **combines** the **motivation** for **technological progress, timely delivery** and **effective cost control** with the ultimate **objective** of **attaining** an appropriate **balance** between **performance, schedule** and **cost control** -- not necessarily the lowest cost. Obviously, **in cost-only incentives, the emphasis is on the attainment of the stated performance achievement level at the lowest cost.**

To be sound, the concept of multiple incentive contracting must quantitatively relate profit motivation directly with the Government's objectives. Multiple incentives must identify the alternative technical levels of performance and place the relative value on the alternatives as affected by the relationship between cost, performance and schedule decisions.

Multiple incentives should be negotiated within a structure which gives appropriate weight to acquisition objectives. This includes a balancing of the range of cost and performance goals. The proper balancing of objectives achieves two important results:

(1) It communicates the Government's objectives to the contractor; and

(2) It establishes the contractor's profit in direct relationship to the value of the combined level of performance in all areas.

The contractor's program and administrative management procedures must provide visibility for trade-offs. Further, the time to establish the desirable trade-offs for the Government is prior to the award of a contract. Multiple-incentive contracts are formed around the CPIF or FPIF type contracts; however, when award fees are coupled with other contractual incentives (CPIF/AF), this also could be classified as a multiple-incentive contract but not in the context described by this learning objective.

CPIF or FPI Multiple Incentive Structuring Guide

Step 1. Select parameters to incentives (<u>cost</u> must be one).

Step 2. Establish optimistic, pessimistic and target outcomes for non-cost (performance) parameters; these are specific requirements, not goals.

Optimistic outcomes must be **achievable** and be of **value** to the Government.

Pessimistic outcomes must be **acceptable** to the Government.

Step 3. Estimate target cost and target fee or target profit.

Target cost is based on target performance and represents a 50/50 chance of cost overrun versus cost underrun.

Target fee/profit is determined using Weighted Guidelines.

Step 4. Estimate optimistic and pessimistic outcomes for cost.

Optimistic and pessimistic costs represent the range of **probable** (not **possible**) cost outcomes to achieve **target performance**, assuming sound management and aggressive cost control by the contractor.

Step 5. Establish the fee or profit pool.

Determine the fee/profit increase from target fee/profit you are willing to pay if the contractor actually delivers optimistic outcomes for all parameters. This is called the positive fee/profit swing and is subject to the fee limitations of for cost reimbursement contracts.

Determine the fee/profit reduction (from target fee/profit) you will assess if the contractor actually delivers pessimistic outcomes for all parameters. This is called the negative fee/profit swing.

Step 6. Establish the relative importance of the incentivized parameters.

Although the primary purpose of this section is to introduce the student to the basic concepts of incentive contracting, the textual and graphic material on this and the following pages is intended to aid the student's understanding of the somewhat more advanced concepts of multiple incentive contracting. The CPIF multiple incentive contract serves as a focus for the entire discussion, but the large majority of the material is applicable to the FPI multiple incentive contact as well.

The entire discussion of the CPIF multiple incentive contract relates to the following hypothetical development contract:

Target Cost = $120M
Target Fee = $ 10M
Maximum Fee = $ 18M
Minimum Fee = $ 2M
Fee Adjustment Formula = 80/20

The contract contains cost, performance (payload) and delivery incentives as follows: Cost sharing takes place over the range $100M (million) to $140M, with target cost equal to $120M. The cost fee swing is $\pm$ $4M and the sharing formula is characterized as 80/20. The cost outcome of $100M is the most optimistic cost outcome to be expected; the outcome of $140 is the most pessimistic cost expected. (See **Figure E-15.**)

The Multiple Incentive CPIF Contract

Assume the following:

TC = $120 M
TF = 10 M
MxF = 18 M
MnF = 2 M
S/L = 80/20

Also assume the following incentive pattern:

	Mo	T	Mp	Fee Swing
Cost	$100 M	$120 M	$140 M	±$4 M
Payload	60,000 lbs	50,000 lbs	40,000 lbs	±$2 M
Delivery	32 Mos	36 Mos	40 Mos	±$2 M

Figure E-15.

The most optimistic payload is 60,000 pounds, the most pessimistic payload is 40,000 pounds, and the target payload is 50,000 pounds. The payload fee swing equals ± $2M.

The delivery incentive is operative, following contract award, over a 32- to 40- month time period, with most optimistic delivery being 32 months, most pessimistic delivery being 40 months, and target delivery being 36 months. The delivery fee swing is ± $2M

How should the incentive provisions of this hypothetical contract be graphed? Perhaps the easiest and most fruitful thing to do is what is called "goalpost the incentives."

Goalposted Multiple Incentive Contract

As the fee swings and cost ranges of incentive effectiveness for each incentive parameter are developed, goalposting the incentive provisions is a rather simple concept and task. The three goalposted incentives are displayed in **Figure E-16** and are discussed in the following order: cost, payload and delivery.

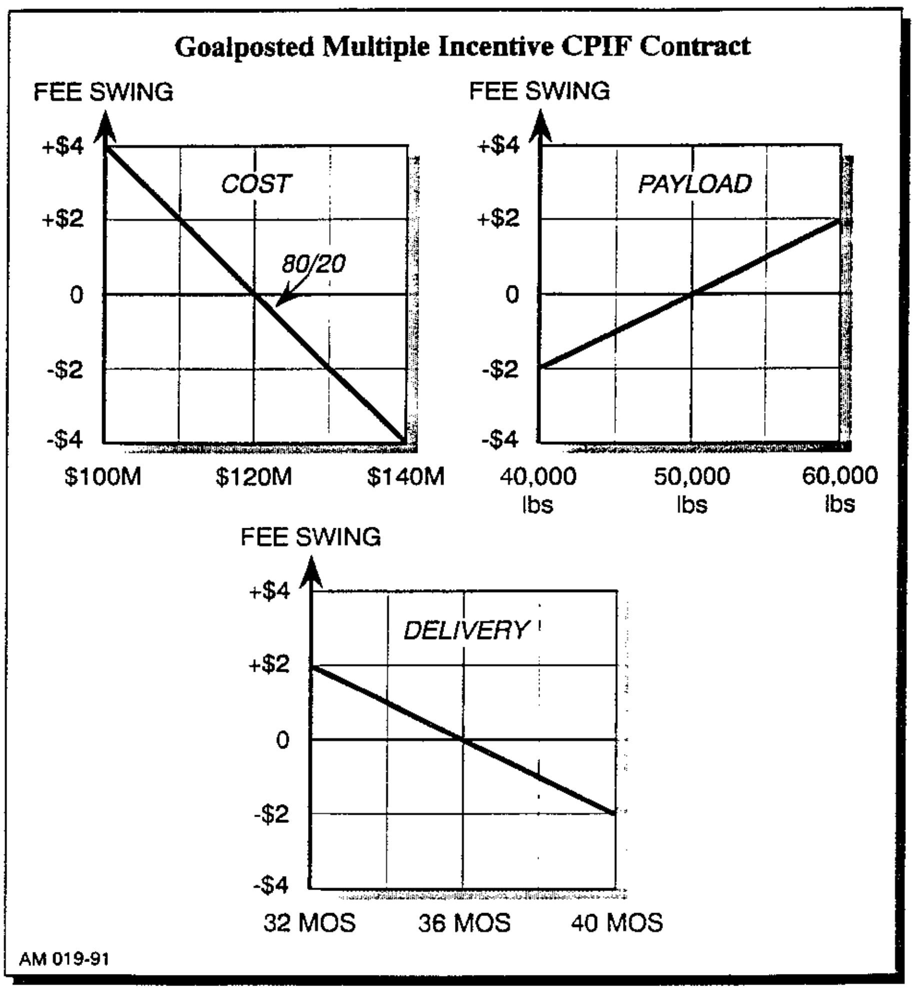

Figure E-16.

The +$4M fee swing for cost is earned only if the cost outcome at the end of the development equals $100M. Should the outcome be $120M, the contractor's fee will be neither increased nor decreased because of cost performance. If, for some reason, the cost outcome equals $140M, the entire negative fee swing of -$4M will be operative.

The -$2M fee swing for payload will be applied if, at the end of the development, the system payload is found to equal 40,000 pounds. Should the payload outcome be 50,000 pounds, the contractor's fee will be neither increased nor decreased because of payload performance. Should the payload equal 60,000 pounds at the end of the development, however, the +2M fee swing for payload will be earned.

If delivery occurs 32 months after contract award, the +$2M fee swing will be earned. Should delivery occur 36 months after award, there will be no increase or decrease because of delivery. If, however, delivery occurs 40 months after contract award, the entire -$2M fee swing will be operative.

The contractor's final fee is determined at the end of the development by **adding the sum of the three separate fees to the target fee.** An infinite number of possible fees could be earned; however, two fee outcomes are unique:

(1) **Maximum fee will be earned only if the outcomes are (i) cost equal to $100M, (ii) payload equal to 60,000 pounds, and (iii) delivery equal to 32 months; and**

(2) **Minimum fee will be earned only if all three most pessimistic outcomes occur simultaneously pounds.**

What is the value of a 10,000-pound improvement in payload? What is the value of a 4-month improvement in delivery?

At first glance you might answer that 10,000 pounds of payload are worth $2M because any time payload is increased by 10,000 pounds (within the payload RIE), fee is $2M greater than it otherwise would have been. The answer is appealing; however, it is not entirely correct. True, the $2M does represent the change in fee that would occur for such a payload improvement; but how much additional cost dollars could be expended so that the penalty for the expenditure would balance the reward for the improvement?

A simple chart known as the T-chart (tradeoff), such as the one in **Figure E-17** will aid in clarifying the situation. An entry under the "Δ Element" (change in incentive element) column heading indicates that payload is to be improved by 10,000 pounds. An entry under the "Δ Fee" (change in fee) column heading indicates that fee would increase by $2M if payload were to increase by 10,000 pounds. Below this $\pm$ $2M entry, a balancing entry of -$2M is placed. If the contractor cost share ratio is .2 (20 percent), then a $2M reduction in fee would occur if the contractor expended and additional $10M in cost ($10M x 0.2 = $2M). The value of the payload improvement is the cost dollar expenditure at which the penalty would balance the reward for the payload improvement. A 10,000-pound payload improvement is worth $10M because the net fee effect equals $0.

Similarly, the T-Chart in **Figure E-17** illustrates that a 4-month delivery improvement also is worth a $10M cost expenditure. Follow the arrow through the delivery-cost T-chart to ascertain for yourself that 4 months are worth $10M.

The T-Chart Value Statement Analysis

Δ Element		Δ Fee
Payload	+10,000 lbs	+$2 M
Cost	+10 M	−$2M

∴ 10,000 lbs ≅ $10 M Cost

Δ Element		Δ Fee
Delivery	− 4 Mos	+$2 M
Cost	+10 M	−$2M

∴ 4 Mos ≅ $10 M Cost

1. If 10,000 lbs ≅ 4 Mos ≅ $10 M, Cost
   Then 5,000 lbs ≅ 2 Mos ≅ $5 M Cost
2. If 10,000 lbs ≅ $10 M
   and 4 Mos ≅ $10 M
   Then 10,000 lbs + 4 Mos ≅ $20 M

Figure E-17.

The value of a performance (or delivery) improvement can be found by a number of methods. One method is to use a T-chart to equate cost dollars to the performance (or delivery) improvement by balancing rewards against penalties. Another method is to divide the increase in fee for the improvement by the contractor cost share (this is what the T-chart really does). A third method is to find the set of outcomes in cost and performance (or delivery) that would result in the same fee being earned for each pair of outcomes in the set, plot these outcomes on a graph, and find the slope of the line (or lines) from the plotted data.

Finding Pairs of Outcomes

The procedure for finding such pairs of outcomes is illustrated in **Figure E-18** using the sample contract as a model and assuming that delivery will be 36 months (therefore, there is no change in fee because of delivery). The procedure is relatively easy for the sample contract because none of the incentive provisions contain breakpoints within their respective RIEs. When breakpoints do occur, the procedure is more complex, but still applicable.

Figure E-18 illustrates how three pairs of cost and payload outcomes leading to a fee outcome of $10M are found. Step 1 is to recognize that an outcome of $10M represents a total change in fee equal to $0. Step 2 is to assume a payload outcome (40,000 pounds). Step 3 is to determine the Δ fee associated with that payload outcome (-$2M). Step 4 is to find the Δ fee for cost that when added to the Δ fee for payload, would result in the total Δ fee in the third row of the table being earned (for a net effect of $0, a +2M reward must be added to the -$2M penalty). Step 5 is to find the Δ Cost that would result in a +2M reward. With a contractor cost share of .2 (20 percent), a $10M cost savings would result in a +$2M reward. Step 6 is to add the Δ Cost (-$10M) to the TC ($120M), which results in a cost outcome of $110M. The first pair of payload and cost outcomes that lead to a fee of $10M are, therefore, 10,000 pounds payload and $110M cost.

Repeat this procedure for the other two columns in this table and for the other table in Figure E-18 (fee equals $12M) to familiarize yourself with the procedure.

Finding Pairs of Outcomes

FEE = $10M

PAYLOAD	2	40,000 lbs	50,000 lbs	60,000 lbs
ΔFEE pl	3	−$ 2M	0	+$ 2M
ΔFEE tot	1	0	0	0
ΔFEE cost	4	+$ 2M	-0	−$ 2M
ΔCOST	5	−$10M	0	+$10M
COST	6	$110M	$120M	$130M

1 If FEE = $10M, ΔFEE tot = 0

2 Assume a payload outcome

3 If PL = 40,000 lbs, ΔFEE pl = −$2M

4 If ΔFEE tot = 0 and ΔFEE pl = −$2M, then ΔFEE cost = +$2M

5 If ΔFEE cost = +$2M, ΔCOST = −$10M

6 If ΔCOST = −$10M, COST = $110M

FEE = $12M

PAYLOAD	2	40,000 lbs	50,000 lbs	60,000 lbs
ΔFEE pl	3	−$ 2M	0	+$ 2M
ΔFEE tot	1	+$ 2M	+$ 2M	+$ 2M
ΔFEE cost	4	+$ 4M	+$ 2M	0
ΔCOST	5	−$20M	−$10M	0
COST	6	$100M	$110M	$120M

1 If FEE = $12M, ΔFEE tot = +$2M

2 Assume a payload outcome

3 If PL = 40,000 lbs, ΔFEE pl = −$2M

4 If ΔF tot = +$2M, and ΔFEE pl = −$2M, then ΔFEE cost = +$4M

5 If ΔFEE cost = +$4M, ΔCOST = −$20M

6 If ΔCOST = −$20M, COST = $100M

Note: Assume delivery is going to be on target

Figure E-18.

Once a series of outcome pairs that lead to the same fee have been found, these pairs of fees may be plotted on the appropriate graph and a connection line may be drawn through the points. The lines connecting the outcome pairs that lead to the same fee are known as "iso-fee lines," "iso" meaning "equal."

Iso-Fee Chart Value Statement Analysis

The iso-fee chart in **Figure E-19** employs the sample contract cost RIE as its horizontal axes and the payload RIE as its vertical axes. The solid line (fee = $10M) shown on the chart was plotted by connecting the three cost-payload outcome pairs (only two really were needed) that we found in the preceding analysis led to a fee of $10M being paid. Ascertain whether the three outcome pairs that we found led to fee of $12M in the preceding analysis have been plotted appropriately on the iso-fee chart.

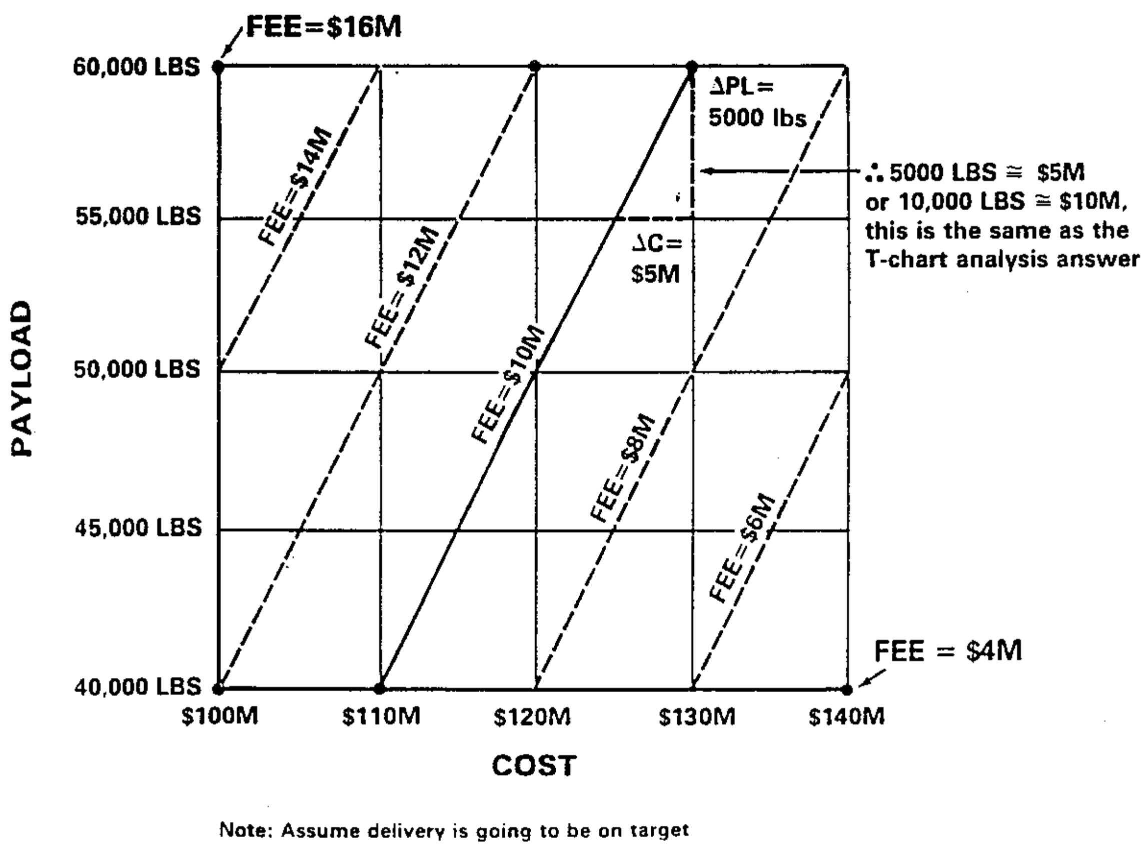

Figure E-19.

Because the sample contract payload and cost incentives both are straight lines, the iso-fee lines on the chart in **Figure E-19** also are straight lines and are parallel to one another. Actually, once one of these straight iso-fee lines has been established, any number of other iso-fee lines can be found almost by inspection. For example, by holding payload constant at 50,000 pounds (target) and by assuming a cost increase to $130M ($10M overrun), fee will decrease by $2M (the $10M overrun multiplied by the contractor cost share of 20 percent). The payload outcome of 50,000 pounds, in combination with the cost outcome of $130M, must, therefore, lie on the $8M iso-fee line ($10M - $2M = $8M). Using this one point as a reference (payload = 50,000, cost = $130M), the $8M iso-fee line then is drawn parallel to the $10M iso-fee line.

The slope of the iso-fee line is the **value statement.** One pair of outcomes that leads to the $10M fee is cost equal to $125M, payload equal to 55,000 pounds. If cost is increased by $5M (to $130M), by how many pounds must payload increase in order to return to a fee of $10M? Payload must increase to 60,000 pounds for the fee to remain unchanged at $10M. The value statement, therefore, is that **5,000 payload pounds are equivalent to $5M cost.** By doubling this equivalency, the result is 10,000 pounds equal to $10M, the same value statement found by the T-chart analysis.

Learning Objective E-5

Comprehend the Award Fee Contract

Structuring the Cost-Plus-Award-Fee Contract

The award fee strategy is captured in an award fee plan. The plan is tailored to each individual procurement. What works on one program and contract may not work on another.

THE STRENGTH OF THE AWARD FEE CONCEPT IS THE REPORT CARD AND ITS EFFECT ON CONTRACTOR PERFORMANCE

Techniques for assessing the contractor's performance are established before contract work begins. Although these are not necessarily included in the contract, they should be well understood, and the contractor should be completely aware of **how** he is to be evaluated. An essential element required to ensure realistic evaluation of contractor performance is the standards of measurement to be applied to the selected criteria; this, too, must be outlined before the contract work begins.

The amount of award fee is determined by a designated individual on the basis of recommendations made by a formally established evaluation board. The board, in turn, relies heavily on (1) evaluation reports, submitted periodically during the life of the contract, from cognizant Government personnel acting as performance monitors and (2) contractor input too.

The Evaluation Team

The organization of the evaluation team is normally no more than three levels: The Fee Determining Official (FDO), the award fee evaluation board, and performance monitors. The organizational structure should be as simple as possible and should avoid an overly structured evaluation process that hampers the flow of information from the monitors to the FDO. On large programs that require many performance monitors, an intermediate level between the evaluation board and monitors may be established to consolidate the inputs for a particular function.

The top level in the award fee organization is the FDO. He/she should be the key person responsible for getting the job done. All decisions by the FDO regarding the award fee are final and not subject to dispute. The FDO must assure that the amount/percentage of fee which is awarded reflects true contractor performance.

The next level in the organization of an award fee program is the evaluation board. This board is comprised of personnel whose experience in acquisition and with the contract allows them to analyze and judge a contractor's performance.

The board is responsible for reviewing tentative evaluations and recommendations and for recommending to the FDO award fees commensurate with contractor performance. Some boards even take on the responsibility for establishing performance criteria.

The board should approve the evaluation plan before the contract is awarded but it is not necessarily a requirement. Following each evaluation, the contractor is apprised of the results tentatively derived by the board and given an opportunity to contribute any supporting information on his own behalf. The objective of this action is not only to elicit information from the contractor to support or explain the nature of its performance but also to acknowledge meritorious work and give notice of areas requiring correction or improvement.

The performance monitors are the backbone of the award fee process. The monitors are people who deal with the contractor on a day-to-day basis. If there is a split between pre- and post-award contracting responsibilities, contract administration personnel as well as buying activity personnel should be included.

At all levels of the "award fee team," professionalism is absolutely essential. The integrity, knowledge and behavior of individuals involved, combined with the equity and thoroughness of the evaluations, is the key to award fee effectiveness. To summarize:

- Board of knowledgeable people meet;
- Hears contractor's contributions;
- Makes judgment calls;
- Reports to FDO;
- FDO makes decision.

The Award Fee Pool (Base Fee Excluded)

Determining the amount of the award fee pool is a critical part of developing acquisition strategy. How do we estimate an amount of award fee that is both reasonable and motivational? How should we address award fee in requests for proposals (RFPs)? How does the calculation of award fee relate to DOD profit policy and the use of Weighted Guidelines (WGL) for the determination of profit/fee?

The size of the award fee pool and RFP requirements are partially dependent upon the type of contract and whether we are in a competitive or non-competitive environment.

DFARS 216.404-2(b)(S-70) states that the WGL method for performing profit analysis shall not be applied to CPAF contracts. For this reason an alternate structured approach, in accordance with DFARS 215.971 and 215.973, should be used. Although the WGL method is prohibited for analyzing fee for CPAF contracts, the basic structure of the WGL method/format establishes a uniform approach and convenient mechanism for assuring the components of the alternate structured approach are considered.

Non-Competitive Situations

The first set of procedures for establishing the size of the award fee pool are applicable to non-competitive situations.

One approach to developing the award fee pool is to use the WGL format to estimate a "normal" fee for the effort. In this case "normal" means that fee objective that would be developed for the contract given the technical schedule, and cost risks inherent in the task. The inputs can be adjusted to consider any additional performance and contract type risk assumed by the contractor due to the subjective nature of the award fee process and additional management attention that the contractor will wish to devote to execution of the contract. The amount of the award fee pool should be evaluated to assess whether or not the pool is of sufficient size to motivate the contractor. If not, the pool should be adjusted accordingly, while keeping reasonableness in mind.

Competitive Situations

The second set of procedures for establishing the size of the award fee pool are applicable to competitive situations and differ only slightly from those discussed above. In a competitive environment, the suggested method is to use the Government's independent cost estimate for a "typical offeror" for the cost parameters in the WGL format. State in the RFP that the contract will contain an award fee and that the total award fee pool will be a specified percentage of proposed costs which will be set aside from the proposed firm-fixed price, or the target profit and ceiling of an incentive contract, is not subject to negotiation and should not be allowed to vary. The reasons for specifying the award fee pool as a percentage of proposed costs are to preclude contractor "gaming" of the award fee pool and to maintain the relationship between the size of the award fee pool and cost that was derived from WGL analysis.

Evaluation Periods

Once the total amount of the award fee pool is determined, then that pool is allocated over several periods of performance, called evaluation periods. The allocation of fee, as well as the length of time of the evaluation periods, is totally dependent on program needs and goals. These evaluation periods are often six months in length, at the end of which the contractor's performance is evaluated and all or part of the fee allocated to that period is awarded to the contractor. The evaluation periods can be any length of time, or can be tied to program milestones.

Evaluation Criteria

The greatest challenge with CPAF contracts lies in the quality of the evaluation criteria structure and the rating plan. It is important to understand the distinction between **objective** and **subjective** evaluation of contractor performance.

> **Objectivity**, on the contrary, suggests that the parameters are well defined, that are physically or mathematically measurable, and that any two parties reviewing a given work effort would be able to equally determine the extent of performance achievement in some reasonably provable manner.
>
> **Subjectivity** relates to the inability to spell out the requirements in a given performance situation with the precision of mathematical, mechanical, or similar objective measurement methods. Evaluation of contractor performance must be

made strictly on the basis of a subjective analysis which reflects the evaluator's opinions and impressions as to the level of quality achieved by the contractor.

Let's look at these criteria from an input versus output orientation. **Inputs** are the various actions and tasks which the contractor **must complete** to achieve final results. Criteria listed under the heading of "supervision" might include the following:

- Efficient use of personnel
- Ability to control personnel
- Work adequately planned

These would be judgment inputs. On the other hand, if the evaluation were to be made on the basis of the contractor delivering an item or end result in response to a given task, the following would be measurable outputs: completion of tests on time, or test results within the quality requirements pertinent to the task. Note that with well-defined, measurable outputs, no significant "judgment" on the part of contracting or other Government personnel is required as to how the contractor did the job; the **only consideration** is whether he did the job in the time required, to a specified level of quality. Thus a monitor need not be **subjective** when grading a contractor's performance.

Too many criteria and subfactors make the award fee burdensome and diluted. As the program changes or as problems arise, the criteria can be revised to address those changes or problems.

Another aspect of evaluation criteria is their relationship with each other. The criteria need to balance one another. Otherwise, if technical criteria are not balanced by cost criteria, the contractor may sacrifice cost to obtain the award fee incentives tied to design.

Each criterion is weighted. Each of the criteria may have subfactors if more definition is required.

The Grading Table

Part of the evaluation criteria is a grading table. These grades range from excellent to unsatisfactory. The range points assigned to each grade should be based on the needs of the program and do not have to be as shown in the sample plan. Regardless of what point spread is assigned to the grades, **in no case will award fee be granted for an overall evaluation of unsatisfactory**. Each grade defines what level of performance is expected for each evaluation criteria.

Defining the Criteria for Evaluation

The CPAF contract must contain the criteria by which contractor performance will be evaluated. Such criteria as timeliness, quality and cost control are very appropriate, but how is quality to be defined, what is timeliness, and what constitutes good cost control?

These criteria indicate how contractor performance will be evaluated. They should be outlined in contract, thereby ensuring the contractor understands how performance will be measured.

The evaluation criteria, with its grading table, should include a conversion table that translates the contractor's overall score into award fee dollars. The award fee plan, generally translated into a contract clause, must identify the conversion technique that will be employed.

Timeliness of Response

$$\frac{\text{Number of work orders completed on time}}{\text{Total number of work orders}} = \text{x100} = \text{\% completed on time}$$

Quality of Work

$$\frac{\text{Number of work orders accepted on first inspection}}{\text{Number of work orders inspected}} \quad \text{x100} = \text{\% accepted on first inspection}$$

Effectiveness of Cost Management

$$\frac{\text{Number of work hours completed within 10\% of estimated cost}}{\text{Number of work orders completed}} \quad \text{x100} = \text{\% completed within the estimated cost}$$

Figure E-20.

Basic Criteria for Selecting Performance Factors

The first step in structuring a CPAF contract is to determine what performance factors should be incentivized; understand what you are buying; why is it important to the mission and what schedule has been included in the contract. An analysis should be made of the statement of work to select those performance areas in which improvement in contractor performance is desired. Contract objectives can usually be divided into broad functional categories such as operations, technical management and business management. Each broad category can then be examined and divided into more discrete factors such as timeliness of work, work quality, cost control, contractor staffing, program management and subcontract management, to name a few.

Standards for Selection of Performance Factors

The standards for the selection of performance factors and subfactors are:

- **The performance area is meaningful and important to overall performance objectives.**
- **The contractor has effective management control over each performance factor and its results.**
- **Each factor and subfactor can be described and identified so there will be no duplication in the evaluation process.**
- **The criteria or standards by which performance will be evaluated, and how the evaluation will be done, must be developed and described.**

Figure E-21.

Each evaluation factor and subfactor should be weighted for evaluation purposes. The weighting should reflect the relative importance of the subfactor to the factor and the factor to the overall contract effort.

The evaluation weights are revealed to the contractor so the contractor will be aware of how the Government views the relative importance of each factor, and will act accordingly.

The contract must contain a provision giving the Government the right to unilaterally change the evaluation weights or evaluation factors as long as the contractor is notified of the change before the start of the affected evaluation period. Changing weights allows the Government to:

(1) Focus management emphasis on varying areas;

(2) Change this emphasis as required to meet the changing contractual situation; and

(3) Motivate the contractor to shift management effort accordingly.

Contractor performance must be evaluated at predetermined stated intervals so that the contractor will know how performance was rated and what areas were successful and what areas need to be improved.

Length of the Evaluation Period

The length of the evaluation periods must be related to the effort to be performed. Generally, periods shorter than quarterly are not recommended, and evaluation periods of equal length should not be used automatically. The length of the period should be long enough for the contractor to accomplish a measurable effort and they should be event-oriented. In an event-oriented effort, where the application of resources is variable depending on prescribed milestones or events during the contract period, evaluation periods of uneven length based on these critical milestones and events would be most practical.

Once the duration of each evaluation period has been established, the total award fee pool must be distributed to each evaluation period. How much of the total pool to allocate to an individual evaluation period depends on the circumstances of each case. The amount per period should relate to the significance of the work being performed and the risk involved in the particular evaluation period. The final evaluation period should contain an appropriate amount of the total award fee pool. This maintains the incentive effect through the last contractual period and encourages the contractor to maintain a high level of performance throughout.

The contract should contain a provision giving the Government the right to unilaterally change the award fee period allocation as long as the contractor is notified of the change before the start of the affected evaluation period.

Establishing the Evaluation Periods and Allocation of Award Fee: An Example

The following is an example of a contractual provision covering the establishment of the evaluation periods and the allocation of award fee.

Months After Contract Award

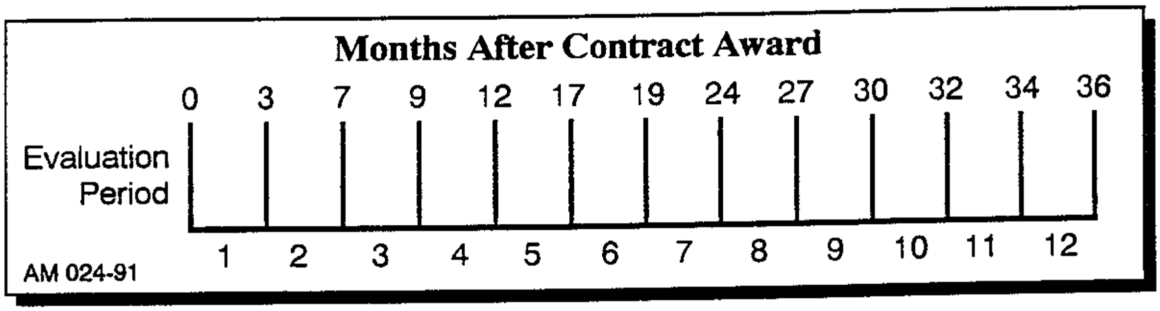

Figure E-22.

The time-span in **Figure E-22** depicts the expected evaluation periods for this contract. The percentage of total award fee to be distributed to each evaluation period is shown below. The first eleven (11) periods shall contain 80% of the total award fee. The twelfth (12th) evaluation period (completion of contract) shall have 20% of the total award fee distributed to it.

1st period 7%
2nd period 5%
3rd period 8%
4th period 8%
5th period 8%
6th period 3%
7th period 9%
8th period 12%
9th period 12%
10th period 3%
11th period 5%
12th period 20%

The evaluation periods may be changed unilaterally at the Government's discretion to reflect changed conditions, such as changes in contract scope, delivery schedules, milestones, etc. The percentage of award fee allocated to the evaluation periods may also be changed unilaterally at the Government's discretion at the beginning of each evaluation period.

Examples of Evaluation Grading Systems

The evaluation grading system must be set forth in the contract. Any reasonable system will suffice. The following examples are provided:

- **Example 1** is from the DFARS 216.404-2. Note that the grading system provides a narrative description of the kind of effort that will earn the varying grades. The DFARS example also shows how the weighting scheme will be applied to the grades or rating assigned.

- **Example 2** provides less of a description of the criteria for each grade than the DFARS example, but it provides a key factor not the DFARS example. Note the last sentence. This rating scheme provides for a zero fee for unsatisfactory performance. The CPAF contract must preclude the payment of award fee for unsatisfactory performance.

- **Example 3** provides a grading table and an award fee conversion chart. The grading tables provides for both alpha and numeric rating. The grading description is not as explicit as the DFARS example. The award fee conversion chart allows the rapid conversion from a point score to the percentage of the available award fee earned at that level. Note that a grade of 60 or less provides for zero fee.

The grading system examples provided are all from actual cases. None represents a perfect example because each situation must be tailored. A grading system should be reasonable, make sense, provide a clear description of the criteria to be used, and provide for a zero fee for unsatisfactory performance.

Example 1 - Performance Evaluation Report Criteria

PERFORMANCE EVALUATION REPORT CRITERIA

		Submarginal 0-60	Marginal 61-70	Good 71-80	Very Good 81-90	Excellent 91-100
A Time of Delivery	(A-1) Adherence to plan schedule.	Consistently late of 20% of plans.	Late on 10% plans w/or prior agree-ment.	Occasional plan late w/o justification.	Meets plan schedule.	Delivers all plans on schedule & meets prod. change requirements on schedule.
	(A-2) Action on Anticipated delays.	Does not expose changes or resolve them as soon as recognized.	Exposes changes but is dilatory in resolution on plans.	Anticipates changes, advises Shipyard but misses completion of design plans 10%.	Keeps Yard posted on delays, resolves independently on plans.	Anticipates in good time, advises Shipyard, resolves independently & meets prod. schedule.
	(A-3) Plan Maintenance	Does not complete interrelated systems studies concurrently.	System studies completed but constr. plan changes delayed.	Major work plans coordinated in time to meet production schedules.	Design changes from studies & interrelated plans issued in time to meet product schedules.	Design changes, studies resolved & test data issued ahead of production requirements.
B Quality of Work	(B-1) Work Appearance	28% dwgs. not compatible with Shipyard repro. processes & use.	20% not compatible with Shipyard repro. processes & use.	10% not compatible with Shipyard repro. processes & use.	0% dwgs. prepared by Des. agent not compatible with Shipyard repro. processes.	0% dwgs. presented incl. Des. agent, vendors, subcontr. not compatible w/Shipyard repro. processes & use.
	(B-2) Thoroughness & Accuracy of Work	Is brief on plans tending to leave questionable situations for Shipyard to resolve.	Has followed guidance, type & standard dwgs.	Has followed guidance, type & standard dwgs. questioning & resolving doubtful areas.	Work completed w/notes & thorough explanations for anticipated questionable areas.	Work of highest caliber incorporating all pertinent data required incl. related activities.
	(B-3) Engineering Competence	Tendency to follow past practice with no variation to meet reqmts. job in hand.	Adequate engrg. to use & adapt existing designs to suit job on hand for routine work.	Engineered to satisfy specs., guidance plans & material provided.	Displays excellent knowledge of constr. reqmts. considering systems aspect, cost, shop capabilities & procurement problems.	Exceptional knowledge of Naval shipwork & adaptability to work process incorporating knowledge of future planning in Design.
	(B-4) Liaison Effectiveness	Indifferent to requirements of associated activities, related systems, & Shipyard advice.	Satisfactory but dependent on Shipyard to force resolution of problems without constructive recommendations to subcontr. or vendors.	Maintains normal contact with associated activities depending on Shipyard for problems requiring military resolution.	Maintains independent contact with all associated activities, keeping them informed to produce compatible design with little assist. for Yard.	Maintains expert contact, keeping Yard informed, obtaining info. from equip., supplies w/o prompting by Shipyard.
	(B-5) Independence and Initiative	Constant surveillance req'd to keep job from slipping-assign to low priority to satisfy needs.	Reqs. occasional prodding to stay on schedule & expects Shipyard resolution of most problems.	Normal interest & desire to provide workable plans with average assistance & direction by Shipyard.	Complete & accurate job, free of incompatibilities with little or no direction by Shipyard.	Develops complete & accurate plans, seeks out problem areas & resolves with assoc. act. ahead of schedule.
C Effectiveness in Controlling an/or Reducing Costs	(C-1) Utilization of Personnel	Planning of work left to designers on drafting boards.	Supervision sets & reviews goals for designers.	System planning by supervisory, personnel studies checked by engineers.	Design parameters established by system engineers & held in design plans.	Mods. to design plans limited to less than 5% as result lack engrg. system correlation.
	(C-2) Control Direct Charges (except Labor)	Expenditures not controlled for services.	Expenditures reviewed occasionally by supervision.	Direct charges set & accounted for on each work package.	Provides services as part of normal design function w/o extra charges.	No cost overruns on original estimates absorbs service demands by Shipyard.
	(C-3) Performance to Cost Estimate	Does not meet cost estimate for original work or changes 30% time.	Does not meet cost estimate for original work or changes 30% time.	Exceeds original est. on change orders 10% time & meets original design costs.	Exceeds original est. on change orders 5% time.	Never exceeds estimates of original package or change orders.

CONTRACTOR PERFORMANCE EVALUATION REPORT

Ratings	
Excellent	(91-100)
Very Good	(81- 90)
Good	(71- 80)
Marginal	(61- 70)
Submarginal	(0- 60)

Period of ________ 19 ______
Contract Number ____________
Contractor ____________
Date of Report ____________
PMS Technical Monitor/s ____
____

CATEGORY	CRITERIA	RATING	ITEM FACTOR	EVALUATION RATING	CATEGORY FACTOR	EFFICIENCY RATING
A	TIME OF DELIVERY					
	A-1 Adherence to Plan Schedule	____	x .40 =	______		
	A-2 Action on Anticipated Delays	____	x .30 =	______		
	A-3 Plan Maintenance	____	x .30 =	______		
	Total Item Weighed Rating			______	x .30 =	______
B	QUALITY OF WORK					
	B-1 Work Appearance	____	x .15 =	______		
	B-2 Thoroughness & Accuracy of Work	____	x .30 =	______		
	B-3 Engineering Competence	____	x .20 =	______		
	B-4 Liaison Effectiveness	____	x .15 =	______		
	B-5 Independence & Initiative	____	x .20 =	______		
	Total Item Weighed Rating			______	x .40 =	______
C	EFFECTIVENESS IN CONTROLLING AND/OR REDUCING COSTS					
	C-1 Utilization of Personnel	____	x .20 =	______		
	C-2 Control of all Direct Charges other than labor	____	x .40 =	______		
	C-3 Performance to Cost Estimate	____	x .40 =	______		
	Total Item Weighed Rating			______	x .30 =	______

TOTAL WEIGHED RATING ____________________

Rated by: ____________________

Signature(s) ____________________

NOTE: Provide Supporting data and/or justification for below average or outstanding item ratings.

Example 2

Performance Evaluation Criteria and Ratings

(1) Excellent (81-100)

The satisfactory level of performance is exceeded by a substantial margin and the performance monitor can cite few, if any, areas requiring improvement. There are factors indicating creativity, ingenuity, initiative and/or excellent performance under adverse conditions.

(2) Good (61-80)

The contractor's performance exceeds standard; and, although improvement may be required in some areas, this is more than offset by better performance in other areas.

(3) Satisfactory (41-60)

Performance between 41 and 60 is satisfactory, with the point 50 being the expressed level of satisfactory performance that can be expected from a good CPAF contractor. At this point, areas requiring improvement are approximately offset by better than satisfactory performance in other areas.

(4) Marginal (21-40)

The contractor's performance is less than standard and the performance monitor can cite many areas for improvement which are not offset by better performance in other areas.

(5) Poor (0-20)

Performance at level 20 or below is indicative of serious mismanagement, negligence and/or incompetence and requires the contractor to take immediate corrective action. For performance at this level, the contractor will not be entitled to any portion of the award fee covering that evaluation factor.

Example 3

Grading Table

Symbolic Grade	Description	Range of Performance Points
A	Performance exceeds standard by a substantial margin; few elements for improvement, all of which are minor	96 - 100
B	Performance exceeds standards; although there may be several elements for improvement, these are more than offset by better performance in other elements.	86 - 95
C	Performance is standard; elements for improvement are approximately offset by better performance in other elements.	76 - 85
D	Performance is less than standard; although there are elements of standard or better performance, these are more than offset by lower graded performance in other elements.	66 - 75
E	Performance is less than standard by a substantial margin; there are many elements for improvement not offset by better performance in other elements.	61 - 65
F	Performance is below minimum.	60 and below

* A grade of 80 performance points is the numerical median between minimum acceptable of 61 and 100, and corresponds to what is normally expected of the contractor.

Example 3 (continued)

Award Fee Conversion Chart

Performance Available Points	% of Available Award Fee	Performance Points	% of Award
100	100.0	80	50.0
99	97.5	79	47.5
98	95.0	78	45.0
97	92.5	77	42.5
96	90.0	76	40.0
95	87.5	75	37.5
94	85.0	74	35.0
93	82.5	73	32.5
92	80.0	72	30.0
91	77.5	71	27.5
90	75.0	70	25.0
89	72.5	69	22.0
88	70.0	68	20.0
87	67.5	67	17.5
86	65.5	66	15.0
85	62.5	65	12.5
84	60.0	64	10.0
83	57.5	63	7.5
82	55.0	62	5.0
81	52.5	61	2.5
		60	

Contractual Implementation

To incorporate the award fee concept into the contract, a provision must be included in the solicitation document. The provision provides that the Government can unilaterally change the plan, the criteria, the distribution of the award fee pool, and the evaluation periods as long as the contractor receives notification prior to the start of the next affected evaluation period.

Be sure that sufficient funds for the award fee are available. The award fee is a contingent liability. As such, the initial increment must be reserved before the contract can be executed. Additional increments for subsequent evaluation periods must be available at the beginning of each new evaluation period.

Summary

First, the plan and the criteria must be tailored to specific situations; there is no cookbook. If the award fee process is too structured, effectiveness is eroded. The criteria must be meaningful and cannot be overly restrictive. Be sure to keep the plan current because it is essential that the plan continue to reflect the objectives of the program.

Second, award fee is an important management and communication tool. Timely identification of problems, concerns and changes to the plan are very important. Interim reports have been found to be an excellent means of communicating with **top-level management**. These reports are usually made half-way through the evaluation period. The FDO makes an evaluation of the contractor's current performance, citing major strengths and weaknesses and what we expect in the future. The interim report does not result in a determination of fee but it does provide input into the final determination for the evaluation period. How often and when interim reports should be used depends on the size of the program, the length of the evaluation period and the discretion of the FDO.

Third, the award fee determination must be **balanced, realistic and equitable.** The evaluation has to consider the environmental conditions as well as performance. Ensure that the award truly reflects the contractor's overall performance.

Fourth, award fee starts at zero percent, not 100 percent. The contractor must **earn** the fee. The award fee becomes ineffective if the contractor views it as a guaranteed payment no matter what the level of performance.

CONTRACT ADMINISTRATION ISSUES FOR INCENTIVE CONTRACTS

Learning Objective F-1:

Implement Procedures for Changing Incentive Contracts

Learning Objective F-2:

Discuss Funding Provisions for Incentive Contracts

Learning Objective F-3:

Describe Financing Provisions for Incentive Contracts

Chapter F - Contract Administration Issues for Incentive Contracts

Introduction

Contract administration encompasses many different types of actions that are taken by personnel to assure compliance with all contract terms and conditions. It includes all activities that take place during the performance of a contract and all other functions related to the contract, including final payment and contract closeout. Contracting officers are responsible for administering contracts but are assisted by many other professionals and specialists, namely the contract specialist, the contract administrator (if pre-award responsibilities are separated from post-award responsibilities by job description), the quality assurance representative and the technical representative of the contracting officer. Consequently, the need for teamwork in the contract administration phase of the acquisition cycle is essential and at times intensive. One thing, however, characterizes all contract administration actions: all actions serve the primary purpose of assuring that DOD's needs for supplies and services are secured in a timely manner, at the established price or at a reasonable cost, and that they are procedurally correct so that DOD's interests are protected.

Contract administration starts as soon as the contract is awarded, although the contract specialist has planned for it (whether or not he or she was aware of it) in the preparation and preaward stages of the acquisition. The volume of administrative actions will vary from contract to contract and it is generally linked to the amount of financial risk assumed or retained by the contracting parties. In many cases, the only action by the contracting officer or authorized representative during contract performance may be the inspection and acceptance of a service or supply and payment of the specified contract price. On the other hand, a contract for research may have daily actions, including consent to proposed subcontracts, approval of operating systems, reimbursement of allowable costs, technical direction, statement of work interpretation and on-going progress monitoring.

This course focuses on specific areas that are important to the administration of incentive contracts. They are:

- Processing contract changes
- Processing funding and payment actions

Learning Objective F-1

Implement Procedures for Changing Incentive Contracts

Negotiating an equitable adjustment in the price and/or delivery schedule generated by a contract change is a difficult problem in any contract. Changes are troublesome enough when only the price or estimated cost and fixed fee and delivery schedule are at issue. The problem is compounded, however, when an incentive contract is involved because the change may affect all elements of the incentive arrangement and their interrelationships. The equitable adjustment must result in an agreement that not only preserves the intent of the original pricing arrangement but also adequately reflects the changed conditions.

There are a variety of methods used in arriving at an equitable adjustment to an incentive contract. This part will discuss the four most common methods. Each has its advantages and disadvantages and circumstances under which one might be more appropriate than another. Contracting officers must examine the **circumstances of the change** and its **effect on the basic contractual arrangement**, and **select the approach that best preserves the intent of the original agreement.**

Individual Adjustment Method

With this method the **effects** of the **change** on such elements as target cost, minimum and maximum fee, and ceiling price are **determined individually** and **negotiated separately.** In effect, the entire contractual arrangement is renegotiated in essentially the same manner as the original agreement. The individual adjustment method is most appropriate where there is a high degree of technical or cost uncertainty in both the basic contract and the change, particularly a change made early in the life of the contract; where major changes in the cost of performance are involved; or where the degree of uncertainty of the new arrangement is significantly different from the original arrangement.

This method has the advantage of giving greater flexibility to tailor the adjustment to fit the effect of the change on each element of the incentive arrangement. The procedure can, however, be time consuming and expensive administratively, and care must be taken not to allow the contractor to "get well" through the new negotiations.

Severable Change Method

With this method, the change is **negotiated separately** from the basic contract and **added** to the **contract** as a package. This method is appropriate where the changed effort is such that it can be separated from the incentive provisions of the original contract and be treated as a separate agreement. Thus, where the changed effort permits a completely different pricing arrangement from that in the basic contract, most commonly where the basic contract is CPIF, but the change can be priced on a FFP basis, the severable change method may be used.

This method allows for accurate adjustment in cases where the changed effort bears a substantial difference in effort or risk from the basic contract. It allows more meaningful negotiation of changes, while preserving the original agreement. It is mandatory, however, that the Government receive assurances that the costs involved in the changed effort can be isolated from the costs of the basic contractual effort, such as through the use of a subcontract or the use of a separate cost or profit center. If the costs involved with the severed effort cannot be identified and segregated from all other contract costs, this method cannot be used.

Constant Dollar Method

With the constant dollar method, as it applies to the cost-only CPIF, the **dollar relationships between the maximum and minimum fee and the target fee expressed in the basic contract are held constant.** Assume the negotiation of an equitable adjustment of a change order resulted in agreement to increase target cost by $10 and target fee by $1. The target cost and target fee are increased accordingly, and the maximum and minimum fees are also increased by $1, holding the dollar change constant.

Element	**Original Contract**	**Change**	**New Contract**
Target Cost	$100	+$10	$110
Target Fee	$ 8 (8%)	+$ 1	$ 9 (8.18%)
Maximum Fee	$ 14 (14%)	+$ 1	$ 15 (13.6%)
Minimum Fee	$ 2 (2%)	+$ 1	$ 3 (2.7%)
Share Ratio	80/20		80/20
Fee Swing	±$ 6		±$ 6
RIE	$ 70 - 130		$ 80 - 140
RIE Value	$ 60		$ 60

The value of the RIE remains constant. Since the RIE is, in large measure, the cost representation of technical uncertainty, an unchanged RIE implies that there is little technical uncertainty associated with the changed effort or that there has been little change in the overall technical uncertainty. This method could be appropriate in cases where the added effort is routine, and there is little technical uncertainty associated with it, as in a contract modification which requires the contractor to produce routine spare parts.

It should be noted, however, that while the RIE remains unchanged, there is a significant increase in the minimum fee. This needs to be watched because the cumulative effect of multiple changes using the constant dollar method could result in such an increase in the minimum fee as to negate its effect as an incentive.

Applications of this method to the FPI impacts the original contract ceiling price and its PTA cost. The **ceiling price** is increased by the same number of dollars as the **target cost** increases. The results in the FPI are similar to the CPIF. The value of the RIE between the target cost and the PTA remains the same, but the profit at the PTA increases significantly. The use of the constant dollar method with the FPI is appropriate under the same circumstances as with the CPIF, that is, when there are **small changes that do not significantly alter the program uncertainty.**

Constant Percentage Method

The constant percentage method disregards the dollar relationships of the original incentive provisions and preserves, instead, the **maximum and minimum fee percentage relationships.** Assume the negotiation of a contract modification resulted in agreement to increase contract cost by $10, and fee by $1. While the target cost and target fee are necessarily increased by the dollar amounts negotiated, the **maximum and minimum fees are adjusted to reflect the same percentage relationship to target cost as found in the original arrangement.**

Element	Original Contract	Change	New Contract
Target Cost	$100	+$10	$110
Target Fee (8.18%)	$ 8 (8%)	+$ 1	$ 9
Maximum Fee	$ 14 (14%)		$ 15.40 (14%)
Minimum Fee	$ 2 (2%)		$ 2.20 (2%)
Share Ratio	80/20		80/20
Fee Swing	±$ 6		+$ 6.40 to -$ 6.80
RIE	$ 70 - 130		$ 78 - 144
RIE Value	$ 60		$ 66

The RIE value has increased by $6, and the increase has resulted in a wider RIE ($34) on the overrun side than on the underrun side ($32). The increase in the RIE recognizes increased uncertainty in the contract by increasing the value of the RIE and increasing the range of the incentive more on the overrun side than the underrun side. The constant percentage method is appropriate when there are many and/or large dollar changes involved because this method accommodates changed conditions through the increase in the RIE. This is done mechanically, however, and not as the result of objective analysis; therefore it cannot be assumed to accurately reflect actual conditions.

Compared to the constant dollar method, this method increases the minimum fee at a much slower rate (+$.20 vs. $1), thus better preserving the minimum fee as a negative incentive.

When applied to the FPI, the constant percentage method causes the ceiling price to reflect the same percentage of target cost in the new contract as in the old contract.

Learning Objective F-2

Discuss Funding Provisions for Incentive Contracts

Learning Objective F-3

Describe the Financing Provisions for Incentive Contracts

Expenditure Control for Cost Reimbursement Incentive Contracts

Cost reimbursement contracts present the Government with one common and fundamental problem - controlling the level and nature of the contractor's expenditures. There are both practical and legal reasons underlying the need for expenditure control. Effective recordkeeping by the Government would be practically impossible without some definable limits on the amount of the Government's obligation. Further, if the Government obligates itself to pay the contractor's allowable costs without imposing some limitation on the overall amount, it is possible that the Government's obligation could exceed the amount considered proper for the project or might even exceed authorized amounts.

The Government has relied upon a variety of methods in attempting to limit or control contractor expenditures under cost type contracts. The principal methods and devices for accomplishing this control are discussed in the following material.

Standard Contract Clauses

Two standard contract clauses provide the primary means for controlling contractor expenditures. The Limitation of Cost clause is used when the contract is fully funded and the Limitation of Funds clause is used for incrementally funded contracts. In these clauses the Government relieves itself of the obligation to pay the contractor for overruns or unfunded expenditures unless additional costs or funds are added to the contract by the contracting officer.

Limitation of Funds

Every cost reimbursement contract has a clause concerning limitation of costs or funds. Limitation of funds pertains to contractual programs where the estimated total cost is incrementally funded. It is anticipated that the DOD will allot additional funds incrementally to the contract (contract modification) up to the full estimated cost cited in the contract schedule. Limitation of costs pertains to cost-reimbursement contracts which are fully funded (obligated at estimated cost in the schedule). For the most part, the clauses are identical, e.g., the contractor shall notify the contracting officer in writing whenever the contractor has reason to believe that the costs it expects to incur under the contract in the next 60 days, when added to all costs previously incurred, will exceed 75 percent of the estimated costs in the schedule[1] (or funds incrementally allotted). Additional comparisons are as follows:

[1] The 60-day period may be varied from 30 to 90 days and the 75 percent from 75 to 85 percent.

Limitation of Cost	Limitation of Funds
• Contractor provides a revised estimate of the estimated cost.	• No requirement.
• No obligation to reimburse for costs in excess of the estimated cost.	• No obligation to reimburse for costs in excess of the allotted amount in schedule.
• No requirement.	• 60 days before end of period in schedule contractor provides estimate of additional funds to continue performance.
• No requirement.	• If after notification, additional funds are not provided, contractor can request termination action.

Expenditure Control for Fixed-Price Incentive Contracts

Contractors who submit certified cost or pricing data for negotiated fixed price contracts in excess of $1 million may request flexible progress payments.

Use a flexible progress payment rate instead of the uniform customary rate if:

(a) The contractor requests the use of flexible progress payment rates prior to definitization or contract award. (If the contractor requests flexible progress payments after definitization or contract award, the contracting officer may, if warranted, grant their use.

(b) The contractor agrees to the requirements of DFARS 232.502-1 (S-71).

(c) The contractor will be awarded and performed entirely inside the United States and is possessions or territories.

(d) The contract contains the clause at FAR 52.232-16, "Progress Payments.." However, small business contractors may get flexible progress payments if they agree to use the clause at FAR 50.232-16 without its Alternate I.

Contractors shall furnish to the contracting officer cash flow data in the form and context specified for use in the DoD Cash Flow Computer Model. This data includes:

(a) Actual and projected incurred cost--broken down by element of cost and by month--for the duration of the contract:

(b) Float times for each element of cost;

(c) Dates and lag times for actual and projected progress payment and delivery payment receipts; and

(d) Associated contract price and profit percentage.

Contracting officers shall verify the cash flow data using the procedures normally used to verify contractor cost or pricing data, and establish the flexible progress payment rate during the negotiation of the contract price.

If any flexible progress payment rate is later determined to be overstated because factual data submitted in support of the rate computation was not current, accurate, and complete at the time of flexible progress payment rate was established, the flexible progress payment clause provides for--

(a) Reduction of the flexible progress payment rate; and

(b) Payment of interest.

The contracting officer will assess the interest charge on the amount of overpayment resulting from facts that were not current, accurate, or complete--whether or not the overpayment has been liquidated. Calculate the interest from the date of overpayment to the date of liquidation of the overpayment. In determining the amount of interest the contracting officer may determine an average overpayment amount and duration as the basis for the interest computation. Interest rates change periodically; therefore, calculate average amounts and durations separately for each interest period that has a different interest rate.

Administrative contracting officers (ACOs) are encouraged to establish advance agreement at contractor locations for float and payment lag times which are common to several contracts. Float and lag items may vary significantly from one contract to another due to variances in efficiency at different payment offices or due to differing procedures for high dollar-value contracts versus low dollar-value contracts. There, it may be appropriate to establish advance agreements on several different float and lag profiles to suit different contract situations.

The flexible progress payments clause provides for redetermination of the flexible progress payment rate whenever the computed investment percentage is more than two points above or below the specified minimum investment. When such a redetermination is made--

(a) Apply the new flexible progress payment rate to the next contractor progress payment request; and

(b) Adjust the unliquidated progress payment balance.

Either the Government or the contractor may request a rate review at any time to determine if the computed investment percentage is outside the investment tolerance specified in DFARS 230.502-1 (S-71).

Payment and Audit

Interim Payment

One of the critical differences between cost reimbursement and fixed price contracts is the relatively low working capital required under cost type contracts due to the regular payments based on the contractor's incurred costs. This payment process is implemented in the DOD through the Allowable Cost and Payment clause, FAR 52.216-7 (including the appropriate fee clause) which permit contractors to regularly submit invoices for incurred costs and require the Government to make prompt payment on the basis of such interim invoices.

The audit paragraph of the Allowable Cost and Payment clause makes interim payment "provisional" in the sense that the Government reserves the right to make adjustments in invoices if later audit of costs discloses that costs included in the invoice are not allowable.

Requests for interim payment are made on public voucher form SF1034. The total amount claimed and an indication that interim payment is being requested is inserted in SF1034. SF1034 is to contain a cumulative statement of incurred costs as well as the costs incurred during the period under consideration. A cost element breakdown is included for each of these figures. The contractor's requested fee payment for the period as well as the cumulative payment is also included.

The clause also requires contractors to submit information supporting the invoiced costs to the extent called for by the contracting officer or his representative. A contractor's failure to submit "adequate documentation" is grounds for disallowance of invoiced costs.

Payment of the fixed fee, if any, shall be made to the Contractor as specified in the Schedule. In addition to stating the total fee which may be earned, the Schedule may also specify a particular formula for determining when fees are to be paid. For example, schedules typically provide that the fee is to be paid in increments according to the achievement of certain milestones or as a percentage of completion of the work. When the schedule does not specify how the fee is to be paid, contractors are generally paid, at the time of submission of invoices for reimbursement of performance costs, that portion of the total fee which corresponds to the percentage of the total estimated costs which have been incurred. Note carefully that under the CPFF contract, the fee payment is limited in disbursement to 85% of the negotiated fixed fee.

Amounts for costs and fees are generally set forth separately in the contract schedule. The Limitation of Cost clause provides that the estimated costs set forth in the Schedule are "exclusive of any fee." Thus, fees are neither paid from not limited by the estimated costs, while performance costs are paid exclusively out of these estimated costs. This same separation of fees and costs is normally adopted in incrementally funded cost reimbursement contracts containing a Limitation of Funds clause under which funds periodically allotted to the contract at to be applied solely to reimburse performance costs.

Final Payment

Final payment occurs when the contractor and the Government agree that the contractual relationship between them has been performed. In final payment the Government seeks an assurance from the contractor in the form of a "release" that no previously unasserted or unreserved claims will be subsequently asserted, while the contractor seeks payment on the remainder of its claimed costs and fee.

Though what constitutes final payment may differ from case to case, the events which trigger final payment in incentive contracts are fairly consistent.* After a contractor has completed work under the cost reimbursement incentive contract, he must submit a completion invoice for payment within one year.

* Appendix E identifies the clauses which make the incentive provisions of the FPIF, FPIS and CPIF operable, while Appendix F contains an example of a CPAF award fee provision.

Paragraph (f) of the Allowable Cost and Payment clause provides that before final payment of any remaining allowable costs or fees, the contractor must also execute (1) an assignment to the Government of any refunds or rebates corresponding to items for which the contractor has been reimbursed, and (2) a release discharging the Government and its employees from any liabilities, obligations or claims arising out of or under the contract. Note that the Government may not properly insist upon an unconditional release as a prerequisite to final payment. When these provisions have been complied with, the Government will conduct a full audit of the contractor's performance and make final payment.

Under a fixed-price incentive, the final invoice is the final action, since the audit and negotiation precedes the final determination of final profit and price.

Audit of Incurred Costs

There are two principal organizations responsible for audit of Government contractors - the contracting agencies which have responsibility for conducting audits necessary for the normal formation and performance of Government contracts - and the Comptroller General, whose audit responsibility relates to surveillance of procurement practices for Congress.

Defense Contract Audit Agency (DCAA) auditors conduct periodic audits of contractor records and performance for purposes of testing the allowability of invoiced costs. In many cases, the costs being examined in such periodic audits will usually have already been paid to the contractor under interim payment procedures. Following the submission of a proposal for final negotiation under the FPI contract or completion of the work under a CPIF or CPAF contract, a comprehensive audit of contractor's costs and performance is conducted for purposes of making a final determination as to the allowability of claimed costs (including computation of a final overhead rate) as well as computation of the amount of the final fee or profit that has been earned.

CHAPTER G

CONCLUSION AND

REVIEW OF LEARNING OBJECTIVES

Chapter G - Conclusion and Review of Learning Objectives

Secretary Cann concludes:

> *There is no question that we, both industry and government, need realistic contracts. We also need a sound understanding of each other's needs and limitations, and meetings like this are essential to this process. We need a common sense approach to contracts and program definition. I hope that "competitive phased pricing" is a step is that direction.*
>
> *Our common goal is to build systems that are within the limits of affordable technology. Competitive Phased Pricing is a step is this direction. Current realities and the fiscal environment require commitment to quality. This requires attention by all involved, contracting officers, engineers, program managers and legal council to increase efficiencies; any attention to cost; define and reduce risk; and, using a team approach, analyze and discuss all issues and alternatives. I firmly believe that American industry is ready and able to produce quality systems that meet fleet needs and provide the best value for the investment while remaining affordable. It will take the efforts of all of us to carry this out.*
>
> *That, ladies and gentlemen is the challenge of the nineties. I know that by working together for a common goal it is achievable, and that companies that are forward looking and willing to produce a quality product at an affordable price will thrive even in today's shrinking defense marketplace.*

This course has provided an in-depth discussion of key issues surrounding the application and structure of incentive contracts. For those students who require additional attention to the subject matter, the book should be revisited for independent study.

The learning objectives are restated on the following page to reinforce what you are taking away from the course as learned knowledge.

1. Conceptualize the Importance and Relevance of the Incentive Contract.
2. Describe the Incentive Contract.
3. Comprehend the Objective Incentive.
4. Comprehend the Subjective Incentive.
5. Identify the Goals of Incentive Contracts.
6. Identify the Conditions that Restrict Selection of an Incentive Contract.
7. Distinguish Among the Types of Incentive Contracts.
8. Develop Profit/Fee Adjustment Formula.
9. Structure Cost-Only Incentive Contracts.
10. Generate Graphic Models for the Cost-Only Incentive Contracts.
11. Structure the Multiple-Incentive Contract.
12. Comprehend the Award Fee Contract.
13. Implement Procedures for Changing Incentive Contracts.
14. Discuss Funding Provisions for Incentive Contracts.
15. Describe Financing provisions for Incentive Contracts.

CASES

Case 1:

The McCourt/Beegle Dialogue

Case 2:

The Hi-Rate Company Contract

Case 1

The McCourt/Beegle Dialogue

The following is an excerpt of a conversation between Bob McCourt and Herb Beegle, contract specialist:

McCOURT: Well, we've decided we should put an award fee provision in the Phase I contract. It just doesn't make sense -- an award fee clause for a job like that? What are we going to evaluate--technical performance in solving design problems? Let's face it, we're buying technical capability under this contract; and any time we attempt to evaluate performance, we're bound to end up evaluating people. Maybe it would be different if we were buying a final product--a ship or a booster-- but we're not. If we start trying to evaluate personal performance, aren't we just one step closer to a "body shop" operation?

BEEGLE: I'd think so.

McCOURT: I just don't see the payoff from an award fee approach. It seems to me that any incentive plan that's going to work has to be both specific and objective. The contractor has to know before he starts to work just what he's going to operate or he has no way of knowing how he should conduct his work to earn the incentive. Without firm guidelines, the whole thing becomes sort of a blindman's bluff.

BEEGLE: That's true.

McCOURT: And if we can, in fact, come up with guidelines that specific, we should write them into the contract and provide a formula for their application. Then the contractor will know exactly what he's expected to do, and there won't be any complaints of bias.

BEEGLE: In that case, we'd have a regular incentive type contract--a CPIF or FPI contract--wouldn't we, Bob?

McCOURT: Right, Herb. The contract would specifically state, for example, that the contractor would share at a specific rate in all cost savings -- and cost overruns -- or that the contractor would be paid x number of dollars for each day or week the delivery schedule was shortened.

BEEGLE: Well, we couldn't do <u>that</u> in Phase I contract, could we?

McCOURT: Certainly not, and that's precisely what I'm getting at, Herb. Apparently, everyone agrees that the work statement in this contract has got to be very broad if the contractor is going to be of any use to us. In effect, we've specified that the contractor provide capability in advanced airborne weapon design and testing. Now, how in the world can we establish specific evaluation criteria in the contract, when we ourselves don't really know what the technical solutions should be? Oh, I guess we could come up with some general criterion like "responsiveness to Navy requests", but how can you evaluate responsiveness in an objective manner?

BEEGLE: You can't.

McCOURT: Of course not. And, frankly, I can't see why an intelligent contractor would ever go along with an award fee provision in a case like this. I suppose a firm might agree to an award fee if it's hungry enough or if it's satisfied with the base fee and thinks any award fee would be grabby. Or even with a minimal base fee, it might figure that the Navy is going to pay some award fee--if only to avoid an argument or a claim. But if these are the contractor's reasons for accepting an award fee arrangement, then we might as well forget the whole thing in the beginning.

BEEGLE: You've got a point there, Bob.

McCOURT: Herb, I can see that you and I think alike on this issue.

Questions

1. What is an award fee contract? How does it differ from other forms of incentive contracts? Be specific. What are its primary advantages and disadvantages?

2. When should an award fee contract be used?

3. Who should decide when to use an award fee provision? How would this decision be implemented? What are the basic steps involved in setting up an award fee plan?

Case 2

The Hi-Rate Company Contract

One day in early August 1991, Bill Raymond, Deputy Chief of the Contracts Management Branch, Naval Air Weapons Office, excitedly opened the large mailing envelope just placed on his desk by his secretary. Inside was a copy of the Design-to-Cost (DTC) Special Provisions of the Army's advanced development contract for the SVM propulsion system.

One of Raymond's current responsibilities was to draft the Award Fee provisions of an upcoming Navy contract action and he had made requests to several present and former associates for any assistance they might be able to give, explaining that his knowledge of the subject was somewhat sketchy.

The Army provisions were sent by a former colleague, Frank LoPresti, who had attached a note to the documents expressing his willingness to help Raymond, and recommending the provisions (see Exhibit I) as a basic guideline for use in the Navy program.

After a thorough reading of the material, Raymond felt confident that Award Fee concepts could be incorporated contractually into the Navy's program with little difficulty and it appeared to be a substantial improvement over a straight CPFF arrangement.

- Evaluate the Award Fee provisions in Exhibit I and be prepared to discuss their strong and weak features.

EXHIBIT I

SPECIAL PROVISIONS

1. DESIGN-TO-COST

a. Objective. An objective of this contract is the successful development and demonstration of a propulsion system for a medium lift helicopter that can be produced at the lowest possible production and life cycle cost. Therefore, in recognition of this objective, the Contractor shall place maximum emphasis on cost reduction through improved maintainability, reliability and economical design features. It is agreed and established that the Hi-Rate production engine shall be capable of being produced at an average recurring cost of $400,000 based on assumed production total quantity of 800 units at a rate of approximately 10 per month. The engine recurring cost includes recurring engineering direct labor and applicable overhead, manufacturing direct labor and applicable overhead, quality assurance direct labor and applicable overhead, general and administrative overhead, material and profit on recurring cost only, associated with production and including the cost for installation of Government-furnished equipment, if any. Manufacturing costs such as tooling, nonrecurring engineering, GSE, if any, and data are excluded.

(1) The design to Average Unit Production Cost shall be computed using the recurring engine cost estimated for the first production engine produced on an 90.0 percent log linear cumulative average learning curve over the total assumed production quantity of 800 engines. For the purpose of this computation, engine number one shall be the first production engine.

(2) An equitable adjustment in this cost objective will be made for any change in the work, including quantity and schedule, which impacts on the average engine production cost objective before the computation anticipated by this provision is made.

(3) The Implicit Price Deflator for the Total Gross National Product (index base 1980--100) published by the Department of Commerce, Bureau of Economic Analysis, as reported periodically in the United States Department of Commerce Publication entitled "Business Conditions Digest" shall be used to adjust current year dollars on a total unit basis as defined in paragraph 1.a. above.

b. Award Fee. If the Government evaluates and determines that the Contractor is making adequate progress toward designing an engine that can be quantity produced for a unit estimate of $400,000 or less, consistent with the program objectives stated in this contract, the Contractor shall be paid an award fee in an amount to be determined by the Government.

(1) Fee Amount. The maximum award fee available for payment under this special provision is $1,450,000, allocated to the following two award fee periods:

(a) First Fee Period. The amount of $450,000 is available for the first award fee period which commences on the effective date of this contract (1 February 1992) and continues through 31 January 1993. Any portion of the $450,000 fee not earned by the Contractor in this first period shall be added to the award fee amount designated for the second fee period.

(b) Second Fee Period. The amount of $1,000,000 (plus any remaining first period fee) is available for the second period which period commences on 1 February 1993 and continues through 31 January 1994.

(2) Fee Payment. Payment of any earned award fee to the Contractor under this contract shall not be subject to the provision of the clauses of the contract entitled "Allowable Cost, Incentive Fee, and Payment" and "Termination." The amount of any award fee awarded is subject to the "Limitation of Funds" clause of this contract.

c. Award Fee Evaluation. The award fee earned shall be determined subjectively by the Government based upon the Contractor's performance in the technical, cost and management areas as it relates to the Design-To-Cost objective in accordance with the following:

(1) Criteria

(a) Effective technical and design cost trade-offs.

(b) Effective and efficient use of resources.

(c) Management of effort related to achieving and/or reducing the design to unit cost objective specified with emphasis on the further breakout of the design unit cost objective and the effective assignment of subgoals to various subcontractors and significant components.

(2) Submittal of Production Cost Estimates.

The Contractor shall validate his design to average unit production cost objective by submitting two separate production cost estimates. The first submittal shall be in February 1993. The second submittal shall be in February 1994. The design to average unit cost production objective set forth in paragraph 1.a. is based upon the cost categories and elements specified elsewhere in the contract and as further defined in Regulation B-76. The design to average unit production cost estimates to be submitted shall include only those costs identified in paragraph 1.a. and shall also be based on the other factors specified in that paragraph. The Contractor's estimates must be submitted on SF 1411, with substantiating data. Costs shall be provided to the third level of the Contractor's production Work Breakdown Structure (WBS). This WBS shall be in accordance with MIL-STD-881 and must be submitted with each cost estimate.

(3) Fee Determining Official.

The Fee Determining Official shall be the Commanding General, Support Command.

(4) Award Fee Evaluation Board.

The Contractor's performance shall be continuously monitored by the Award Fee Evaluation Board which shall consists of:

Chairman--Hi-Rate Project Manager or Deputy Project Manager

Members--Director, Directorate of Procurement and Production or Deputy Director

Chief, Legal Office or Deputy Chief

Chief, Hi-Rate Technical Division

Three additional members to be appointed by the Chairman

(5) Award Fee Factors.

Specified award fee factors may be established and specified for either or both evaluation periods, provided that the Contractor is notified at least 30 days after the beginning of the first evaluation period or at least 15 days prior to the beginning of the second evaluation period.

(6) Award Fee Progress Report.

At each Quarterly Review the Contractor shall provide a detailed description of his performance during the quarter being evaluated with specific reference to his efforts and accomplishments in relation to the evaluation criteria. The Award Fee Evaluation Board will independently review the Contractor's performance during the quarter and will record its findings for use in evaluating the total award fee evaluation period. The Board's quarterly findings and evaluation thereof shall be furnished to the Contractor through the Contracting Officer.

d. <u>Fee Determination</u>

(1) First Award Fee Evaluation Period. The award fee payment for this evaluation period shall be based on the Government's subjective assessment of the Contractor's performance during the period. The assessment will be a function of how well the Contractor has demonstrated progress in either achieving, maintaining, or reducing the average design to production unit cost objective. The more successful the Contractor is in demonstrating progress in either achieving, maintaining or reducing the unit cost objective defined in paragraph 1.a. above, the more award fee he will earn.

(2) Second Award Fee Evaluation Period. The award fee payment for this evaluation period shall also be based on the Government's subjective assessment of the Contractor's performance during the period. The amount of the fee to be paid will be based on how well the Contractor has maintained or reduced the average design to production unit

cost objective. The more the Contractor is able to reduce the design to production unit cost objective the more award fee he will earn. In determining the amount of award fee the Government will also consider the Contractor's performance in other areas which could have a material impact on the Life Cycle Program Cost.

e. <u>Administration</u>

(1) The Government's determination of the amount of award fee earned by the Contractor shall be unilateral. The determination shall be effected by a change order to this contract signed by the Contracting Officer. This determination shall be binding on both parties and shall not be subject to appeal under the "Disputes" clause of this contract. The Contractor may invoice for the award fee determined upon receipt of the administrative change order.

(2) If a follow-on Engineering Development contract is awarded to the Contractor, it is agreed that the design to production cost established in that contract shall be no more than the design to unit production cost on which the award fee for the second evaluation period was based.

(3) Nothing contained herein shall be construed to mean that the Government guarantees that and Engineering Development or a production contract will be awarded to the Contractor.

PRACTICAL EXERCISES

Practical Exercise 1

To aid in analyzing the cost and profit relationships of various contract types, a graphic analysis method has been developed. The technique is useful for making comparisons between alternative proposals under different contract pricing arrangements, and is particularly valuable for interpreting the effects of various share plans under incentive contracts. In addition, the graphic technique is useful in negotiations since it can be used to develop and visualize mutually acceptable compromise positions.

A graphic presentation of cost/profit relationships is done on arithmetic graph paper. Costs are plotted on the horizontal axis, scaled in dollars; profits (or fees) are plotted on the vertical axis, also scaled in dollars. Using at least two plot points, a line can be developed that describes the cost/profit relationship for any contract. By looking at the diagram, the profit at any assumed cost can be determined since any point along the line represents a price which is equal to the sum of cost and profit. The entire line is called the share line, sharing arrangement, or share plan of the contract or offer. Plotting offers and counter-offers on a single sheet of graph paper may be helpful to the negotiator in understanding the impact of different share plans and resolving pricing issues.

Part A

Incentive Share Lines

Incentive contracts use share lines in which the contractor's share is somewhere between zero and 100 percent. Under an 80/20 share line the contractor would receive $.20 additional profit for every $1.00 by which he underran the target cost. Conversely, his profit would be reduced by $.20 for every $1.00 that he overran the target cost. For example, at a target cost of $100,000 and a target profit of $9,000, the 80/20 share line can be graphed as follows:

- Establish a reference point on the graph at the intersection of target cost and target profit. Label this point as Point A.

- Establish a second point on the graph by assuming a final cost outcome either over or under the target cost and then calculating the profit that would be earned. For example, if final costs were $120,000, the contractor would have overrun target cost by $20,000. Since he shares 20 percent in all overruns, his target net profit, then, would be $5,000 ($9,000 - $4,000). Plot this second point on the graph; label it as Point B.

- Draw a line through Points A and B. This line is the 80/20 share line specified in the contract.

Part B

Fixed-Price-Incentive Fee Contract

Situation 1

The cost/profit relationships of FPIF contracts are determined by a share line and a ceiling price.

- On a blank sheet of graph paper, plot the following FPIF contract:

Target Cost:	$110,000
Target Profit:	$ 12,000
Ceiling Price:	$135,000
Share Ratio:	80/20

- In the contract you have plotted, at what cost does the contractor assume complete risk for further overruns?

- What is the contractor's profit on the contract you graphed if final costs equal $90,000? $120,000?

Situation Two

- On a blank sheet of graph paper, plot the following FPIF contract:

Target Cost:	$100,000
Target Profit:	$ 10,000
Ceiling Price:	$125,000
Share Ratio:	100/0 within plus or minus 2 percent of target cost; 80/20 for costs greater or lesser than plus or minus 2 percent from target cost.

- At what cost does the contractor assume total responsibility for further overruns?

- At what cost does the contractor make 0% profit?

- What is the contractor's profit if final costs equal $85,000? $98,000?

- What percentage of actual costs would his profit be if his actual costs were $87,000?

Situation Three

The following elements of an FPIS contract have been negotiated:

• Initial Target Cost	10,000,000
• Initial Target Profit	8,000,000
• Initial Sharing Formula	80/20
• Ceiling on Firm Target Profit	1,200,000
• Floor on Firm Target Profit	400,000
• Ceiling Price	13,400,000

At firm-up, negotiations resulted in an agreement of $11,500,000 for the firm target cost.

- What is the firm target profit?

Practical Exercise 2

Commander George had been involved in negotiations for a firm-fixel-price (FFP) contract for 10 patrol boats. These boats are to travel at a speed of 60 knots for 1,000 miles. The contractor does not want to settle on an FFP basis because of production uncertainties. Commander George proposed the following as an alternative to the FFP contract:

Target Cost:	$11,000,000
Target Profit:	$ 1,320,000
Ceiling Price:	$13,750,000
Share Ratio:	80/20

Using the graph paper in the back of the text, graph the arrangement. What is the PTA and the profit at the PTA?

The contractor accepts the Commander's proposed target cost but wants a target profit of $1,400,000 and a ceiling price of $14,200,000. The Commander agrees to the arrangement but wants a 70/30 sharing arrangement. The contractor agrees. Based on this settlement what is the PTA?

Practical Exercise 3

The ABC Torpedo Company last built a torpedo in 1965. They have been a mobilization base contractor and have signed agreements periodically to produce torpedoes in the event the Department of Defense calls upon the mobilization base to produce. ABC retained the equipment even though it is used to produce World War II type torpedoes.

The Navy is in the process of negotiating a small torpedo contract with ABC but it requires them to upgrade their equipment. ABC Torpedo Company is not willing to accept a firm-fixed-price contract, but is willing to consider an FPIF contract. Mr. John Lindblad, the negotiator for ABC proposed the following arrangement:

Target Cost (per torpedo):	$100,000	
Target Profit	$ 11,500	
Ceiling Price	$145,000	
Share Ratio	100/0	within plus or minus 3% of target cost; 75/25 for cost greater than plus or minus 3% from target cost.

Given this arrangement, what is the profit at the PTA?

Graph the above arrangement on paper provided by the instructor.

The Navy objected to these features for reasons not disclosed and countered with the following:

Target Cost	$110,000
Target Profit	$ 10,000
Ceiling Price	$137,000
Share Ratio	60/40

Graph the Navy's proposal. How does this compare with the contractor's proposal?

Practical Exercise 4

Cost Plus Incentive Fee (CPIF Contracts)

The cost/fee relationships in CPIF contracts are determined by a combination of a share line plus a maximum fee and a minimum fee.

Situation 1

- On a blank sheet of graph paper, plot the following CPIF contract:

Target Cost:	$90,000
Target Fee:	$ 8,000
Maximum Fee:	$11,000
Minimum Fee:	$ 1,000
Share Plan:	80/20

- For the contract you have graphed, what is the contractor's fee if the final cost equals $120,000? $75,000?

Situation Two

GTN, Inc., a manufacturer of metal parts for the TBF aircraft, was engaged in negotiations with the Naval Air Defense Project Manager. The Navy was pushing for a firm-fixed-price contract for the development stage of the project. The contractor was concerned with many refinements necessary to stabilize the design and suggested that a CPIF contract be negotiated.

GTN's estimated cost was $8,750,000. The Navy's evaluation for this estimate was $8,200,000. GTN was willing to negotiate a CPIF contract with a target cost of $8,475,000 and a target fee of $847,500. The Navy indicated this arrangement was acceptable but wanted the incentive to stop at $7,345,000 on the underrun side and $11,300,000 on the overrun side. The Navy also indicated that they wanted a single sharing formula for 70/30. Reluctantly the president of GTN agreed to the Navy's terms.

- Graph the Navy's proposal on a blank sheet of graph paper provided by the instructor.

- What is the maximum fee?

- What is the minimum fee?

- What is the RIE?

- What is the fee swing or fee pool?

Practical Exercise 5

The Navy was tasked with a mission to develop a base for a vehicle that could investigate satellite stations. This included logistics, tracking, data accumulation and reduction, and maintenance associated with the mission. A CPAF contract was awarded with an estimated total contract cost of $1.7 million over a three-year period. It contained a base fee of 2% of estimated cost and a maximum fee of 10%.

The implementation plan consisted of the following stages:

- Survey
- Analysis
- Hardware integration
- Testing
- Acceptance

Survey and analysis were expected to run 40 percent of the total cost. Hardware integration and testing were expected to run 55 percent of the total, while the balance of 5 percent was set aside for acceptance, including necessary corrective work.

The contract provides for six performance periods and equal distribution of the available fee values.

Using the chart on page E-65 what is the value of award fee earned given that the score was 74?

Practical Exercise 6

Given the following CPIF contract and an additive change of $30,000 carrying a fee of $3,000, calculate the impact of this change by the constant dollar method and by the constant percentage method.

Original Contract

Target Cost	$100,000
Target Fee	$ 8,000
Maximum Fee	$ 12,000
Minimum Fee	$ 1,000
Share Ratio	80/20 for underruns 70/30 for overruns
Fee Swing	$ 6
RIE	$70 - 130
RIE Value	$ 60

	Constant Dollar Method		Constant Percentage Method	
Element	Change	Revised Contract Values	Change	Revised Contract Values
Target Cost				
Target Fee				
Maximum Fee				
Minimum Fee				
Share Ratio				
Fee Swing				
RIE				
RIE Value				

Practical Exercise 7

Structuring Multiple-Incentive Contracts

Situation One

On a blank sheet of graph paper, plot the sharing arrangement of the following multiple incentive contract:

Target Cost:	$100,000	
Target Fee:	$ 7,000	
Maximum Fee:	$ 15,000	
Minimum Fee:	$ 1,000	
Share Plan:	85/15 for underruns	
	90/10 for overruns	
Incentive Matrix:	Cost	± $3,000
	Performance	± $3,000
	Delivery	± $2,000

- What is the effect on target fee of a $20,000 cost overrun? Of a $10,000 cost underrun?

- What is the fee swing?

- The cost RIE?

Situation Two

In preparation for structuring a CPIF multiple incentive contract, estimates have been made as follows:

Target Cost:	$10,000,000
Target Fee:	$ 500,000
Maximum Fee:	$ 1,400,000
Minimum Fee:	$ 100,000

Incentive Element	Best Achievable	Target	Minimum Acceptable
Cost	$ 7,500,000	$10,000,000	$12,500,000
Schedule	18 months	20 months	22 months
Weight	110 pounds	130 pounds	150 pounds

Value Statement: Each two-month change in schedule is worth $250,000.

Each 10-pound change in weight is worth $125,000.

Determine the appropriate fee swing for each incentive element.

Practical Exercise 8

On 12 April 1990, Techtronics, Inc., was awarded a $2.2M CPAF contract to study certain biochemical problems for the biochemical group at the Office of the Chief of Naval Research. The study was to be completed by January 1991. A few days after award of the contract, but before Techtronics had begun the work, Dr. Lawrence Abbott, head of the group, wrote to the company asking it to hold up its study until he could complete an investigation of his own. Dr. Abbott said he felt that his study would add greatly to the state-of-the-art, and would allow Techtronics to go far beyond the scope originally intended by the contract.

Hearing nothing further from Dr. Abbott, Techtronics wrote to the contracting officer at ONR in August to inquire about the status of the doctor's study, and the disposition of its own contract. In answer, the contracting officer informed Techtronics that Dr. Abbott was no longer with ONR that he knew nothing of a study the doctor was conducting, and that he was surprised to learn that the company had not been working on the contract.

In November 1990, the contractor received a second letter from ONR. This letter, from Dr. Abbott's successor, said that Dr. Abbott's study had no bearing on the work and directed Techtronics to proceed with the study as outlined in the original contract.

- How did this situation arise? What should Techtronics do now? What would have been the proper procedure?

Practical Exercise 9

The Navy had generated a requirement for systems engineering and technical direction services in connection with a communications satellite program. Because of the nature of the requirement, the Navy realized that there would be some difficulty in controlling the contractor's costs and ensuring the application of proper levels of talent to the work, in proper increments. Normally in performing such services, the contractor exercised his own discretion in selecting the talent levels to be applied and the rate of application. Navy requirements personnel wanted some way of ensuring that the contractor's level of effort would parallel the desired expenditure rate. Therefore, their PR indicated that provision should be made in the contract to serve (i) as a management tool for determining and controlling contractor rate of performance, expenditure of funds, and manpower utilization and (ii) as a gauge for determining whether the contractor had earned his fixed fee.

After reviewing the PR, the contracting office was not clear as to the meaning of "controlling the contractor's rate of performance, expenditure of funds, and manpower utilization" in relation to the requirement. The explanation received from the requirements personnel was that certain types of engineers and technicians would be needed for given periods of performance. They wanted some assurance that funds would not be consumed at more then the desired rate because of the use of more expensive, but unneeded, labor. They also wanted to make sure that the proper talent level within the labor categories required would be applied for the specified performance periods.

The RFP contained the following Level of Effort clause:

The contractor is to apply effort at the rate of 90 man-months per month for a period of 12 months. It is estimated that the rate of expenditure will not exceed $230,000 per month, including all direct and indirect costs.

What would you do if a voucher reflected an expenditure of effort of 97 man-months at a cost of $227,600?

APPENDIX A

Glossary

APPENDIX A - GLOSSARY

As a student of incentive contracting, your primary objective is to learn the basic terms of the trade. As in many professions, there are terms of the art whose definitions may differ somewhat from the vernacular. The following terms and definitions are taken from the Federal Acquisition Regulation (FAR). Where an exact definition has been extracted from a specific FAR reference, the reference is included in parentheses.

Fixed-Price Incentive Contract (FAR 16.204)
: A fixed-price incentive contract is a fixed-price contract that provides for **adjusting target profit** and **establishing the final contract price** by a **formula** based on the **relationship of final negotiated total cost to total target cost.**

Fixed-Price-Award-Fee Contract
: A fixed-price-award-fee contract, although not specifically authorized as an incentive contract in FAR 16.300, but permissible as a deviation under FAR 1.403 as outlined in FAR 16.102(b), can be used where it is desirable to include an **award-fee amount** for an **applicable provision of performance over and above the negotiated price (cost and profit).**

Cost-Plus-Incentive-Fee Contract (FAR 16.304)
: A cost-plus-incentive-fee contract is a cost-reimbursement contract that provides for an **initially negotiated fee** to be **adjusted** later by a **formula** based on the **relationship of total allowable costs to target costs.**

Cost-Plus-Award-Fee Contract (FAR 16.305)
: A cost-plus-award-fee contract is a cost-reimbursement contract that provides for a fee consisting of (a) a **base amount** (base fee) **fixed at inception** of the contract and (b) an **award amount** (award fee), based upon a **judgmental evaluation** by the Government, sufficient to provide **motivation for excellence in contract performance**.

Incentive Contract
: A contract type where the parties **share the performance risks** by negotiating arrangements which **alter** the contractor's **profit or fee based on the cost or quality of performance.**

Objective-type Incentive Contract
: An incentive contract where the final profit or fee is determined by the **application of a negotiated, predetermined formula.**

Subjective-type Incentive Contract	An incentive contract where the **final profit or fee** is determined by the Government's **appraisal** of the contractor's **performance.**
Cost Incentive	The incentive arrangement where the contractor's **profit, or fee, increases or decreases** as the **actual incurred costs fall below or above** the contract **target cost.**
Multiple Incentive	The incentive arrangement which establishes the contractor's **profit or fee** in **direct relationship to the value of the combined level of achievement** in technological progress, timely delivery and effective cost control.
Range of Incentive Effectiveness	The **range of probable cost outcomes** over which the incentive arrangement in the contract is **operative.**
Target Cost	The estimated cost of the contract as initially negotiated (FAR 52.216-10).
Target Fee	The fee initially negotiated on the assumption that this contract would be performed for a cost equal to the estimated cost initially negotiated (FAR 52.216-10).
Maximum Fee	The fee **value**, defined as a percentage of target cost, earnable as a **maximum** under a CPIF contract.
Minimum Fee	The fee **value**, defined as a percentage of target cost, earnable as a **minimum** under a CPIF contract.
Point of Total Assumption	The **cost** value where the incentive parameters of the **FPIF** contract become **inoperative** and the **FPIF** contract effectively converts to a FFP contract.
Share Ratio	The **ratio** of two numbers which identifies the Government's and the contractor's **numerical** shares of cost responsibility as measured from target cost.

APPENDIX B

FAR 16

PART 16

TYPES OF CONTRACTS

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PART 16

TYPES OF CONTRACTS

16.000 Scope of part.

This part describes types of contracts that may be used in acquisitions other than small purchases under Part 13. It prescribes policies and procedures and provides guidance for selecting a contract type appropriate to the circumstances of the acquisition.

SUBPART 16.1—SELECTING CONTRACT TYPES

16.101 General.

(a) A wide selection of contract types is available to the Government and contractors in order to provide needed flexibility in acquiring the large variety and volume of supplies and services required by agencies. Contract types vary according to (1) the degree and timing of the responsibility assumed by the contractor for the costs of performance and (2) the amount and nature of the profit incentive offered to the contractor for achieving or exceeding specified standards or goals.

(b) The contract types are grouped into two broad categories: fixed-price contracts (see Subpart 16.2) and cost-reimbursement contracts (see Subpart 16.3). The specific contract types range from firm-fixed-price, in which the contractor has full responsibility for the performance costs and resulting profit (or loss), to cost-plus-fixed-fee, in which the contractor has minimal responsibility for the performance costs and the negotiated fee (profit) is fixed. In between are the various incentive contracts (see Subpart 16.4), in which the contractor's responsibility for the performance costs and the profit or fee incentives offered are tailored to the uncertainties involved in contract performance.

16.102 Policies.

(a) Contracts resulting from sealed bidding shall be firm-fixed-price contracts or fixed-price contracts with economic price adjustment.

(b) Contracts negotiated under Part 15 may be of any type or combination of types that will promote the Government's interest, except as restricted in this part (see 10 U.S.C. 2306(a) and 41 U.S.C. 254(a)). Contract types not described in this regulation shall not be used, except as a deviation under Subpart 1.4.

(c) The cost-plus-a-percentage-of-cost system of contracting shall not be used (see 10 U.S.C. 2306(a) and 41 U.S.C. 254(b)). Prime contracts (including letter contracts) other than firm-fixed-price contracts shall, by an appropriate clause, prohibit cost-plus-a-percentage-of-cost subcontracts (see clauses prescribed in Subpart 44.2 for cost-reimbursement contracts and Subparts 16.2 and 16.4 for fixed-price contracts).

(d) No contract may be awarded before the execution of any determination and findings (D&F's) required by this part. Minimum requirements for the content of D&F's required by this part are specified in 1.704.

16.103 Negotiating contract type.

(a) Selecting the contract type is generally a matter for negotiation and requires the exercise of sound judgment. Negotiating the contract type and negotiating prices are closely related and should be considered together. The objective is to negotiate a contract type and price (or estimated cost and fee) that will result in reasonable contractor risk and provide the contractor with the greatest incentive for efficient and economical performance.

(b) A firm-fixed-price contract, which best utilizes the basic profit motive of business enterprise, shall be used when the risk involved is minimal or can be predicted with an acceptable degree of certainty. However, when a reasonable basis for firm pricing does not exist, other contract types should be considered, and negotiations should be directed toward selecting a contract type (or combination of types) that will appropriately tie profit to contractor performance.

(c) In the course of an acquisition program, a series of contracts, or a single long-term contract, changing circumstances may make a different contract type appropriate in later periods than that used at the outset. In particular, contracting officers should avoid protracted use of a cost-reimbursement or time-and-materials contract after experience provides a basis for firmer pricing.

(d) Each contract file shall include documentation to show why the particular contract type was selected. Exceptions to this requirement are (1) small purchases under Part 13, (2) contracts on a firm fixed-price basis other than those for major systems or research and development, and (3) awards on the set-aside portion of sealed bid partial set-asides for small business or labor surplus area concerns.

16.104 Factors in selecting contract types.

There are many factors that the contracting officer should consider in selecting and negotiating the contract type. They include the following:

(a) *Price competition.* Normally, effective price competition results in realistic pricing, and a fixed-price contract is ordinarily in the Government's interest.

(b) *Price analysis.* Price analysis, with or without competition, may provide a basis for selecting the contract type. The degree to which price analysis can provide a realistic pricing standard should be carefully considered. (See 15.805-2.)

(c) *Cost analysis.* In the absence of effective price competition and if price analysis is not sufficient, the cost estimates of the offeror and the Government provide the bases for negotiating contract pricing arrangements. It is essential that the uncertainties involved in performance and their possible impact upon costs be identified and evaluated, so that a contract type that places a reasonable degree of cost responsibility upon the contractor can be negotiated.

(d) *Type and complexity of the requirement.* Complex requirements, particularly those unique to the Government, usually result in greater risk assumption by the Government. This is especially true for complex research and development contracts, when performance uncertainties or the likelihood of changes makes it difficult to estimate performance costs in advance. As a requirement recurs or as quantity production begins, the cost risk should shift to the contractor, and a fixed-price contract should be considered.

(e) *Urgency of the requirement.* If urgency is a primary factor, the Government may choose to assume a greater proportion of risk or it may offer incentives to ensure timely contract performance.

(f) *Period of performance or length of production run.* In times of economic uncertainty, contracts extending over a relatively long period may require economic price adjustment terms.

(g) *Contractor's technical capability and financial responsibility.*

(h) *Adequacy of the contractor's accounting system.* Before agreeing on a contract type other than firm-fixed-price, the contracting officer shall ensure that the contractor's accounting system will permit timely development of all necessary cost data in the form required by the proposed contract type. This factor may be critical when the contract type requires price revision while performance is in progress, or when a cost-reimbursement contract is being considered and all current or past experience with the contractor has been on a fixed-price basis.

(i) *Concurrent contracts.* If performance under the proposed contract involves concurrent operations under other contracts, the impact of those contracts, including their pricing arrangements, should be considered.

(j) *Extent and nature of proposed subcontracting.* If the contractor proposes extensive subcontracting, a contract type reflecting the actual risks to the prime contractor should be selected.

16.105 Solicitation provision.

The contracting officer shall complete and insert the provision at 52.216-1, Type of Contract, in requests for proposals and in requests for quotations unless the solicitation is for (a) a small purchase (see Part 13) or (b) information or planning purposes (see 15.405).

SUBPART 16.2—FIXED-PRICE CONTRACTS

16.201 General.

Fixed-price types of contracts provide for a firm price or, in appropriate cases, an adjustable price. Fixed-price contracts providing for an adjustable price may include a ceiling price, a target price (including target cost), or both. Unless otherwise specified in the contract, the ceiling price or target price is subject to adjustment only by operation of contract clauses providing for equitable adjustment or other revision of the contract price under stated circumstances.

16.202 Firm-fixed-price contracts.

16.202-1 Description.

A firm-fixed-price contract provides for a price that is not subject to any adjustment on the basis of the contractor's cost experience in performing the contract. This contract type places upon the contractor maximum risk and full responsibility for all costs and resulting profit or loss. It provides maximum incentive for the contractor to control costs and perform effectively and imposes a minimum administrative burden upon the contracting parties.

16.202-2 Application.

A firm-fixed-price contract is suitable for acquiring commercial products or commercial-type products (see 11.001) or for acquiring other supplies or services on the basis of reasonably definite functional or detailed specifications (see 10.001) when the contracting officer can establish fair and reasonable prices at the outset, such as when—

(a) There is adequate price competition;

(b) There are reasonable price comparisons with prior purchases of the same or similar supplies or services made on a competitive basis or supported by valid cost or pricing data;

(c) Available cost or pricing information permits realistic estimates of the probable costs of performance; or

(d) Performance uncertainties can be identified and reasonable estimates of their cost impact can be made, and the contractor is willing to accept a firm fixed price representing assumption of the risks involved.

16.203 Fixed-price contracts with economic price adjustment.

16.203-1 Description.

A fixed-price contract with economic price adjustment provides for upward and downward revision of the stated contract price upon the occurrence of specified contingencies. Economic price adjustments are of three general types:

(a) *Adjustments based on established prices.* These price adjustments are based on increases or decreases from an agreed-upon level in published or otherwise established prices of specific items or the contract end items.

(b) *Adjustments based on actual costs of labor or material.* These price adjustments are based on increases or decreases in specified costs of labor or material that the contractor actually experiences during contract performance.

(c) *Adjustments based on cost indexes of labor or material.* These price adjustments are based on increases or decreases in labor or material cost standards or indexes that are specifically identified in the contract.

16.203-2 Application.

A fixed-price contract with economic price adjustment may be used when (i) there is serious doubt concerning the stability of market or labor conditions that will exist during an extended period of contract performance, and (ii) contingencies that would otherwise be included in the contract price can be identified and covered separately in the contract. Price adjustments based on established prices should normally be restricted to industry-wide contingencies. Price adjustments based on labor and material costs should be limited to contingencies beyond the contractor's control. For use of economic price adjustment in sealed bid contracts, see 14.407-4.

(a) In establishing the base level from which adjustment will be made, the contracting officer shall ensure that contingency allowances are not duplicated by inclusion in both the base price and the adjustment requested by the contractor under economic price adjustment clause.

(b) In contracts that do not require submission of cost or pricing data, the contracting officer shall obtain adequate information to establish the base level from which adjustment will be made and may require verification of data submitted.

16.203-3 Limitations.

A fixed-price contract with economic price adjustment shall not be used unless the contracting officer determines that it is necessary either to protect the contractor and the Government against significant fluctuations in labor or material costs or to provide for contract price adjustment in the event of changes in the contractor's established prices.

16.203-4 Contract clauses.

(a) *Adjustment based on established prices—standard supplies.* (1) The contracting officer shall, when contracting by negotiation, insert the clause at 52.216-2, Economic Price Adjustment—Standard Supplies, or an agency-prescribed clause as authorized in subparagraph (2) below, in solicitations and contracts when all of the following conditions apply:

(i) A fixed-price contract is contemplated.

(ii) The requirement is for standard supplies that have an established catalog or market price, verified using the criteria in 15.804-3.

(iii) The contracting officer has made the determination specified in 16.203-3.

(2) If all the conditions in subparagraph (a)(1) above apply and the contracting officer determines that the use of the clause at 52.216-2 is inappropriate, the contracting officer may use an agency-prescribed clause instead of the clause at 52.216-2.

(3) If the negotiated unit price reflects a net price after applying a trade discount from a catalog or list price, the contracting officer shall document in the contract file both the catalog or list price and the discount. (This does not apply to prompt payment or cash discounts.)

(b) *Adjustment based on established prices—semistandard supplies.* (1) The contracting officer shall, when contracting by negotiation, insert the clause at 52.216-3, Economic Price Adjustment—Semistandard Supplies, or an agency-prescribed clause as authorized in subparagraph (2) below, in solicitations and contracts when all of the following conditions apply:

(i) A fixed-price contract is contemplated.

(ii) The requirement is for semistandard supplies for which the prices can be reasonably related to the prices of nearly equivalent standard supplies that have an established catalog or market price, verified using the criteria in 15.804-3.

(iii) The contracting officer has made the determination specified in 16.203-3.

(2) If all conditions in subparagraph (b)(1) above apply and the contracting officer determines that the use of the clause at 52.216-3 is inappropriate, the contracting officer may use an agency-prescribed clause instead of the clause at 52.216-3.

(3) If the negotiated unit price reflects a net price after applying a trade discount from a catalog or list

price, the contracting officer shall document in the contract file both the catalog or list price and the discount. (This does not apply to prompt payment or cash discounts.)

(4) Before entering into the contract, the contracting officer and contractor must agree in writing on the identity of the standard supplies and the corresponding contract line items to which the clause applies.

(5) If the supplies are standard, except for preservation, packaging, and packing requirements, the clause prescribed in 16.203-4(a) shall be used rather than this clause.

(c) *Adjustments based on actual cost of labor or material.* (1) The contracting officer shall, when contracting by negotiation, insert a clause that is substantially the same as the clause at 52.216-4, Economic Price Adjustment —Labor and Material, or an agency-prescribed clause as authorized in subparagraph (2) below, in solicitations and contracts when all of the following conditions apply:

(i) A fixed-price contract is contemplated.

(ii) There is no major element of design engineering or development work involved.

(iii) One or more identifiable labor or material cost factors are subject to change.

(iv) The contracting officer has made the determination specified in 16.203-3.

(2) If all conditions in subparagraph (c)(1) above apply and the contracting officer determines that the use of the clause at 52.216-4 is inappropriate, the contracting officer may use an agency-prescribed clause instead of the clause at 52.216-4.

(3) The contracting officer shall describe in detail in the contract Schedule—

(i) The types of labor and materials subject to adjustment under the clause;

(ii) The labor rates, including fringe benefits (if any) and unit prices of materials that may be increased or decreased; and

(iii) The quantities of the specified labor and materials allocable to each unit to be delivered under the contract.

(4) In negotiating adjustments under the clause, the contracting officer shall—

(i) Consider work in process and materials on hand at the time of changes in labor rates, including fringe benefits (if any) or material prices;

(ii) Not include in adjustments any indirect cost (except fringe benefits as defined in 31.205-6(m)) or profit; and

(iii) Consider only those fringe benefits specified in the contract Schedule.

(d) *Adjustments based on cost indexes of labor or material.* The contracting officer should consider using an economic price adjustment clause based on cost indexes of labor or material under the circumstances and subject to approval as described in subparagraphs (1) and (2) below.

(1) A clause providing adjustment based on cost indexes of labor or materials may be appropriate when—

(i) The contract involves an extended period of performance with significant costs to be incurred beyond 1 year after performance begins;

(ii) The contract amount subject to adjustment is substantial; and

(iii) The economic variables for labor and materials are too unstable to permit a reasonable division of risk between the Government and the contractor, without this type of clause.

(2) Any clause using this method shall be prepared and approved under agency procedures. Because of the variations in circumstances and clause wording that may arise, no standard clause is prescribed.

16.204 Fixed-price incentive contracts.

A fixed-price incentive contract is a fixed-price contract that provides for adjusting profit and establishing the final contract price by a formula based on the relationship of final negotiated total cost to total target cost. Fixed-price incentive contracts are covered in Subpart 16.4, Incentive Contracts. See 16.403 for more complete descriptions and for application, limitations, and prescribed clauses for these contracts.

16.205 Fixed-price contracts with prospective price redetermination.

16.205-1 Description.

A fixed-price contract with prospective price redetermination provides for (a) a firm fixed price for an initial period of contract deliveries or performance and (b) prospective redetermination, at a stated time or times during performance, of the price for subsequent periods of performance.

16.205-2 Application.

A fixed-price contract with prospective price redetermination may be used in acquisitions of quantity production or services for which it is possible to negotiate a fair and reasonable firm fixed price for an initial period, but not for subsequent periods of contract performance.

(a) The initial period should be the longest period for which it is possible to negotiate a fair and reasonable firm fixed price. Each subsequent pricing period should be at least 12 months.

(b) The contract may provide for a ceiling price based on evaluation of the uncertainties involved in performance and their possible cost impact. This ceiling price should provide for assumption of a reasonable proportion of the risk by the contractor and, once established, may be adjusted only by operation of contract clauses providing for equitable adjustment or other revision of the contract price under stated circumstances.

16.205-3 Limitations.

This contract type shall not be used unless—

(a) Negotiations have established that (1) the conditions for use of a firm-fixed-price contract are not present (see 16.202-2), and (2) a fixed-price incentive contract would not be more appropriate;

(b) The contractor's accounting system is adequate for price redetermination;

(c) The prospective pricing periods can be made to conform with operation of the contractor's accounting system; and

(d) There is reasonable assurance that price redetermination actions will take place promptly at the specified times.

16.205-4 Contract clause.

The contracting officer shall, when contracting by negotiation, insert the clause at 52.216-5, Price Redetermination—Prospective, in solicitations and contracts when a fixed-price contract is contemplated and the conditions specified in 16.205-2 and 16.205-3(a) through (d) apply.

16.206 Fixed-ceiling-price contracts with retroactive price redetermination.

16.206-1 Description.

A fixed-ceiling-price contract with retroactive price redetermination provides for (a) a fixed ceiling price, and (b) retroactive price redetermination within the ceiling after completion of the contract.

16.206-2 Application.

A fixed-ceiling-price contract with retroactive price redetermination is appropriate for research and development contracts estimated at $100,000 or less when it is established at the outset that a fair and reasonable firm fixed price cannot be negotiated and that the amount involved and short performance period make the use of any other fixed-price contract type impracticable.

(a) A ceiling price shall be negotiated for the contract at a level that reflects a reasonable sharing of risk by the contractor. The established ceiling price may be adjusted only if required by the operation of contract clauses providing for equitable adjustment or other revision of the contract price under stated circumstances.

(b) The contract should be awarded only after negotiation of a billing price that is as fair and reasonable as the circumstances permit.

(c) Since this contract type provides the contractor no cost control incentive except the ceiling price, the contracting officer should make clear to the contractor during discussion before award that the contractor's management effectiveness and ingenuity will be considered in retroactively redetermining the price.

16.206-3 Limitations.

This contract type shall not be used unless—

(a) The contract is for research and development and the estimated cost is $100,000 or less;

(b) The contractor's accounting system is adequate for price redetermination;

(c) There is reasonable assurance that the price redetermination will take place promptly at the specified time; and

(d) The head of the contracting activity (or a higher-level official, if required by agency procedures) approves its use in writing.

16.206-4 Contract clause.

The contracting officer shall, when contracting by negotiation, insert the clause at 52.216-6, Price Redetermination—Retroactive, in solicitations and contracts when a fixed-price contract is contemplated and the conditions in 16.206-2 and 16.206-3(a) through (d) apply.

16.207 Firm-fixed-price, level-of-effort term contracts.

16.207-1 Description.

A firm-fixed-price, level-of-effort term contract requires (a) the contractor to provide a specified level of effort, over a stated period of time, on work that can be stated only in general terms and (b) the Government to pay the contractor a fixed dollar amount.

16.207-2 Application.

A firm-fixed-price, level-of-effort term contract is suitable for investigation or study in a specific research and development area. The product of the contract is usually a report showing the results achieved through application of the required level of effort. However, payment is based on the effort expended rather than on the results achieved.

16.207-3 Limitations.

This contract type may be used only when—

(a) The work required cannot otherwise be clearly defined;

(b) The required level of effort is identified and agreed upon in advance;

(c) There is reasonable assurance that the intended result cannot be achieved by expending less than the stipulated effort; and

(d) The contract price is $100,000 or less, unless approved by the chief of the contracting office.

SUBPART 16.3—COST-REIMBURSEMENT CONTRACTS

16.301 General.

16.301-1 Description.

Cost-reimbursement types of contracts provide for payment of allowable incurred costs, to the extent prescribed in the contract. These contracts establish an estimate of total cost for the purpose of obligating funds and establishing a ceiling that the contractor may not exceed (except at its own risk) without the approval of the contracting officer.

16.301-2 Application.

Cost-reimbursement contracts are suitable for use only when uncertainties involved in contract performance do not permit costs to be estimated with sufficient accuracy to use any type of fixed-price contract.

16.301-3 Limitations.

A cost-reimbursement contract may be used only when—

(a) The contractor's accounting system is adequate for determining costs applicable to the contract;

(b) Appropriate Government surveillance during performance will provide reasonable assurance that efficient methods and effective cost controls are used; and

(c) A determination and findings has been executed, in accordance with agency procedures, showing that (1) this contract type is likely to be less costly than any other type or (2) it is impractical to obtain supplies or services of the kind or quality required without the use of this contract type (see 10 U.S.C. 2306(c), 2310(b), and 2311 or 41 U.S.C. 254(b), 257(b), and 257(a)).

(d) See 15.903(d) for statutory limitations on price or fee.

16.302 Cost contracts.

(a) *Description.* A cost contract is a cost-reimbursement contract in which the contractor receives no fee.

(b) *Application.* A cost contract may be appropriate for research and development work, particularly with nonprofit educational institutions or other nonprofit organizations, and for facilities contracts.

(c) *Limitations.* See 16.301-3.

16.303 Cost-sharing contracts.

(a) *Description.* A cost-sharing contract is a cost-reimbursement contract in which the contractor receives no fee and is reimbursed only for an agreed-upon portion of its allowable costs.

(b) *Application.* A cost-sharing contract may be used when the contractor agrees to absorb a portion of the costs, in the expectation of substantial compensating benefits.

(c) *Limitations.* See 16.301-3.

16.304 Cost-plus-incentive-fee contracts.

A cost-plus-incentive-fee contract is a cost-reimbursement contract that provides for an initially negotiated fee to be adjusted later by a formula based on the relationship of total allowable costs to total target costs. Cost-plus-incentive-fee contracts are covered in Subpart 16.4, Incentive Contracts. See 16.404-1 for a more complete description and discussion of application of these contracts. See 16.301-3 for limitations.

16.305 Cost-plus-award-fee contracts.

A cost-plus-award-fee contract is a cost-reimbursement contract that provides for a fee consisting of (a) a base amount (which may be zero) fixed at inception of the contract and (b) an award amount, based upon a judgmental evaluation by the Government, sufficient to provide motivation for excellence in contract performance. Cost-plus-award-fee contracts are covered in Subpart 16.4, Incentive Contracts. See 16.404-2 for a more complete description and discussion of application of these contracts. See 16.301-3 and 16.404-2(c) for limitations.

16.306 Cost-plus-fixed-fee contracts.

(a) *Description.* A cost-plus-fixed-fee contract is a cost-reimbursement contract that provides for payment to the contractor of a negotiated fee that is fixed at the inception of the contract. The fixed fee does not vary with actual cost, but may be adjusted as a result of changes in the work to be performed under the contract. This contract type permits contracting for efforts that might otherwise present too great a risk to contractors, but it provides the contractor only a minimum incentive to control costs.

(b) *Application.* (1) A cost-plus-fixed-fee contract is suitable for use when the conditions of 16.301-2 are present and, for example—

(i) The contract is for the performance of research or preliminary exploration or study, and the level of effort required is unknown; or

(ii) The contract is for development and test, and using a cost-plus-incentive-fee contract is not practical.

(2) A cost-plus-fixed-fee contract normally should not be used in development of major systems (see Part 34) once preliminary exploration, studies, and risk

reduction have indicated a high degree of probability that the development is achievable and the Government has established reasonably firm performance objectives and schedules.

(c) *Limitations.* No cost-plus-fixed-fee contract shall be awarded unless—

(1) All limitations in 16.301-3 are complied with; and

(2) The agency head or designee has signed a determination and findings establishing the basis for application of the statutory price or fee limitation (see 15.903(d)).

(d) *Completion and term forms.* A cost-plus-fixed-fee contract may take one of two basic forms—completion or term.

(1) The completion form describes the scope of work by stating a definite goal or target and specifying an end product. This form of contract normally requires the contractor to complete and deliver the specified end product (e.g., a final report of research accomplishing the goal or target) within the estimated cost, if possible, as a condition for payment of the entire fixed fee. However, in the event the work cannot be completed within the estimated cost, the Government may require more effort without increase in fee, provided the Government increases the estimated cost.

(2) The term form describes the scope of work in general terms and obligates the contractor to devote a specified level of effort for a stated time period. Under this form, if the performance is considered satisfactory by the Government, the fixed fee is payable at the expiration of the agreed-upon period, upon contractor certification that the level of effort specified in the contract has been expended in performing the contract work. Renewal for further periods of performance is a new acquisition that involves new cost and fee arrangements.

(3) Because of the differences in obligation assumed by the contractor, the completion form is preferred over the term form whenever the work, or specific milestones for the work, can be defined well enough to permit development of estimates within which the contractor can be expected to complete the work.

(4) The term form shall not be used unless the contractor is obligated by the contract to provide a specific level of effort within a definite time period.

16.307 Contract clauses.

(a) The contracting officer shall insert the clause at 52.216-7, Allowable Cost and Payment, in solicitations and contracts when a cost-reimbursement contract (other than a facilities contract) is contemplated. If the contract is with an educational institution, modify the clause by deleting from paragraph (a) the words "Subpart 31.2" and substituting for them "Subpart 31.3." If the contract is with a State or local government, modify the clause by deleting from paragraph (a) the words "Subpart 31.2" and substituting for them "Subpart 31.6." If the contract is with a nonprofit organization other than an educational institution, a State or local government, or a nonprofit organization exempted under OMB Circular No. A-122, modify the clause by deleting from paragraph (a) the words "Subpart 31.2" and substituting for them "Subpart 31.7."

(b) The contracting officer shall insert the clause at 52.216-8, Fixed Fee, in solicitations and contracts when a cost-plus-fixed-fee contract (other than a facilities contract or a construction contract) is contemplated.

(c) The contracting officer shall insert the clause at 52.216-9, Fixed-Fee—Construction, in solicitations and contracts when a cost-plus-fixed-fee construction contract is contemplated.

(d) The contracting officer shall insert the clause at 52.216-10, Incentive Fee, in solicitations and contracts when a cost-plus-incentive-fee contract (other than a facilities contract) is contemplated.

(e)(1) The contracting officer shall insert the clause at 52.216-11, Cost Contract—No Fee, in solicitations and contracts when a cost-reimbursement contract is contemplated that provides no fee and is not a cost-sharing contract or a facilities contract.

(2) If a cost-reimbursement research and development contract with an educational institution or a nonprofit organization that provides no fee or other payment above cost and is not a cost-sharing contract is contemplated, and if the contracting officer determines that withholding of a portion of allowable costs is not required, the contracting officer shall use the clause with its Alternate I.

(f)(1) The contracting officer shall insert the clause at 52.216-12, Cost-Sharing Contract—No Fee, in solicitations and contracts when a cost-sharing contract (other than a facilities contract) is contemplated.

(2) If a cost-sharing research and development contract with an educational institution or a nonprofit organization is contemplated, and if the contracting officer determines that withholding of a portion of allowable costs is not required, the contracting officer shall use the clause with its Alternate I.

(g)(1) The contracting officer shall insert the clause at 52.216-13, Allowable Cost and Payment—Facilities, in solicitations and contracts when a cost-reimbursement consolidated facilities contract or a cost-reimbursement facilities acquisition contract (see 45.302-6) is contemplated.

(2) If a facilities acquisition contract is contemplated and, in the judgment of the contracting officer, it may be necessary to withhold payment of an amount to protect the Government's interest, the contracting officer shall use the clause with its Alternate I.

(h) The contracting officer shall insert the clause at 52.216-14, Allowable Cost and Payment—Facilities Use, in solicitations and contracts when a facilities use contract is contemplated.

(i) The contracting officer shall insert the clause at 52.216-15, Predetermined Indirect Cost Rates, in solicitations and contracts when a cost-reimbursement research and development contract with an educational institution (see 42.705-3(b)) is contemplated and predetermined indirect cost rates are to be used.

SUBPART 16.4—INCENTIVE CONTRACTS

16.401 General.

(a) Incentive contracts as described in this subpart are appropriate when a firm-fixed-price contract is not appropriate and the required supplies or services can be acquired at lower costs and, in certain instances, with improved delivery or technical performance, by relating the amount of profit or fee payable under the contract to the contractor's performance. Incentive contracts are designed to obtain specific acquisition objectives by—

(1) Establishing reasonable and attainable targets that are clearly communicated to the contractor; and

(2) Including appropriate incentive arrangements designed to (i) motivate contractor efforts that might not otherwise be emphasized and (ii) discourage contractor inefficiency and waste.

(b) When predetermined, formula-type incentives on technical performance or delivery are included, increases in profit or fee are provided only for achievement that surpasses the targets, and decreases are provided for to the extent that such targets are not met. The incentive increases or decreases are applied to performance targets rather than minimum performance requirements.

(c) The two basic categories of incentive contracts are fixed-price incentive contracts (see 16.403) and cost-reimbursement-incentive contracts (see 16.404). Since it is usually to the Government's advantage for the contractor to assume substantial cost responsibility and an appropriate share of the cost risk, fixed-price incentive contracts are preferred when contract costs and performance requirements are reasonably certain. Cost-reimbursement incentive contracts are subject to the overall limitations in 16.301 that apply to all cost-reimbursement contracts.

16.402 Application of predetermined, formula-type incentives.

16.402-1 Cost incentives.

(a) Most incentive contracts include only cost incentives, which take the form of a profit or fee adjustment formula and are intended to motivate the contractor to effectively manage costs. No incentive contract may provide for other incentives without also providing a cost incentive (or constraint).

(b) Except for cost-plus-award-fee contracts (see 16.404-2), incentive contracts include a target cost, a target profit or fee, and a profit or fee adjustment formula that (within the constraints of a price ceiling or minimum and maximum fee) provides that—

(1) Actual cost that meets the target will result in the target profit or fee;

(2) Actual cost that exceeds the target will result in downward adjustment of target profit or fee; and

(3) Actual cost that is below the target will result in upward adjustment of target profit or fee.

16.402-2 Technical performance incentives.

(a) Technical performance incentives may be considered in connection with specific product characteristics (e.g., a missile range, an aircraft speed, an engine thrust, or a vehicle maneuverability) or other specific elements of the contractor's performance. These incentives should be designed to tailor profit or fee to results achieved by the contractor, compared with specified target goals.

(b) Technical performance incentives may be particularly appropriate in major systems contracts, both in development (when performance objectives are known and the fabrication of prototypes for test and evaluation is required) and in production (if improved performance is attainable and highly desirable to the Government).

(c) Technical performance incentives may involve a variety of specific characteristics that contribute to the overall performance of the end item. Accordingly, the incentives on individual technical characteristics must be balanced so that no one of them is exaggerated to the detriment of the overall performance of the end item.

(d) Performance tests are generally essential in order to determine the degree of attainment of performance targets. Therefore, the contract must be as specific as possible in establishing test criteria such as testing conditions, instrumentation precision, and data interpretation.

(e) Because performance incentives present complex problems in contract administration, the contracting officer should negotiate them in full coordination with Government engineering and pricing specialists.

(f) It is essential that the Government and contractor agree explicitly on the effect that contract changes (e.g., pursuant to the Changes clause) will have on performance incentives.

(g) The contracting officer must exercise care, in establishing performance criteria, to recognize that the contractor should not be rewarded or penalized for attainments of Government-furnished components.

16.402-3 Delivery incentives.

(a) Delivery incentives should be considered when improvement from a required delivery schedule is a significant Government objective. It is important to determine the Government's primary objectives in a given contract (e.g., earliest possible delivery or earliest quantity production).

(b) Incentive arrangements on delivery should specify the application of the reward-penalty structure in the event of Government-caused delays or other delays beyond the control, and without the fault or negligence, of the contractor or subcontractor.

16.402-4 Structuring multiple-incentive contracts.

A properly structured multiple-incentive arrangement should—

(a) Motivate the contractor to strive for outstanding results in all incentive areas; and

(b) Compel trade-off decisions among the incentive areas, consistent with the Government's overall objectives for the acquisition. Because of the interdependency of the Government's cost, the technical performance, and the delivery goals, a contract that emphasizes only one of the goals may jeopardize control over the others. Because outstanding results may not be attainable for each of the incentive areas, all multiple-incentive contracts must include a cost incentive (or constraint) that operates to preclude rewarding a contractor for superior technical performance or delivery results when the cost of those results outweighs their value to the Government.

16.403 Fixed-price incentive contracts.

(a) *Description.* A fixed-price incentive contract is a fixed-price contract that provides for adjusting profit and establishing the final contract price by application of a formula based on the relationship of total final negotiated cost to total target cost. The final price is subject to a price ceiling, negotiated at the outset. The two forms of fixed-price incentive contracts, firm target and successive targets, are further described in 16.403-1 and 16.403-2 below.

(b) *Application.* A fixed-price incentive contract is appropriate when—

(1) A firm-fixed-price contract is not suitable;

(2) The nature of the supplies or services being acquired and other circumstances of the acquisition are such that the contractor's assumption of a degree of cost responsibility will provide a positive profit incentive for effective cost control and performance; and

(3) If the contract also includes incentives on technical performance and/or delivery, the performance requirements provide a reasonable opportunity for the incentives to have a meaningful impact on the contractor's management of the work.

(c) *Limitations.* A fixed-price incentive contract may be used only when a determination and findings has been executed, in accordance with agency procedures,showing that (1) this contract type is likely to be less costly than any other type or (2) it is impractical to obtain supplies or services of the kind or quality required without the use of this contract type (see 10 U.S.C. 2306(c), 2310(b), and 2311 or 41 U.S.C. 254(b), 257(b), and 257(a)).

(d) *Billing prices.* In fixed-price incentive contracts, billing prices are established as an interim basis for payment. These billing prices may be adjusted, within the ceiling limits, upon request of either party to the contract, when it becomes apparent that final negotiated cost will be substantially different from the target cost.

16.403-1 Fixed-price incentive (firm target) contracts.

(a) *Description.* A fixed-price incentive (firm target) contract specifies a target cost, a target profit, a price ceiling (but not a profit ceiling or floor), and a profit adjustment formula. These elements are all negotiated at the outset. The price ceiling is the maximum that may be paid to the contractor, except for any adjustment under other contract clauses. When the contractor completes performance, the parties negotiate the final cost, and the final price is established by applying the formula. When the final cost is less than the target cost, application of the formula results in a final profit greater than the target profit; conversely, when final cost is more than target cost, application of the formula results in a final profit less than the target profit, or even a net loss. If the final negotiated cost exceeds the price ceiling, the contractor absorbs the difference as a loss. Because the profit varies inversely with the cost, this contract type provides a positive, calculable profit incentive for the contractor to control costs.

(b) *Application.* A fixed-price incentive (firm target) contract is appropriate when the parties can negotiate at the outset a firm target cost, target profit, and profit adjustment formula that will provide a fair and reasonable incentive and a ceiling that provides for the contractor to assume an appropriate share of the risk. When the contractor assumes a considerable or major share of the cost responsibility under the adjustment formula, the target profit should reflect this responsibility.

(c) *Limitations.* This contract type may be used only when—

(1) The contractor's accounting system is adequate for providing data to support negotiation of final cost and incentive price revision;

(2) Adequate cost or pricing information for establishing reasonable firm targets is available at the time of initial contract negotiation; and

(3) The determination and findings required by 16.403(c) has been signed.

(d) *Contract schedule.* The contracting officer shall specify in the contract schedule the target cost, target profit, and target price for each item subject to incentive price revision.

16.403-2 Fixed-price incentive (successive targets) contracts.

(a) *Description.* (1) A fixed-price incentive (successive targets) contract specifies the following elements, all of which are negotiated at the outset:

(i) An initial target cost.

(ii) An initial target profit.

(iii) An initial profit adjustment formula to be used for establishing the firm target profit, including a ceiling and floor for the firm target profit. (This formula normally provides for a lesser degree of contractor cost responsibility than would a formula for establishing final profit and price.)

(iv) The production point at which the firm target cost and firm target profit will be negotiated (usually before delivery or shop completion of the first item).

(v) A ceiling price that is the maximum that may be paid to the contractor, except for any adjustment under other contract clauses providing for equitable adjustment or other revision of the contract price under stated circumstances.

(2) When the production point specified in the contract is reached, the parties negotiate the firm target cost, giving consideration to cost experience under the contract and other pertinent factors. The firm target profit is established by the formula. At this point, the parties have two alternatives, as follows:

(i) They may negotiate a firm fixed price, using the firm target cost plus the firm target profit as a guide.

(ii) If negotiation of a firm fixed price is inappropriate, they may negotiate a formula for establishing the final price using the firm target cost and firm target profit. The final cost is then negotiated at completion, and the final profit is established by formula, as under the fixed-price incentive (firm target) contract (see 16.403-1 above).

(b) *Application.* A fixed-price incentive (successive targets) contract is appropriate when—

(1) Available cost or pricing information is not sufficient to permit the negotiation of a realistic firm target cost and profit before award;

(2) Sufficient information is available to permit negotiation of initial targets; and

(3) There is reasonable assurance that additional reliable information will be available at an early point in the contract performance so as to permit negotiation of either (i) a firm fixed price or (ii) firm targets and a formula for establishing final profit and price that will provide a fair and reasonable incentive. This additional information is not limited to experience under the contract, itself, but may be drawn from other contracts for the same or similar items.

(c) *Limitations.* This contract type may be used only when—

(1) The contractor's accounting system is adequate for providing data for negotiating firm targets and a realistic profit adjustment formula, as well as later negotiation of final costs;

(2) Cost or pricing information adequate for establishing a reasonable firm target cost is reasonably expected to be available at an early point in contract performance; and

(3) The determination and findings required by 16.403(c) has been signed.

(d) *Contract schedule.* The contracting officer shall specify in the contract schedule the initial target cost, initial target profit, and initial target price for each item subject to incentive price revision.

16.404 Cost-reimbursement incentive contracts.

See 16.301 for requirements applicable to all cost-reimbursement contracts, for use in conjunction with the following subsections.

16.404-1 Cost-plus-incentive-fee contracts.

(a) *Description.* The cost-plus-incentive-fee contract is a cost-reimbursement contract that provides for the initially negotiated fee to be adjusted later by a formula based on the relationship of total allowable costs to total target costs. This contract type specifies a target cost, a target fee, minimum and maximum fees, and a fee adjustment formula. After contract performance, the fee payable to the contractor is determined in accordance with the formula. The formula provides, within limits, for increases in fee above target fee when total allowable costs are less than target costs, and decreases in fee below target fee when total allowable costs exceed target costs. This increase or decrease is intended to provide an incentive for the contractor to manage the contract effectively. When total allowable cost is greater than or less than the range of costs within which the fee-adjustment formula operates, the contractor is paid total allowable costs, plus the minimum or maximum fee.

(b) *Application.* (1) A cost-plus-incentive-fee contract is appropriate for development and test programs when (i) a cost-reimbursement contract is necessary (see 16.301-2) and (ii) a target cost and a fee adjustment formula can be negotiated that are likely to motivate the contractor to manage effectively.

(2) The contract may include technical performance incentives when it is highly probable that the required development of a major system is feasible and the Government has established its performance objectives, at least in general terms. This approach may also apply to other development programs, if the use of both cost and technical performance incentives is desirable and administratively practical.

(3) The fee adjustment formula should provide an incentive that will be effective over the full range of reasonably foreseeable variations from target cost. If a high maximum fee is negotiated, the contract shall also provide for a low minimum fee that may be a zero fee or, in rare cases, a negative fee.

(c) *Limitations.* No cost-plus-incentive-fee contract shall be awarded unless all limitations in 16.301-3 are complied with.

16.404-2 Cost-plus-award-fee contracts.

(a) *Description.* A cost-plus-award-fee contract is a cost-reimbursement contract that provides for a fee consisting of (1) a base amount fixed at inception of the contract and (2) an award amount that the contractor may earn in whole or in part during performance and that is sufficient to provide motivation for excellence in such areas as quality, timeliness, technical ingenuity, and cost-effective management. The amount of the award fee to be paid is determined by the Government's judgmental evaluation of the contractor's performance in terms of the criteria stated in the contract. This determination is made unilaterally by the Government and is not subject to the Disputes clause.

(b) *Application.* (1) The cost-plus-award-fee contract is suitable for use when—

(i) The work to be performed is such that it is neither feasible nor effective to devise predetermined objective incentive targets applicable to cost, technical performance, or schedule;

(ii) The likelihood of meeting acquisition objectives will be enhanced by using a contract that effectively motivates the contractor toward exceptional performance and provides the Government with the flexibility to evaluate both actual performance and the conditions under which it was achieved; and

(iii) Any additional administrative effort and cost required to monitor and evaluate performance are justified by the expected benefits.

(2) The number of evaluation criteria and the requirements they represent will differ widely among contracts. The criteria and rating plan should motivate the contractor to improve performance in the areas rated, but not at the expense of at least minimum acceptable performance in all other areas.

(3) Cost-plus-award-fee contracts shall provide for evaluation at stated intervals during performance, so that the contractor will periodically be informed of the quality of its performance and the areas in which improvement is expected. Partial payment of fee shall generally correspond to the evaluation periods. This makes effective the incentive which the award fee can create by inducing the contractor to improve poor performance or to continue good performance.

(c) *Limitations.* No cost-plus-award-fee contract shall be awarded unless—

(1) All of the limitations in 16.301-3 are complied with;

(2) The maximum fee payable (i.e., the base fee plus the highest potential award fee) complies with the limitations in 16.301-3; and

(3) The contract amount, performance period, and expected benefits are sufficient to warrant the additional administrative effort and cost involved.

16.405 Contract clauses.

(a) The contracting officer shall insert the clause at 52.216-16, Incentive Price Revision—Firm Target, in solicitations and contracts when a fixed-price incentive (firm target) contract is contemplated. If the contract calls for supplies or services to be ordered under a provisioning document or Government option and the prices are to be subject to the incentive price revision under the clause, the contracting officer shall use the clause with its Alternate I.

(b) The contracting officer shall insert the clause at 52.216-17, Incentive Price Revision—Successive Targets, in solicitations and contracts when a fixed-price incentive (successive targets) contract is contemplated. If the contract calls for supplies or services to be ordered under a provisioning document or Government option and the prices are to be subject to incentive price revision under the clause, the contracting officer shall use the clause with its Alternate I.

(c) The clause at 52.216-7, Allowable Cost and Payment, is prescribed in 16.307(a) for insertion in solicitations and contracts when a cost-plus-incentive-fee contract or a cost-plus-award-fee contract is contemplated.

(d) The clause at 52.216-10, Incentive Fee, is prescribed in 16.307(d) for insertion in solicitations and contracts when a cost-plus-incentive-fee contract is contemplated.

(e) The contracting officer shall insert an appropriate award fee clause in solicitations and contracts when a cost-plus-award-fee contract is contemplated, provided that the clause—

(1) Is prescribed by or approved under agency acquisition regulations;

(2) Is compatible with the clause at 52.216-7, Allowable Cost and Payment; and

(3) Expressly excludes from the operation of the Disputes clause any disagreement by the contractor concerning the amount of the award fee.

SUBPART 16.5—INDEFINITE-DELIVERY CONTRACTS

16.501 General.

(a) There are three types of indefinite-delivery contracts—definite-quantity contracts, requirements contracts, and indefinite-quantity contracts. The appropriate type of indefinite-delivery contract may be used when the exact times and/or quantities of future deliveries are not known at the time of contract award.

(b) The various types of indefinite-delivery contracts offer the following advantages:

(1) All three types permit (i) Government stocks to be maintained at minimum levels and (ii) direct shipment to users.

(2) Indefinite-quantity contracts and requirements contracts also permit (i) flexibility in both quantities and delivery scheduling and (ii) ordering of supplies or services after requirements materialize.

(3) Indefinite-quantity contracts limit the Government's obligation to the minimum quantity specified in the contract.

(4) Requirements contracts may permit faster deliveries when production lead time is involved, because contractors are usually willing to maintain limited stocks when the Government will obtain all of its actual purchase requirements from the contractor.

(c) Indefinite-delivery contracts may provide for firm fixed prices (see 16.202), fixed prices with economic price adjustment (see 16.203), fixed prices with prospective redetermination (see 16.205), or prices based on catalog or market prices (see 15.804-3(c)). When prices are based on catalog or market prices, the price to be paid may be determined by establishing an adjustment factor and applying it to the price in industrywide pricing guides or manufacturers' price catalogs. Normally, the adjustment factor will be a fixed percentage discount to be applied to the price in effect on the date of each order. When fast payment procedures are included in indefinite-delivery contracts, the contracting officer shall include in the contract the special data required by 13.303(b).

16.502 Definite-quantity contracts.

(a) *Description.* A definite-quantity contract provides for delivery of a definite quantity of specific supplies or services for a fixed period, with deliveries to be scheduled at designated locations upon order.

(b) *Application.* A definite-quantity contract may be used when it can be determined in advance that (1) a definite quantity of supplies or services will be required during the contract period and (2) the supplies or services are regularly available or will be available after a short lead time.

16.503 Requirements contracts.

(a) *Description.* A requirements contract provides for filling all actual purchase requirements of designated Government activities for specific supplies or services during a specified contract period, with deliveries to be scheduled by placing orders with the contractor.

(1) For the information of offerors and contractors, the contracting officer shall state a realistic estimated total quantity in the solicitation and resulting contract. This estimate is not a representation to an offeror or contractor that the estimated quantity will be required or ordered, or that conditions affecting requirements will be stable or normal. The contracting officer may obtain the estimate from records of previous requirements and consumption, or by other means, and should base the estimate on the most current information available.

(2) The contract shall state, if feasible, the maximum limit of the contractor's obligation to deliver and the Government's obligation to order. The contract may also specify maximum or minimum quantities that the Government may order under each individual order and the maximum that it may order during a specified period of time.

(b) *Application.* A requirements contract may be appropriate for acquiring any items or services when the Government anticipates recurring requirements but cannot predetermine the precise quantities of supplies or services that designated Government activities will need during a definite period. Funds are obligated by each delivery order, not by the contract itself.

(c) *Government property furnished for repair.* When a requirements contract is used to acquire work (e.g., repair, modification, or overhaul) on existing items of Government property, the contracting officer shall specify in the Schedule that failure of the Government to furnish such items in the amounts or quantities described in the Schedule as "estimated" or "maximum" will not entitle the contractor to any equitable adjustment in price under the Government Property clause of the contract.

16.504 Indefinite-quantity contracts.

(a) *Description.* An indefinite-quantity contract provides for an indefinite quantity, within stated limits, of specific supplies or services to be furnished during a fixed period, with deliveries to be scheduled by placing orders with the contractor.

(1) The contract shall require the Government to order and the contractor to furnish at least a stated minimum quantity of supplies or services and, if and as ordered, the contractor to furnish any additional quantities, not to exceed a stated maximum. The contracting officer may obtain the basis for the maximum from records of previous requirements and consumption, or by other means, but the maximum quantity should be realistic and based on the most current information available.

(2) To ensure that the contract is binding, the minimum quantity must be more than a nominal quantity, but it should not exceed the amount that the Government is fairly certain to order.

(3) The contract may also specify maximum or minimum quantities that the Government may order under each delivery order and the maximum that it may order during a specific period of time.

(b) *Application.* An indefinite-quantity contract may be used when the Government cannot predetermine, above a specified minimum, the precise quantities of supplies or services that will be required during the contract period, and it is inadvisable for the Government to commit itself for more than a minimum quantity. An indefinite-quantity contract should be used only when a recurring need is anticipated. Funds for other than the stated minimum quantity are obligated by each delivery order, not by the contract itself.

16.505 Contract clauses.

(a) The contracting officer shall insert the clause at 52.216-18, Ordering, in solicitations and contracts when a definite-quantity contract, a requirements contract, or an indefinite-quantity contract is contemplated.

(b) The contracting officer shall insert a clause substantially the same as the clause at 52.216-19, Delivery-Order Limitations, in solicitations and contracts when a definite-quantity contract, a requirements contract, or an indefinite-quantity contract is contemplated.

(c) The contracting officer shall insert the clause at 52.216-20, Definite Quantity, in solicitations and contracts when a definite-quantity contract is contemplated.

(d)(1) The contracting officer shall insert the clause at 52.216-21, Requirements, in solicitations and contracts when a requirements contract is contemplated.

(2) If the contract is for nonpersonal services and related supplies and covers estimated requirements that exceed a specific Government activity's internal capability to produce or perform, the contracting officer shall use the clause with its Alternate I.

(3) If the contract includes subsistence for both Government use and resale in the same Schedule, and similar products may be acquired on a brand-name basis, the contracting officer shall use the clause with its Alternate II (but see subparagraph (5) below).

(4) If the contract involves a partial small business or labor surplus area set-aside, the contracting officer shall use the clause with its Alternate III (but see subparagraph (5) below).

(5) If the contract (i) includes subsistence for both Government use and resale in the same Schedule and similar products may be acquired on a brand-name basis and (ii) involves a partial small business or labor surplus area set-aside, the contracting officer shall use the clause with its Alternate IV.

(e) The contracting officer shall insert the clause at 52.216-22, Indefinite Quantity, in solicitations and contracts when an indefinite-quantity contract is contemplated.

16.506 Ordering.

(a) The contracting officer shall include in the Schedule of indefinite-delivery contracts the names of the activity or activities authorized to issue orders under indefinite-delivery contracts.

(b) If appropriate, authorization for placing oral orders may be included in the contract Schedule; *provided*, that procedures have been established for obligating funds and that oral orders are confirmed in writing.

(c) Orders may be placed by written telecommunication, if provided for in the contract Schedule.

(d) Orders placed under indefinite-delivery contracts shall contain the following information:

(1) Date of order.

(2) Contract number and order number.

(3) Item number and description, quantity, and unit price.

(4) Delivery or performance date.

(5) Place of delivery or performance (including consignee).

(6) Packaging, packing, and shipping instructions, if any.

(7) Accounting and appropriation data.

(8) Any other pertinent information.

SUBPART 16.6—TIME-AND-MATERIALS, LABOR-HOUR, AND LETTER CONTRACTS

16.601 Time-and-materials contracts.

(a) *Description.* A time-and-materials contract provides for acquiring supplies or services on the basis of (1) direct labor hours at specified fixed hourly rates that include wages, overhead, general and administrative expenses, and profit and (2) materials at cost, including, if appropriate, material handling costs as part of material costs.

(b) *Application.* A time-and-materials contract may be used only when it is not possible at the time of placing the contract to estimate accurately the extent or duration of the work or to anticipate costs with any reasonable degree of confidence.

(1) *Government surveillance.* A time-and-materials contract provides no positive profit incentive to the contractor for cost control or labor efficiency. Therefore, appropriate Government surveillance of contractor performance is required to give reasonable assurance that efficient methods and effective cost controls are being used.

(2) *Material handling costs.* When included as part of material costs, material handling costs shall include only costs clearly excluded from the labor-hour rate. Material handling costs may include all appropriate indirect costs allocated to direct materials in accordance with the contractor's usual accounting procedures consistent with Part 31.

(3) *Optional method of pricing material.* When the nature of the work to be performed requires the contractor to furnish material that it regularly sells to the general public in the normal course of its business, the contract may provide for charging material on a basis other than at cost if—

(i) The total estimated contract price does not exceed $25,000 or the estimated price of material so charged does not exceed 20 percent of the estimated contract price;

(ii) The material to be so charged is identified in the contract;

(iii) No element of profit on material so charged is included as profit in the fixed hourly labor rates; and

(iv) The contract provides (A) that the price to be paid for such material shall be based on an established catalog or list price in effect when material is furnished, less all applicable discounts to the Government, and (B) that in no event shall the price exceed the contractor's sales price to its most-favored customer for the same item in like quantity, or the current market price, whichever is lower.

(c) *Limitations.* A time-and-materials contract may be used (1) only after the contracting officer executes a determination and findings that no other contract type is suitable and (2) only if the contract includes a ceiling price that the contractor exceeds at its own risk. The contracting officer shall document the contract file to justify the reasons for and amount of any subsequent change in the ceiling price.

16.602 Labor-hour contracts.

Description. A labor-hour contract is a variation of the time-and-materials contract, differing only in that materials are not supplied by the contractor. See 16.601(b) and 16.601(c) for application and limitations, respectively.

16.603 Letter contracts.

16.603-1 Description.

A letter contract is a written preliminary contractual instrument that authorizes the contractor to begin immediately manufacturing supplies or performing services.

16.603-2 Application.

(a) A letter contract may be used when (1) the Government's interests demand that the contractor be given a binding commitment so that work can start immediately and (2) negotiating a definitive contract is not possible in sufficient time to meet the requirement. However, a letter contract should be as complete and definite as feasible under the circumstances.

(b) When a letter contract award is based on price competition, the contracting officer shall include an overall price ceiling in the letter contract.

(c) Each letter contract shall, as required by the clause at 52.216-25, Contract Definitization, contain a negotiated definitization schedule including (1) dates for submission of the contractor's price proposal, required cost or pricing data, and, if required, make-or-buy and subcontracting plans, (2) a date for the start of negotiations, and (3) a target date for definitization, which shall be the earliest practicable date for definitization. The schedule will provide for definitization of the contract within 180 days after the date of the letter contract or before completion of 40 percent of the work to be performed, whichever occurs first. However, the contracting officer may, in extreme cases and according to agency procedures, authorize an additional period. If, after exhausting all reasonable efforts, the contracting officer and the contractor cannot negotiate a definitive contract because of failure to reach agreement as to price or fee, the clause at 52.216-25 requires the contractor to proceed with the work and provides that the contracting officer may, with the approval of the head of the contracting activity, determine a reasonable price or fee in accordance with Subpart 15.8 and Part 31, subject to appeal as provided in the Disputes clause.

(d) The maximum liability of the Government inserted in the clause at 52.216-24, Limitation of Government Liability, shall be the estimated amount necessary to cover the contractor's requirements for funds before definitization. However, it shall not exceed 50 percent of the estimated cost of the definitive contract unless approved in advance by the official that authorized the letter contract.

(e) The contracting officer shall assign a priority rating to the letter contract if it is appropriate under 12.304.

16.603-3 Limitations.

A letter contract may be used only after the head of the contracting activity or a designee determines in writing that no other contract is suitable. Letter contracts shall not—

(a) Commit the Government to a definitive contract in excess of the funds available at the time the letter contract is executed;

(b) Be entered into without competition when competition is required by Part 6; or

(c) Be amended to satisfy a new requirement unless that requirement is inseparable from the existing letter contract. Any such amendment is subject to the same requirements and limitations as a new letter contract.

16.603-4 Contract clauses.

(a) The contracting officer shall include in each letter contract the clauses required by this regulation for the type of definitive contract contemplated and any additional clauses known to be appropriate for it.

(b) In addition, the contracting officer shall insert the following clauses in solicitations and contracts when a letter contract is contemplated:

(1) The clause at 52.216-23, Execution and Commencement of Work, except that this clause may be omitted from letter contracts awarded on SF 26;

(2) The clause at 52.216-24, Limitation of Government Liability, with dollar amounts completed in a manner consistent with 16.603-2(d); and

(3) The clause at 52.216-25, Contract Definitization,

with its paragraph (b) completed in a manner consistent with 16.603-2(c). If the letter contract is being awarded on the basis of price competition, the contracting officer shall use the clause with its Alternate I.

(c) The contracting officer shall also insert the clause at 52.216-26, Payments of Allowable Costs Before Definitization, in solicitations and contracts if a cost-reimbursement definitive contract is contemplated, unless the acquisition involves conversion, alteration, or repair of ships.

SUBPART 16.7—AGREEMENTS

16.701 Scope.

This subpart prescribes policies and procedures for establishing and using basic agreements and basic ordering agreements. (See Subpart 13.2 for blanket purchase agreements (BPA's) and see 35.015(b) for additional coverage of basic agreements with educational institutions and nonprofit organizations.)

16.702 Basic agreements.

(a) *Description.* A basic agreement is a written instrument of understanding, negotiated between an agency or contracting activity and a contractor, that (1) contains contract clauses applying to future contracts between the parties during its term and (2) contemplates separate future contracts that will incorporate by reference or attachment the required and applicable clauses agreed upon in the basic agreement. A basic agreement is not a contract.

(b) *Application.* A basic agreement should be used when a substantial number of separate contracts may be awarded to a contractor during a particular period and significant recurring negotiating problems have been experienced with the contractor. Basic agreements may be used with negotiated fixed-price or cost-reimbursement contracts.

(1) Basic agreements shall contain (i) clauses required for negotiated contracts by statute, executive order, and this regulation and (ii) other clauses prescribed in this regulation or agency acquisition regulations that the parties agree to include in each contract as applicable.

(2) Each basic agreement shall provide for discontinuing its future applicability upon 30 days' written notice by either party.

(3) Each basic agreement shall be reviewed annually before the anniversary of its effective date and revised as necessary to conform to the requirements of this regulation. Basic agreements may need to be revised before the annual review due to mandatory statutory requirements. A basic agreement may be changed only by modifying the agreement itself and not by a contract incorporating the agreement.

(4) Discontinuing or modifying a basic agreement shall not affect any prior contract incorporating the basic agreement.

(5) Contracting officers of one agency should obtain and use existing basic agreements of another agency to the maximum practical extent.

(c) *Limitations.* A basic agreement shall not—

(1) Cite appropriations or obligate funds;

(2) State or imply any agreement by the Government to place future contracts or orders with the contractor; or

(3) Be used in any manner to restrict competition.

(d) *Contracts incorporating basic agreements.* (1) Each contract incorporating a basic agreement shall include a scope of work and price, delivery, and other appropriate terms that apply to the particular contract. The basic agreement shall be incorporated into the contract by specific reference (including reference to each amendment) or by attachment.

(2) The contracting officer shall include clauses pertaining to subjects not covered by the basic agreement, but applicable to the contract being negotiated, in the same manner as if there were no basic agreement.

(3) If an existing contract is modified to effect new acquisition, the modification shall incorporate the most recent basic agreement, which shall apply only to work added by the modification, except that this action is not mandatory if the contract or modification includes all clauses required by statute, executive order, and this regulation as of the date of the modification. However, if it is in the Government's interest and the contractor agrees, the modification may incorporate the most recent basic agreement for application to the entire contract as of the date of the modification.

16.703 Basic ordering agreements.

(a) *Description.* A basic ordering agreement is a written instrument of understanding, negotiated between an agency, contracting activity, or contracting office and a contractor, that contains (1) terms and clauses applying to future contracts (orders) between the parties during its term, (2) a description, as specific as practicable, of supplies or services to be provided, and (3) methods for pricing, issuing, and delivering future orders under the basic ordering agreement. A basic ordering agreement is not a contract.

(b) *Application.* A basic ordering agreement may be used to expedite contracting for uncertain requirements for supplies or services when specific items, quantities, and prices are not known at the time the agreement is executed, but a substantial number of requirements for the type of supplies or services covered by the agreement are anticipated to be purchased from the contractor. Under proper circumstances, the use of these procedures can result in economies in ordering parts for equipment support by reducing administrative lead-time, inventory investment, and inventory obsolescence due to design changes.

(c) *Limitations.* A basic ordering agreement shall not state or imply any agreement by the Government to place future contracts or orders with the contractor or be used in any manner to restrict competition.

(1) Each basic ordering agreement shall—

(i) Describe the method for determining prices to be paid to the contractor for the supplies or services;

(ii) Include delivery terms and conditions or specify how they will be determined;

(iii) List one or more Government activities authorized to issue orders under the agreement;

(iv) Specify the point at which each order becomes a binding contract (e.g., issuance of the order, acceptance of the order in a specified manner, or failure to reject the order within a specified number of days);

(v) Provide that failure to reach agreement on price for any order issued before its price is established (see paragraph (d)(3) below) is a dispute under the Disputes clause included in the basic ordering agreement; and

(vi) If fast payment procedures will apply to orders, include the special data required by 13.303(b).

(2) Each basic ordering agreement shall be reviewed annually before the anniversary of its effective date and revised as necessary to conform to the requirements of this regulation. Basic ordering agreements may need to be revised before the annual review due to mandatory statutory requirements. A basic ordering agreement shall be changed only by modifying the agreement itself and not by individual orders issued under it. Modifying a basic ordering agreement shall not retroactively affect orders previously issued under it.

(d) *Orders.* A contracting officer representing any Government activity listed in a basic ordering agreement may issue orders for required supplies or services covered by that agreement.

(1) Before issuing an order under a basic ordering agreement, the contracting officer shall—

(i) Obtain competition in accordance with Part 6;

(ii) If the order is being placed after competition, ensure that use of the basic ordering agreement is not prejudicial to other offerors; and

(iii) Sign or obtain any applicable justifications and approvals, and any determination and findings, and comply with other requirements in accordance with 1.602-1(b), as if the order were a contract awarded independently of a basic ordering agreement.

(2) Contracting officers shall—

(i) Issue orders under basic ordering agreements on Optional Form (OF) 347, Order for Supplies or Services, or on any other appropriate contractual instrument;

(ii) Incorporate by reference the provisions of the basic ordering agreement;

(iii) If applicable, cite the authority under 6.302 in each order; and

(iv) Comply with 5.203 when synopsis is required by 5.201.

(3) The contracting officer shall neither make any final commitment nor authorize the contractor to begin work on an order under a basic ordering agreement until prices have been established, unless the order establishes a ceiling price limiting the Government's obligation and either—

(i) The basic ordering agreement provides adequate procedures for timely pricing of the order early in its performance period; or

(ii) The need for the supplies or services is compelling and unusually urgent (i.e., when the Government would be seriously injured, financially or otherwise, if the requirement is not met sooner than would be possible if prices were established before the work began). The contracting officer shall proceed with pricing as soon as practical. In no event shall an entire order be priced retroactively.

APPENDIX C

DFARS Part 216.4

PART 216--TYPES OF CONTRACTS
SUBPART 216.4--INCENTIVE CONTRACTS

216.402 Application of Predetermined, Formula-Type Incentives.

216.402-2 Technical Performance Incentives. Increases in profits or fees resulting from the use of incentive provisions are made only because cost, performance, or other contractual goals or standards have been surpassed.

(S-70) Description. A contract with a performance incentive is one which incorporates an incentive to the contractor to surpass stated performance targets by providing for increases in profit or fee to the extent that such targets are surpassed, and decreases to the extent that such targets are not met. "Performance," as used in this paragraph refers not only to the performance of the article being procured, but to the performance of the contractor as well. Performance which is the minimum which the Government will accept shall be mandatory under the terms of the Completion form contract and shall warrant only the minimum profit or fee related thereto. Performance which meets the stated targets will warrant the "target" profit or fee. Performance which surpasses these targets will be rewarded by additional profit or fee. When applied to the performance of the contractor, the incentive should relate to specific performance areas of milestones, such as delivery or test schedules, quality controls, maintenance requirements, and reliability standards.

216.403 Fixed-Price Incentive Contracts.

(b)(3) Application. Separate incentive provisions may be made applicable to individual line items of a contract, e.g., when dissimilar work is best incentivized by use of separate formulas.

216.403-2 Fixed-Price Incentive (Successive Targets).

(a)(1) This formula does not apply for the life of the contract but simply is used to fix the firm target profit for the contract. To provide an incentive consistent with the circumstances, the formula for fixing the firm target profit should reflect the relative risk involved in establishing an incentive arrangement where cost and pricing information were not sufficient to permit the negotiation of firm targets at the outset.

216.403-70 Fixed-Price Contracts With Award Fees. For the use of award fee provisions in fixed-price contracts, see 216.404-2(S-70).

216.404 Cost-Reimbursement Incentive Contracts.

216.404-1 Cost-Plus-Incentive-Fee Contracts.

(b) Application. Range of fee and the fee adjustment formula should be negotiated so as to give appropriate weight to basic procurement objectives. For example, in an initial product development contract, it may be appropriate to negotiate a cost-plus- incentive-fee contract providing for relatively small increases, or decreases in fee tied to the cost incentive feature, balanced by the inclusion of performance incentive provisions providing for significant upward or downward fee adjustment as an incentive for the contractor to meet or surpass negotiated performance targets. Conversely, in subsequent development and test contracts, it may be more appropriate to negotiate an incentive formula where the opportunity to earn additional fee is based primarily on the contractor's success in controlling costs. With regard to the cost incentive provisions of a contract, the minimum and maximum fees, and the fee adjustment formula, should be negotiated so as to provide an incentive which will be effective over variations in costs throughout the full range of reasonably foreseeable variations from target cost. Whenever this type of contract, with or without the inclusion of performance incentives, is negotiated so as to provide incentive up to a high maximum fee, the contract also shall provide for a low minimum fee, which may even be a "zero" fee or, in rare cases, a "negative" fee.

216.404-2 Cost-Plus-Award-Fee Contracts.

(b) Application. The CPAF contract is suitable for:

(1)(S-70) Level of effort contracts for performance of services where mission feasibility is established but measurement of achievement must be by subjective evaluation rather than objective measurement; and

(b)(S-70) Weighted Guidelines. The weighted guidelines method shall not be applied to CPAF contracts with respect to either the base (fixed) fee or the award fee.

(b)(S-71) Fee. The amount of the base fee shall not exceed three percent of the estimated cost of the contract exclusive of the fee, and the maximum fee (base fee plus award fee) shall not exceed the limitations stated in FAR 15.903.

(b)(S-72)(i) Consideration may be given to (A) constituting a board to evaluate the contractor's performance and determine the amount of the award fee or recommend an amount to the contracting officer and, (B) to afford the contractor an opportunity to present matters on his own behalf.

(ii) The contract shall set forth those criteria to be used in evaluating the contractor's performance to arrive at the award fee. See examples of such criteria set forth in charts below.

(b)(S-73) Disputes. The contract shall expressly exclude from the operation of the Disputes clause any dispute over the amount of the award fee.

(c)(S-70) Limitations. The CPAF contract shall not be used as an administrative technique to avoid CPFF contracts when the criteria for CPFF contracts apply, nor shall a CPAF contract be used to avoid the effort of establishing objective targets so as to make feasible the use of a CPIF type contract.

(S-72) The CPAF contract shall not be used for procurements categorized as either Engineering Development or Operational System Development which have undergone contract definition, except that where it may be more advantageous to do so, it may be used in these categories for individual procurements, ancillary to the development of a major weapon system or equipment, where the purpose of the procurement is clearly to determine or solve specific problems associated with the major weapon system or equipment.

(S-70) Other Application of the Award Fee Provision. In certain cases, it may be desirable to motivate and reward a contractor for management performance over and above that which can be objectively measured and incentivised under other forms of government contracts. For example, logistics support, quality, timeliness, cooperation, ingenuity, and cost effectiveness are areas under the control of management which may be susceptible only to subjective measurement and evaluation. In such cases, the "award amount" portion of the fee applicable to the CPAF contract is an ideal method for incorporation of these additional incentives into government contracts; the "base fee" or fixed amount portion would not be applicable in these procurements. When approved by the Chief of the Contracting Office, the "award amount" portion of the CPAF contract may be used in conjunction with other types and kinds of contracts for Government's benefit. An Award Review Board shall be appointed at each appropriate installation or activity. Procedures shall be established for the conduct of the evaluation. Further, the award fee provision shall not be used in conjunction with other types and kinds of contracts when the administrative effort or costs for evaluation exceed the benefits to be derived from the use of this arrangement.

EXAMPLES OF CRITERIA

(Examples on Following Pages)

PERFORMANCE EVALUATION REPORT CRITERIA

		Submarginal 0-60	Marginal 61-70	Good 71-80	Very Good 81-90	Excellent 91-100
A Time of Delivery	(A-1) Adherence to plan schedule.	Consistently late on 20% of plans.	Late on 10% plans w/o prior agreement.	Occasional plan late w/o justification.	Meets plan schedule.	Delivers all plans on schedule & meets prod. change requirements on schedule.
	(A-2) Action on Anticipated delays.	Does not expose changes or resolve them as soon as recognized.	Exposes changes but is dilatory in resolution on plans.	Anticipates changes, advise Shipyard but misses completion of design plans 10%.	Keeps Yard posted on delays, resolves independently on plans.	Anticipates in good time, advises Shipyard, resolves independently and meets production schedule.
	(A-3) Plan Maintenance	Does not complete interrelated systems studies concurrently.	System studies completed but constr. plan changes delayed.	Major work plans coordinated in time to meet production schedules.	Design changes from studies and interrelated plans issued in time to meet product schedules.	Design changes, studies resolved and test data issued ahead of production requirements.
B Quality of Work	(B-1) Work Appearance	25% dwgs. not compatible with Shipyard repro. processes and use.	20% not compatible with Shipyard repro. processes and use.	10% not compatible with Shipyard repro. processes and use.	0% dwgs. prepared by Des. agent not compatible with Shipyard repro. processes and use.	0% dwgs. presented incl. Des. agent, vendors, subcontr. not compatible with Shipyard repro. processes and use.
	(B-2) Thoroughness and Accuracy of Work.	Is brief on plans tending to leave questionable situations for Shipyard to resolve.	Has followed guidance, type and standard dwgs.	Has followed guidance, type & standard dwgs. questioning and resolving doubtful areas.	Work complete with notes and thorough explanations for anticipated questionable areas.	Work of highest caliber incorporating all pertinent data required including related activities.
	(B-3) Engineering Competence	Tendency to follow past practice with no variation to meet reqmts. job in hand.	Adequate engrg. to use & adapt existing designs to suit job on hand for routine work.	Engineered to satisfy specs., guidance plans and material provided.	Displays excellent knowledge of constr. reqmts. considering systems aspect, cost, shop capabilities and procurement problems.	Exceptional knowledge of Naval shipwork & adaptability to work process incorporating knowledge of future planning in Design.

PERFORMANCE EVALUATION REPORT CRITERIA (Cont'd.)

		Submarginal 0-40	Marginal 41-70	Good 71-80	Very Good 81-90	Excellent 91-100
B Quality of Work (Cont'd.)	(B-4) Liaison Effectiveness	Indifferent to requirements of associated activities, related systems, and Shipyard advice.	Satisfactory but dependent on Shipyard to force resolution of problems without constructive recommendations to subcontr. or vendors.	Maintains normal contact with associated activities depending on Shipyard for problems requiring military resolution.	Maintains independent contact with all associated activities, keeping them informed to produce compatible design with little assist. for Yard.	Maintains expert contact, keeping Yard informed, obtaining info from equip., supplies w/o prompting by Shipyard.
	(B-5) Independence and Initiative	Constant surveillance req'd. to keep job from slipping—assign to low priority to satisfy needs.	Requires occasional prodding to stay on schedule & expects Shipyard resolution of most problems.	Normal interest and desire to provide workable plans with average assistance & direction by Shipyard.	Complete & accurate job, free of incompatibilities with little or no direction by Shipyard.	Develops complete and accurate plans, seeks out problem areas and resolves with assoc. act. ahead of schedule.
C Effectiveness in Controlling and/or Reducing Costs	(C-1) Utilization of Personnel	Planning of work left to designers on drafting boards.	Supervision sets & reviews goals for designers.	System planning by supervisory, personnel, studies checked by engineers.	Design parameters established by system engineers & held in design plans.	Mods. to design plans limited to less than 5% as result lack engrg. system correlation.
	(C-2) Control Direct Charges (Except Labor)	Expenditures not controlled for services.	Expenditures reviewed occasionally by supervision.	Direct charges set & accounted for on each work package.	Provides services as part of normal design function w/o extra charges.	No cost overruns on original estimates absorbs service demands by Shipyard.
	(C-3) Performance to Cost Estimate	Does not meet cost estimate for original work or changes 30% time.	Does not meet cost estimate for original work or changes 20% time.	Exceeds original est. on change orders 10% time and meets original design costs.	Exceeds original est. on change orders 5% time.	Never exceeds estimates of original package or change orders.

CONTRACTOR PERFORMANCE EVALUATION REPORT

Ratings
Excellent (91-100)
Very good (81- 90)
Good (71- 80)
Marginal (61- 70)
Submarginal (0- 60)

Period of ______________ 19____
Contract Number ______________
Contractor ______________
Date of Report ______________
PNS Technical Monitor/s ______________

CATEGORY	CRITERIA	RATING	ITEM FACTOR	EVALUATION RATING	CATEGORY FACTOR	EFFICIENCY RATING
A	TIME OF DELIVERY					
	A-1 Adherence to Plan Schedule		x .40 =			
	A-2 Action on Anticipated Delays		x .30 =			
	A-3 Plan Maintenance		x .30 =			
		Total Item Weighed Rating			x .30 =	
B	QUALITY OF WORK					
	B-1 Work Appearance		x .15 =			
	B-2 Thoroughness and Accuracy of Work		x .30 =			
	B-3 Engineering Competence		x .20 =			
	B-4 Liaison Effectiveness		x .15 =			
	B-5 Independence and Initiative		x .20 =			
		Total Item Weighed Rating			x .40 =	
C	EFFECTIVENESS IN CONTROLLING AND/OR REDUCING COSTS					
	C-1 Utilization of Personnel		x .30 =			
	C-2 Control of all Direct Charges other than labor		x .30 =			
	C-3 Performance to Cost Estimate		x .40 =			
		Total Item Weighed Rating			x .30 =	

TOTAL WEIGHED RATING ______________
Rated by: ______________
Signature(s) ______________

NOTE: Provide supporting data and/or justification for below average or outstanding item ratings.

APPENDIX D

DFARS 232.5

PART 232--CONTRACT FINANCING
SUBPART 232.5--PROGRESS PAYMENTS BASED ON COSTS

232.501 General.

232.501-1 Customary Progress Payment Rates.

(a) The customary progress payment rate applicable to DoD contracts awarded to large businesses is 75 percent and 80 percent for small businesses if the contracts are funded with FY 87 appropriations. The customary progress payment rate for all other DoD contracts is 80 percent for large businesses, 85 percent for small businesses, and 90 percent for small disadvantaged businesses. If a contract is funded with FY 87 and other fiscal year appropriations, the contracting officer may either (1) apply the progress payment rate applicable to FY 87 appropriations to all line items in the contract; or (2) apply the rate applicable to FY 87 appropriations to only those line items funded with FY 87 appropriations and apply the higher rate to all other line items. However, if multiple progress payment rates are used in a single contract, the requirements of FAR 32.502-4(d) must be met. The customary progress payment rate applicable to Foreign Military Sales requirements is the same as that applicable to DoD requirements. The customary progress payment rate for flexible progress payments is the rate determined by use of either the CASHII, CASHIII, CASHIV or CASHV computer program as applicable in accordance with the requirements of 232.502-1(S-71).

232.501-2 Unusual Progress Payments.

(a) Contracting officers shall not modify contracts to authorize unliquidated unusual progress payments in excess of $25,000,000 without the prior written consent of the Office of The Assistant Secretary of Defense (Production and Logistics). All other unusual progress payment provisions shall be coordinated by the departmental contract financing office, with the Department of Defense Contract Finance Committee.

232.501-3 Contract Price.

(b) For purposes of making progress payments, the contract price may exceed the funds obligated under the contract if the contract contains an appropriate limitation of funds clause. In such cases, the progress payments shall be limited to the lesser of the applicable percentage of the contract price, or 100% of the funds obligated.

232.502 Preaward Matters.

232.502-1 Use of Customary Progress Payments.

(b)(1) If the contractor is a small disadvantaged business, progress payments may be provided when the contract will involve $50,000 or more.

(S-70) Customary FMS Progress Payments.

(1) FMS progress payments shall be applicable to Department of Defense acquisitions on behalf of foreign governments or international organizations pursuant to Section 22 of the Arms Export Control Act (FMS requirements).

(2) FMS progress payments are not applicable to:

(i) Acquisitions for replenishment of U.S. Government inventories or stocks, and

(ii) Acquisitions made under DoD cooperative logistic support arrangements.

(S-71) Customary Flexible Progress Payments.

(1) General.

(i) Progress payments reduce contractor investment in work in process inventory. In addition to progress payments, other factors influence a contractor's actual investment in work in process inventory, e.g., delivery schedules, cash management practices, and Government payment practices.

(ii) Progress payment amounts that are determined by using uniform, customary progress payment rates are insensitive to the other factors which influence contractor investment. Consequently, contractor investments in work in process inventories vary among contractors and across contracts.

(iii) Flexible progress payment rates are designed to tailor the progress payment rate to more closely match the contractor's cash needs for financing contract performance. The flexible rate is expressed as a percentage applied to costs to determine the amount of a progress payment in the same manner as uniform, customary progress payment rates.

(iv) For flexible progress payments, cash needs are measured and projected based on the investment required for work in process inventory over the life of the contract. Total investment is measured by a weighted average of total costs paid by the contractor. The contractor's investment is the weighted average of the amount not paid by the Government.

(v) DoD, as a matter of policy, requires contractors to retain a minimum investment level in work in process inventory over the life of the contract. This minimum investment level is based on the uniform, customary progress payment rate and its related investment percentage. Accordingly, DoD will make progress payments at a rate (expressed as a whole number) that is the highest rate which yields a corresponding investment by the contractor in work in process inventory of not less than the minimum investment percentage.

(vi) The flexible progress payment rate--

(A) Shall be determined by the DoD Cash Flow Computer Model; and

(B) Shall not be--

(1) Greater than 100%; or

(2) Less than the uniform, customary progress payment rate that would have been applied to the contract absent flexible progress payments.

(vii) The following chart shows uniform, customary progress payment rates, minimum contractor investment (except for contracts funded with FY 87 appropriations), and the applicable DoD Cash Flow Computer Model. For contracts funded with FY 87 appropriations, a contractor must retain at least a 25 percent investment in work in process inventory over the life of the contract.

Date of Contract Award	Uniform Rate	Investment Percentage	Cash Flow Model
Prior to May 1, 1985	90%	5%	CASH-II
May 1, 1985 To October 18, 1986	80%	15%	CASH-III
October 19, 1986 To October 1, 1988	75%	25%	CASH-IV
After October 1, 1988	80%	20%	CASH-V

(2) Using Flexible Progress Payments.

(i) Contractors who submit certified cost or pricing data, as defined in FAR 15.804-2, for negotiated fixed price contracts in excess of $1 million may request flexible progress payments.

(ii) Use a flexible progress payment rate instead of the uniform customary rate if:

(A) The contractor requests the use of flexible progress payment rates prior to definitization or contract award. (If the contractor requests flexible progress payments after definitization or contract award, the contracting officer may, if warranted, grant their use. However, the contractor must provide adequate new consideration (see FAR 32.501-4).)

(B) The contractor agrees to the requirements of (S-71) of this subsection.

(C) The contract contains the clause at FAR 52.232-16, "Progress Payments." However, small business contractors may get flexible progress payments if they agree to use the clause at FAR 52.232-16 without its Alternate I.

(iii) Do not use flexible progress payments for undefinitized contract actions, contracts awarded through sealed bidding, or contracts to be awarded and performed entirely outside the United States, its possessions or territories.

(iv) Subcontractors who request a flexible progress payment rate, meet the criteria in paragraph (2)(i) of this subsection, and agree to the requirements of (S-71) of this subsection are to receive a flexible progress payment rate. The prime contractor determines the subcontractor flexible progress payment rate without regard to the rate in the prime contract. In determining the rate, the prime contractor will use the DoD Cash Flow Computer Model and review the cash flow data provided by the subcontractor.

(v) Prior to contract award, the contracting officer shall determine the flexible progress payment rate by applying the appropriate version of the DoD Cash Flow Computer Model. For contracts funded with FY 87 appropriations, Cash Flow Model "CASH-IV" shall be used. The model takes into account key cash flow factors, such as contract cost profile, delivery schedules, subcontractor progress payments, liquidation rates, and payment/reimbursement cycles.

(3) Contractor Cash Flow and Cost Information.

(i) Contractors shall furnish to the contracting officer cash flow data in the form and context specified for use in the DoD Cash Flow Computer Model. This data includes:

(A) Actual and projected incurred cost--broken down by element of cost and by month--for the duration of the contract;

(B) Float times for each element of cost;

(C) Dates and lag times of actual and projected progress payment and delivery payment receipts; and

(D) Associated contract price and profit percentage.

(ii) Contracting officers shall verify the cash flow data using the procedures normally used to verify contractor cost or pricing data, and establish the flexible progress payment rate during the negotiation of the contract price.

(iii) If any flexible progress payment rate is later determined to be overstated because factual data submitted in support of the rate computation was not current, accurate, and complete at the time the flexible progress payment rate was established, the flexible progress payment clause provides for--

(A) Reduction of the flexible progress payment rate; and

(B) Payment of interest.

(iv) The contracting officer will assess the interest charge on the amount of overpayment resulting from facts that were not current, accurate, or complete--whether or not the overpayment has been liquidated. Calculate the interest from the date of overpayment to the date of liquidation of the overpayment. In determining the amount of interest the contracting officer may determine an average overpayment amount and duration as the basis for the interest computation. Interest rates change periodically; therefore, calculate average amounts and durations separately for each interest period that has a different interest rate.

(v) Administrative contracting officers (ACO's) are encouraged to establish advance agreements at contractor locations for float and payment lag times which are common to several contracts. Float and lag times may vary significantly from one contract to another due to variances in efficiency at different payment offices or due to differing procedures for high dollar-value contracts versus low dollar-value contracts. Therefore, it may be appropriate to establish advance agreements on several different float and lag profiles to suit different contract situations.

(4) Rate Review.

(i) The flexible progress payments clause provides for redetermination of the flexible progress payment rate whenever the computed investment percentage is more than two points above or below the specified minimum investment. When such a redetermination is made--

(A) Apply the new flexible progress payment rate to the next contractor progress payment request; and

(B) Adjust the unliquidated progress payment balance.

(ii) Either the Government or the contractor may request a rate review at any time to determine if the computed investment percentage is outside the investment tolerance in paragraph (4)(i) of this subsection.

(iii) The ACO shall assess changes in the following factors during each periodic review required by FAR 32.503-5 and shall review the flexible rate whenever there has been--

(A) A significant change in the float or lag factors;

(B) A significant change in the delivery schedule; or

(C) Substantial work added to or deleted from the contract.

(5) Letter Contracts and Undefinitized Orders. When flexible progress payments are contemplated for use on a definitive contract superseding a letter contract or an unpriced BOA order, the applicable uniform customary progress payment rate shall be used until definitization. The flexible progress payment rate shall be determined by the contracting officer before definitization of the contract or order.

(6) Availability of CASH Program and User's Guide. The flexible progress payment program CASH and the User's Guide are available to offerors and contractors from the contracting officer. Contracting officers shall obtain copies from agency managements.

232.502-2 Contract Finance Office Clearance. Deviation from the Progress Payment clause, policy and procedures prescribed in FAR Part 32 and this Supplement shall be authorized only by the Office of The Assistant Secretary of Defense (Production and Logistics) in accordance with 232.171.

232.502-4 Contract Clauses.

(S-70) The contracting officer shall insert the clause at 252.232-7003, Progress Payments for Foreign Military Sales Acquisitions, in any contract that provides for progress payments and contains FMS requirements.

(S-71) The contracting officer shall insert the clause at 252.232-7004, Flexible Progress Payments, when a flexible progress payment rate is used in the contract. If the contract is funded with FY 87 appropriations, the clause shall be used with its Alternate I.

(S-72) The contracting officer shall insert the clause at 252.232-7007, Progress Payments, in lieu of FAR clause 52.232-16 and its Alternates I and II, as applicable, in solicitations and fixed- price contracts under which the Government will provide progress payments based on costs if the contract is funded with FY 87 appropriations. The FAR clause at 52.232-16 and its Alternates I and II shall be used, as applicable, for all other solicitations and fixed-price contracts.

(S-73) If the contract is with a small business concern, the contracting officer shall use the clause at 252.232-7007, Progress Payments, with its Alternate I if the contract is funded with FY 87 appropriations. The FAR clause at 252.232-16, with its Alternate I, shall be used for all other fixed-price contracts with small business concerns.

(S-74) If the contract is a letter contract, the contracting officer shall use the clause with its Alternate II if the contract is funded with FY 87 appropriations. The FAR clause at 52.232-16, with its Alternate II, shall be used for all other letter contracts.

(S-75) If the contract is with a small disadvantaged business concern, the contracting officer shall use the FAR clause at 52.232-16, with its Alternate I, and shall change each mention of the progress payment and liquidation rates (excepting paragraph (k)) to the customary rate of 90 percent for small disadvantaged business concerns.

232.503 Postaward Matters.

232.503-1 Contractor Requests. Subject to the specific requirements of agency procedures, contractor requests for progress payments may be submitted by computer generated equivalents of the Standard Form 1443.

232.503-6 Suspension or Reduction of Payments.

(g) Loss Contracts.

(S-70) Loss Ratio Adjustment Procedures. The following procedures shall be followed whenever the adjustments required by FAR 32.503-6(f) and (g) are made:

(i) Except as provided in paragraph (ii) below, the loss ratio adjustment shall be calculated by the contracting officer using the procedures in FAR 32.503-6(g) by preparation of a supplementary analysis to the contractor's request for progress payments;

(ii) The Contractor may be requested to prepare the supplementary analysis as an attachment to the progress payment request, when the contracting officer determines, after a review, that the contractor's

APPENDIX E

FAR Part 52.216
(Selected Clauses)

appropriate Government representative and Contractor shall establish the final indirect cost rates as promptly as practical after receipt of the Contractor's proposal.

(3) The Contractor and the appropriate Government representative shall execute a written understanding setting forth the final indirect cost rates. The understanding shall specify (i) the agreed-upon final annual indirect cost rates, (ii) the bases to which the rates apply, (iii) the periods for which the rates apply, (iv) any specific indirect cost items treated as direct costs in the settlement, and (v) the affected contract and/or subcontract, identifying any with advance agreements or special terms and the applicable rates. The understanding shall not change any monetary ceiling, contract obligation, or specific cost allowance or disallowance provided for in this contract. The understanding is incorporated into this contract upon execution.

(4) Failure by the parties to agree on a final annual indirect cost rate shall be a dispute within the meaning of the Disputes clause.

(e) *Billing rates.* Until final annual indirect cost rates are established for any period, the Government shall reimburse the Contractor at billing rates established by the Contracting Officer or by an authorized representative (the cognizant auditor), subject to adjustment when the final rates are established. These billing rates—

(1) Shall be the anticipated final rates; and

(2) May be prospectively or retroactively revised by mutual agreement, at either party's request, to prevent substantial overpayment or underpayment.

(f) *Quick-closeout procedures.* When the Contractor and Contracting Officer agree, the quick-closeout procedures of Subpart 42.7 of the FAR may be used.

(g) *Audit.* At any time or times before final payment, the Contracting Officer may have the Contractor's invoices or vouchers and statements of cost audited. Any payment may be (1) reduced by amounts found by the Contracting Officer not to constitute allowable costs or (2) adjusted for prior overpayments or underpayments.

(h) *Final payment.* (1) The Contractor shall submit a completion invoice or voucher, designated as such, promptly upon completion of the work, but no later than one year (or longer, as the Contracting Officer may approve in writing) from the completion date. Upon approval of that invoice or voucher, and upon the Contractor's compliance with all terms of this contract, the Government shall promptly pay any balance of allowable costs and that part of the fee (if any) not previously paid.

(2) The Contractor shall pay to the Government any refunds, rebates, credits, or other amounts (including interest, if any) accruing to or received by the Contractor or any assignee under this contract, to the extent that those amounts are properly allocable to costs for which the Contractor has been reimbursed by the Government. Reasonable expenses incurred by the Contractor for securing refunds, rebates, credits, or other amounts shall be allowable costs if approved by the Contracting Officer. Before final payment under this contract, the Contractor and each assignee whose assignment is in effect at the time of final payment shall execute and deliver—

(i) An assignment to the Government, in form and substance satisfactory to the Contracting Officer, of refunds, rebates, credits, or other amounts (including interest, if any) properly allocable to costs for which the Contractor has been reimbursed by the Government under this contract; and

(ii) A release discharging the Government, its officers, agents, and employees from all liabilities, obligations, and claims arising out of or under this contract, except—

(A) Specified claims stated in exact amounts, or in estimated amounts when the exact amounts are not known;

(B) Claims (including reasonable incidental expenses) based upon liabilities of the Contractor to third parties arising out of the performance of this contract; *provided,* that the claims are not known to the Contractor on the date of the execution of the release, and that the Contractor gives notice of the claims in writing to the Contracting Officer within 6 years following the release date or notice of final payment date, whichever is earlier; and

(C) Claims for reimbursement of costs, including reasonable incidental expenses, incurred by the Contractor under the patent clauses of this contract, excluding, however, any expenses arising from the Contractor's indemnification of the Government against patent liability.

(End of clause)

(R 7-203.4(a) 1978 SEP)
(R 7-203.4(b) 1979 MAR)
(R 7-203.4(c)(4)(iv))
(R 7-402.3(a) and (c)(5)(iii))
(R 7-605.5)
(R 7-1909.4)
(R 1-7.202-4)
(R 1-7.203-9)
(R 1-3.704-1 and -2)
(R 1-7.402-3(a) and (b)(1) and (3))
(R 1-7.403-9)

52.216-8 Fixed Fee.

As prescribed in 16.307(b), insert the following clause in solicitations and contracts when a cost-plus-fixed-fee contract (other than a facilities contract or a construction contract) is contemplated.

FIXED FEE (APR 1984)

(a) The Government shall pay the Contractor for performing this contract the fixed fee specified in the Schedule.

(b) Payment of the fixed fee shall be made as specified in the Schedule; *provided*, that after payment of 85 percent of the fixed fee, the Contracting Officer may withhold further payment of fee until a reserve is set aside in an amount that the Contracting Officer considers necessary to protect the Government's interest. This reserve shall not exceed 15 percent of the total fixed fee or $100,000, whichever is less.

(End of clause)
(R 7-203.4(a) 1978 SEP)
(R 7-203.4(c)(9))
(R 7-402.3(a) and (c)(7))
(R 7-1909.4)
(R 1-7.202-4)
(R 1-7.402-3(a) and (b)(5))

52.216-9 Fixed Fee—Construction.

As prescribed in 16.307(c), insert the following clause in solicitations and contracts when a cost-plus-fixed-fee construction contract in contemplated:

FIXED FEE—CONSTRUCTION (APR 1984)

(a) The Government shall pay to the Contractor for performing this contract the fixed fee specified in the Schedule.

(b) Payment of the fixed fee shall be made in installments based upon the percentage of completion of the work as determined from estimates submitted to and approved by the Contracting Officer, but subject to the withholding provisions of paragraph (c) below.

(c) After the payment of 85 percent of the fixed fee, the Contracting Officer may withhold further payment of fee until a reserve is set aside in an amount that the Contracting Officer considers necessary to protect the Government's interest. This reserve shall not exceed 15 percent of the total fixed fee or $100,000, whichever is less.

(End of clause)
(R 7-203.4(a) 1978 SEP)
(R 7-605.5)

52.216-10 Incentive Fee.

As prescribed in 16.307(d), insert the following clause in solicitations and contracts when a cost-plus-incentive-fee contract (other than a facilities contract) is contemplated:

INCENTIVE FEE (APR 1984)

(a) *General.* The Government shall pay the Contractor for performing this contract a fee determined as provided in this contract.

(b) *Target cost and target fee.* The target cost and target fee specified in the Schedule are subject to adjustment if the contract is modified in accordance with paragraph (d) below.

(1) "Target cost," as used in this contract, means the estimated cost of this contract as initially negotiated, adjusted in accordance with paragraph (d) below.

(2) "Target fee," as used in this contract, means the fee initially negotiated on the assumption that this contract would be performed for a cost equal to the estimated cost initially negotiated, adjusted in accordance with paragraph (d) below.

(c) *Withholding of payment.* Normally, the Government shall pay the fee to the Contractor as specified in the Schedule. However, when the Contracting Officer considers that performance or cost indicates that the Contractor will not achieve target, the Government shall pay on the basis of an appropriate lesser fee. When the Contractor demonstrates that performance or cost clearly indicates that the Contractor will earn a fee significantly above the target fee, the Government may, at the sole discretion of the Contracting Officer, pay on the basis of an appropriate higher fee. After payment of 85 percent of the applicable fee, the Contracting Officer may withhold further payment of fee until a reserve is set aside in an amount that the Contracting Officer considers necessary to protect the Government's interest. This reserve shall not exceed 15 percent of the applicable fee or $100,000, whichever is less.

(d) *Equitable adjustments.* When the work under this contract is increased or decreased by a modification to this contract or when any equitable adjustment in the target cost is authorized under any other clause, equitable adjustments in the target cost, target fee, minimum fee, and maximum fee, as appropriate, shall be stated in a supplemental agreement to this contract.

(e) *Fee payable.* (1) The fee payable under this contract shall be the target fee increased by ..... [*Contracting Officer insert Contractor's participation*] cents for every dollar that the total allowable cost is less than the target cost or decreased by ...... [*Contracting Officer insert Contractor's participation*] cents for every dollar that the total allowable cost exceeds the target cost. In no event shall the fee be greater than . . . . [*Contracting Officer insert percentage*] percent or less than . . . . [*Contracting Officer insert percentage*] percent of the target cost.

(2) The fee shall be subject to adjustment, to the extent provided in paragraph (d) above, and within the minimum and maximum fee limitations in subparagraph (1) above, when the total allowable cost is increased or decreased as a consequence of (i) payments made under assignments or (ii) claims excepted from the release as required by paragraph (h)(2) of the Allowable Cost and Payment clause.

(3) If this contract is terminated in its entirety, the portion of the target fee payable shall not be subject to an increase or decrease as provided in this paragraph. The termination shall be accomplished in accordance with other applicable clauses of this contract.

(4) For the purpose of fee adjustment, "total allowable cost" shall not include allowable costs arising out of—

(i) Any of the causes covered by the Excusable Delays clause to the extent that they are beyond the control and without the fault or negligence of the Contractor or any subcontractor;

(ii) The taking effect, after negotiating the target cost, of a statute, court decision, written ruling, or regulation that results in the Contractor's being required to pay or bear the burden of any tax or duty or rate increase in a tax or duty;

(iii) Any direct cost attributed to the Contractor's involvement in litigation as required by the Contracting Officer pursuant to a clause of this contract, including furnishing evidence and information requested pursuant to the Notice and Assistance Regarding Patent and Copyright Infringement clause;

(iv) The purchase and maintenance of additional insurance not in the target cost and required by the Contracting Officer, or claims for reimbursement for liabilities to third persons pursuant to the Insurance Liability to Third Persons clause;

(v) Any claim, loss, or damage resulting from a risk for which the Contractor has been relieved of liability by the Government Property clause; or

(vi) Any claim, loss, or damage resulting from a risk defined in the contract as unusually hazardous or as a nuclear risk and against which the Government has expressly agreed to indemnify the Contractor.

(5) All other allowable costs are included in "total allowable cost" for fee adjustment in accordance with this paragraph (e), unless otherwise specifically provided in this contract.

(f) *Contract modification.* The total allowable cost and the adjusted fee determined as provided in this clause shall be evidenced by a modification to this contract signed by the Contractor and Contracting Officer.

(g) *Inconsistencies.* In the event of any language inconsistencies between this clause and provisioning documents or Government options under this contract, compensation for spare parts or other supplies and services ordered under such documents shall be determined in accordance with this clause.

(End of clause)
(R 7-203.4(b) 1979 MAR)
(R 7-203.4(c)(6) and (9))

52.216-11 Cost Contract—No Fee.

As prescribed in 16.307(e), insert the clause in solicitations and contracts when a cost-reimbursement contract is contemplated that provides no fee and is not a cost-sharing contract or a facilities contract. This clause may be modified by substituting "$10,000" in lieu of "$100,000" as the maximum reserve in paragraph (b) if the Contractor is a nonprofit organization.

COST CONTRACT—NO FEE (APR 1984)

(a) The Government shall not pay the Contractor a fee for performing this contract.

(b) After payment of 80 percent of the total estimated cost shown in the Schedule, the Contracting Officer may withhold further payment of allowable cost until a reserve is set aside in an amount that the Contracting Officer considers necessary to protect the Government's interest. This reserve shall not exceed one percent of the total estimated cost shown in the Schedule or $100,000, whichever is less.

(End of clause)
(R 7-203.4(a) 1978 SEP)
(R 7-203.4(c)(4) and (9))
(R 7-402.3(c)(5)(ii), (iii), and (7))
(R 7-1909.4)
(R 1-7.402-3(b))

Alternate I (APR 1984). In a contract for research and development with an educational institution or a nonprofit organization, for which the Contracting Officer has determined that withholding of a portion of allowable costs is not required, delete paragraph (b) of the basic clause.

(R 7-203.4(a) 1978 SEP)
(R 7-402.3(c)(8))

52.216-12 Cost-Sharing Contract—No Fee.

As prescribed in 16.307(f), insert the following clause in solicitations and contracts when a cost-sharing contract (other than a facilities contract) is contemplated. This clause may be modified by substituting "$10,000" in lieu of "$100,000" as the maximum reserve in paragraph (b) if the contract is with a nonprofit organization.

COST-SHARING CONTRACT—NO FEE (APR 1984)

(a) The Government shall not pay to the Contractor a fee for performing this contract.

(b) After paying 80 percent of the Government's share of the total estimated cost of performance shown in the Schedule, the Contracting Officer may withhold further payment of allowable cost until a reserve is set aside in an amount that the Contracting Officer considers necessary to protect the Government's interest. This reserve shall not exceed one percent of the Government's share of the total estimated cost shown in the Schedule or $100,000, whichever is less.

(End of clause)
(R 7-203.4(a) 1978 SEP)
(R 7-203.4(c)(4) and (9))
(R 7-402.3(c)(5),(6) and (7))
(R 1-7.402-3)

Alternate I (APR 1984). In a contract for research and development with an educational institution, for which the contracting officer has determined that withholding of a portion of allowable cost is not required, delete paragraph (b) of the basic clause.

(R 7-402.3(c)(8))

52.216-13 Allowable Cost and Payment—Facilities.

As prescribed in 16.307(g), insert the following clause in solicitations and contracts when a consolidated facilities contract or a cost-reimbursement facilities acquisition contract (see 45.302-6) is contemplated:

ALLOWABLE COST AND PAYMENT—FACILITIES (APR 1984)

(a) *General.* (1) For the performance of any work, duty, or obligation specified in this contract to be at Government expense, the Government shall pay the Contractor all allowable costs as determined by the Contracting Officer in accordance with the contract terms and section 31.106 of the Federal Acquisition Regulation (FAR) in effect on the contract date.

(2) Except as otherwise specifically provided in this contract, the failure of this contract to provide for reimbursement does not preclude the Contractor from including, as part of the price or cost under any other Government contract or subcontract, an allocable portion of the costs incurred for any work, duty, or obligation performed under this contract, but not under it.

(b) *Invoicing.* The Government shall make payments to the Contractor when requested once each month. The Contractor may submit to an authorized representative of the Contracting Officer, in such form and reasonable detail as the representative may require, an invoice or voucher supported by a statement of the claimed allowable cost for the performance of this contract.

(c) *Negotiated indirect costs.* Notwithstanding the audit and adjustment of invoices or vouchers under paragraph (f) below, allowable indirect costs under this contract shall be obtained by applying final indirect cost rates established as follows:

(1) Final annual indirect cost rates and the appropriate bases shall be established in accordance with Subpart 42.7 of the FAR in effect for the period covered by the indirect cost rate proposal.

(2) The Contractor shall, within 90 days after the expiration of each of its fiscal years, or by a later date approved by the Contracting Officer, submit to the Contracting Officer and to the cognizant audit activity proposed final indirect cost rates for that period and supporting cost and data specifying the contract and/or subcontract to which the rates apply. The proposed rates shall be based on the Contractor's actual cost experience for that period. The appropriate Government representative and the Contractor shall establish the final indirect cost rates as promptly as practical after receipt of the contractor's proposal. The Contractor shall submit an executed Certificate of Current Cost or Pricing Data (in the form prescribed by subsection 15.804-4 of the FAR) applicable to the data furnished in connection with the final indirect cost rates.

(3) The Contractor and the appropriate Government representative shall execute a written understanding setting forth the final indirect cost rates. The understanding shall specify (i) the agreed-upon final annual indirect cost rates, (ii) the bases to which the rates apply, (iii) the periods for which the rates apply, (iv) any specific indirect cost items treated as direct costs in the settlement, and (v) the affected contract and/or subcontract, identifying any with advance agreements or special terms and the applicable rates. The understanding shall not change any monetary ceiling, contract obligation, or specific cost allowance or disallowance provided for in this contract. The understanding is incorporated into this contract upon execution.

(4) Failure by the parties to agree on a final annual indirect cost rate shall be a dispute within the meaning of the Disputes clause.

(d) *Billing rates.* Until final annual indirect cost rates are established for any period, the Government shall reimburse the Contractor at billing rates established by the Contracting Officer or by an authorized representative (the cognizant auditor), subject to adjustment when the final rates are established. These billing rates—

(1) Shall be the anticipated final rates; and

(2) may be prospectively or retroactively revised by mutual agreement, at either party's request, to prevent substantial overpayment or underpayment.

(e) *Quick-closeout procedures.* When the Contractor and Contracting Officer agree, the quick-closeout procedures of Subpart 42.7 of the FAR may be used.

(f) *Audit.* At any time or times before final payment, the Contracting Officer may have the Contractor's invoices or vouchers and statements of cost audited. Any payment may be (1) reduced by amounts found by the Contracting Officer not to constitute allowable costs or (2) adjusted for prior overpayments or underpayments.

(g) *Assignments and releases.* The Contractor shall pay to the Government any refunds, rebates, credits, or other amounts (including interest, if any) accruing to or received by the Contractor or any assignee under this contract to the extent that those amounts are properly allocable to costs for which the Contractor has been reimbursed by the Government. Reasonable expenses incurred by the Contractor for securing refunds, rebates, credits, or other amounts shall be allowable costs if approved by the Contracting Officer. Before final payment under this contract, the Contractor and each assignee shall execute and deliver—

(1) An assignment to the Government, in form and substance satisfactory to the Contracting Officer, of refunds, rebates, credits or other amounts (including interest, if any) properly allocable to costs for which the Contractor has been reimbursed by the Government under this contract; and

(2) A release discharging the Government, its officers, agents, and employees from all liabilities, obligations, and claims arising out of or under this contract, except—

(i) Specified claims stated in exact amounts, or in estimated amounts when the exact amounts are not known;

(ii) Claims (including reasonable incidental expenses) based upon liabilities of the Contractor to third parties arising out of performance of this contract; *provided* that the claims are not known to the Contractor on the date of the execution of the release, and that the Contractor gives notice of the claims in writing to the Contracting Officer within 6 years following the release date or notice of final payment date, whichever is earlier; and

(iii) Claims for reimbursement of costs, including related expenses, incurred by the Contractor under the patent clauses of this contract, excluding, however, any expenses arising from the Contractor's indemnification of the Government against patent liability.

(End of clause)

(R 7-702.10 1978 AUG)

Alternate I (APR 1984). If the contract is for facilities acquisition, and the Contracting Officer considers it appropriate, add the following paragraphs (g) and (h) to the basic clause, and redesignate paragraph (g) of the basic clause as paragraph (i):

(g) *Withholding*. After payment of 80 percent of the total estimated cost shown in the Schedule, the Contracting Officer may withhold payment of allowable costs until a reserve is set aside in an amount that the Contracting Officer considers necessary to protect the Government's interest. This reserve shall not exceed one percent of the total estimated cost shown in the Schedule or $100,000, whichever is less.

(h) *Final payment*. The Contractor shall submit a completion invoice or voucher, designated as such, no later than one year (or longer, as the Contracting Officer may approve in writing) from the completion date. Upon approval of the invoice or voucher, and upon the Contractor's compliance with all terms of this contract, the Government shall promptly pay any balance of allowable costs not previously paid.

(R 7-702.10 1978 AUG)

(R 7-703.9)

52.216-14 Allowable Cost and Payment—Facilities Use.

As prescribed in 16.307(h), insert the following clause in solicitations and contracts when a facilities use contract is contemplated:

ALLOWABLE COST AND PAYMENT—FACILITIES USE (APR 1984)

(a) For the performance of any work, duty, or obligations specified in this contract to be at Government expense, the Government shall pay the Contractor all allowable costs as determined by the Contracting Officer in accordance with the contract terms and section 31.106 of the Federal Acquisition Regulation (FAR) in effect on the contract date.

(b) Except as otherwise specifically provided in this contract, the failure of this contract to provide for reimbursement does not preclude the Contractor from including, as part of the price or cost under any other Government contract or subcontract, an allocable portion of the costs incurred for any work, duty, or obligation performed under this contract, but not reimbursed under it.

(End of clause)

(R 7-704.3 1965 JUL)

52.216-15 Predetermined Indirect Cost Rates.

As prescribed in 16.307(i), insert the following clause in solicitations and contracts when a cost-reimbursement research and development contract with an educational institution is contemplated and predetermined indirect cost rates are to be used. If the contract is a facilities contract, modify paragraph (c) by deleting the words "Subpart 31.3" and substituting for them "section 31.106."

PREDETERMINED INDIRECT COST RATES (APR 1984)

(a) Notwithstanding the Allowable Cost and Payment clause of this contract, the allowable indirect costs under this contract shall be obtained by applying predetermined indirect cost rates to bases agreed upon by the parties, as specified below.

(b) Not later than 90 days after the expiration of the Contractor's fiscal year, the Contractor shall submit to the cognizant Contracting Officer under Subpart 42.7 of the Federal Acquisition Regulation (FAR) and, if required by agency procedures, to the cognizant Government audit activity, proposed predetermined indirect cost rates and supporting cost data. The proposed rate shall be based on the Contractor's actual cost experience during that fiscal year. Negotiations of predetermined indirect cost rates shall begin as soon as practical after receipt of the contractor's proposal.

(c) Allowability of costs and acceptability of cost allocation methods shall be determined in accordance with FAR Subpart 31.3 in effect on the date of this contract.

(d) Predetermined rate agreements in effect on the date of this contract shall be incorporated into the contract Schedule. The Contracting Officer and Contractor shall negotiate rates for subsequent periods and execute a written indirect cost rate agreement setting forth the results. The agreement shall specify (1) the agreed-upon predetermined indirect cost rates, (2) the bases to which the rates apply, (3) the fiscal year (unless the parties agree to a different period) for which the rates apply, and (4) the specific items treated as direct costs or any changes in the items previously agreed to be direct costs. The indirect cost rate agreement shall not change any monetary ceiling, contract obligation, or specific cost allowance or disallowance provided for in this contract. The agreement is incorporated into this contract upon execution.

(e) Pending establishment of predetermined indirect cost rates for any fiscal year (or other period agreed to by the parties), the Contractor shall be reimbursed either at the rates fixed for the previous fiscal year (or other period) or at billing rates acceptable to the Contracting Officer, subject to appropriate adjustment when the final rates for that period are established.

(f) Any failure by the parties to agree on any predetermined indirect cost rates under this clause shall not be considered a dispute within the meaning of the Disputes clause. If for any fiscal year (or other period specified in the Schedule) the parties fail to agree to predetermined indirect cost rates, the allowable indirect costs shall be obtained by applying final indirect cost rates established in accordance with the Allowable Cost and Payment clause.

(g) Allowable indirect costs for the period from the beginning of performance until the end of the Contractor's fiscal year shall be obtained using the predetermined indirect cost rates and the bases shown in the Schedule.

(End of clause)

(R 7-403.9 1978 AUG)

52.216-16 Incentive Price Revision—Firm Target.

As prescribed in 16.405(a), insert the following clause in solicitations and contracts when a fixed-price incentive (firm target) contract is contemplated. For items to be subject to incentive price revision, show in the contract Schedule the target cost, target profit, and target price for each item.

INCENTIVE PRICE REVISION—FIRM TARGET (APR 1984)

(a) *General.* The supplies or services identified in the Schedule as Items .... [*Contracting Officer insert Schedule line item numbers*] are subject to price revision in accordance with this clause; provided, that in no event shall the total final price of these items exceed the ceiling price of .... dollars ($ .....). Any supplies or services that are to be (1) ordered separately under, or otherwise added to, this contract and (2) subject to price revision in accordance with the terms of this clause shall be identified as such in a modification to this contract.

(b) *Definition.* "Costs," as used in this clause, means allowable costs in accordance with Part 31 of the Federal Acquisition Regulation (FAR) in effect on the date of this contract.

(c) *Data submission.* (1) Within .... [*Contracting Officer insert number of days*] days after the end of the month in which the Contractor has delivered the last unit of supplies and completed the services specified by item number in paragraph (a) above, the Contractor shall submit on Standard Form 1411 or in any other form on which the parties agree—

(i) A detailed statement of all costs incurred up to the end of that month in performing all work under the items;

(ii) An estimate of costs of further performance, if any, that may be necessary to complete performance of all work under the items;

(iii) A list of all residual inventory and an estimate of its value; and

(iv) Any other relevant data that the Contracting Officer may reasonably require.

(2) If the Contractor fails to submit the data required by subparagraph (1) above within the time specified and it is later determined that the Government has overpaid the Contractor, the Contractor shall repay the excess to the Government immediately. Unless repaid within 30 days after the end of the data submittal period, the amount of the excess shall bear interest, computed from the date the data were due to the date of repayment, at the rate established in accordance with the Interest clause.

(d) *Price revision.* Upon the Contracting Officer's receipt of the data required by paragraph (c) above, the Contracting Officer and the Contractor shall promptly establish the total final price of the items specified in (a) above by applying to final negotiated cost an adjustment for profit or loss, as follows:

(1) On the basis of the information required by paragraph (c) above, together with any other pertinent information, the parties shall negotiate the total final cost incurred or to be incurred for supplies delivered (or services performed) and accepted by the Government and which are subject to price revision under this clause.

(2) The total final price shall be established by applying to the total final negotiated cost an adjustment for profit or loss, as follows:

(i) If the total final negotiated cost is equal to the total target cost, the adjustment is the total target profit.

(ii) If the total final negotiated cost is greater than the total target cost, the adjustment is the total target profit, less .... [*Contracting Officer insert percent*] percent of the amount by which the total final negotiated cost exceeds the total target cost.

(iii) If the final negotiated cost is less than the total target cost, the adjustment is the total target profit plus .... [*Contracting Officer insert percent*] percent of the amount by which the total final negotiated cost is less than the total target cost.

(e) *Contract modification.* The total final price of the items specified in paragraph (a) above shall be evidenced by a modification to this contract, signed by the Contractor and the Contracting Officer. This price shall not be subject to revision, notwithstanding any changes in the cost of performing the contract, except to the extent that—

(1) The parties may agree in writing, before the determination of total final price, to exclude specific elements of cost from this price and to a procedure for subsequent disposition of those elements; and

(2) Adjustments or credits are explicitly permitted or required by this or any other clause in this contract.

(f) *Adjusting billing prices.* (1) Pending execution of the contract modification (see paragraph (e) above), the Contractor shall submit invoices or vouchers in accordance with billing prices as provided in this paragraph. The billing prices shall be the target prices shown in this contract.

(2) If at any time it appears from information provided by the contractor under subparagraph (g)(2) below that the then-current billing prices will be substantially greater than the estimated final prices, the parties shall negotiate a reduction in the billing prices. Similarly, the parties may negotiate an increase in billing prices by any or all of the difference between the target prices and the ceiling price, upon the Contractor's submission of factual data showing that final cost under this contract will be substantially greater than the target cost.

(3) Any billing price adjustment shall be reflected in a contract modification and shall not affect the determination of the total final price under paragraph (d) above. After the contract modification establishing the total final price is executed, the total amount paid or to be paid on all invoices or vouchers shall be adjusted to reflect the total final price, and any resulting additional payments, refunds, or credits shall be made promptly.

(g) *Quarterly limitation on payments statement.* This paragraph (g) shall apply until final price revision under this contract has been completed.

(1) Within 45 days after the end of each quarter of the Contractor's fiscal year in which a delivery is first made (or services are first performed) and accepted by the Government under this contract, and for each quarter thereafter, the Contractor shall submit to the contract administration office (with a copy to the contracting office and the cognizant contract auditor) a statement, cumulative from the beginning of the contract, showing—

(i) The total contract price of all supplies delivered (or services performed) and accepted by the Government and for which final prices have been established;

(ii) The total costs (estimated to the extent necessary) reasonably incurred for, and properly allocable solely to, the supplies delivered (or services performed) and accepted by the Government and for which final prices have not been established;

(iii) The portion of the total target profit (used in establishing the initial contract price or agreed to for the purpose of this paragraph (g)) that is in direct proportion to the supplies delivered (or services performed) and accepted by the Government and for which final prices have not been established —increased or decreased in accordance with subparagraph (d)(2) above, when the amount stated under subdivision (ii), immediately above, differs from the aggregate target costs of the supplies or services; and

(iv) The total amount of all invoices or vouchers for supplies delivered (or services performed) and accepted by the Government (including amounts applied or to be applied to liquidate progress payments).

(2) Notwithstanding any provision of this contract authorizing greater payments, if on any quarterly statement the amount under subdivision (1)(iv) above exceeds the sum due the Contractor, as computed in accordance with subdivisions (1)(i), (ii), and (iii) above, the Contractor shall immediately refund or credit to the Government the amount of this excess. The Contractor may, when appropriate, reduce this refund or credit by the amount of any applicable tax credits due the Contractor under 26 U.S.C. 1481 and by the amount of previous refunds or credits effected under this clause. If any portion of the excess has been applied to the liquidation of progress payments, then that portion may, instead of being refunded, be added to the unliquidated progress payment account consistent with the Progress Payments clause. The Contractor shall provide complete details to support any claimed reductions in refunds.

(3) If the Contractor fails to submit the quarterly statement within 45 days after the end of each quarter and it is later determined that the Government has overpaid the Contractor, the Contractor shall repay the excess to the Government immediately. Unless repaid within 30 days after the end of the statement submittal period, the amount of the excess shall bear interest, computed from the date the quarterly statement was due to the date of repayment, at the rate established in accordance with the Interest clause.

(h) *Subcontracts.* No subcontract placed under this contract may provide for payment on a cost-plus-a-percentage-of-cost basis. The Contractor shall—

(1) Insert in each price redetermination or incentive price revision subcontract the substance of paragraph (g), above, and of this paragraph (h), modified to omit mention of the Government and to reflect the position of the Contractor as purchaser and of the subcontractor as vendor, and to omit that part of subparagraph (g)(2) above relating to tax credits; and

(2) Include in each cost-reimbursement subcontract a requirement that each lower-tier price redetermination or incentive price revision subcontract contain the substance of paragraph (g) above and of this paragraph (h), modified as required by subparagraph (1) above.

(i) *Disagreements.* If the Contractor and the Contracting Officer fail to agree upon the total final price within 60 days (or within such other period as the Contracting Officer may specify) after the date on which the data required by paragraph (c) above are to be submitted, the Contracting Officer shall promptly issue a decision in accordance with the Disputes clause.

(j) *Termination.* If this contract is terminated before the total final price is established, prices of supplies or services subject to price revision shall be established in accordance with this clause for (1) completed supplies and services accepted by the Government and (2) those supplies and services not terminated under a partial termination. All other elements of the termination shall be resolved in accordance with other applicable clauses of this contract.

(k) *Equitable adjustment under other clauses.* If an equitable adjustment in the contract price is made under any other clause of this contract before the total final price is established, the adjustment shall be made in the total target cost and may be made in the maximum dollar limit on the total final price, the total target profit, or both. If the adjustment is made after the total final price is established, only the total final price shall be adjusted.

(l) *Exclusion from target price and total final price.* If any clause of this contract provides that the contract price does not or will not include an amount for a specific purpose, then neither any target price nor the total final price includes or will include any amount for that purpose.

(m) *Separate reimbursement.* If any clause of this contract expressly provides that the cost of performance of an obligation shall be at Government expense, that expense shall not be included in any target price or in the total final price, but shall be reimbursed separately.

(n) *Taxes.* As used in the Federal, State, and Local Taxes clause or in any other clause that provides for certain taxes or duties to be included in, or excluded from, the contract price, the term "contract price" includes the total target price or, if it has been established, the total final price. When any of these clauses requires that the contract price be increased or decreased as a result of changes in the obligation of the Contractor to pay or bear the burden of certain taxes or duties, the increase or decrease shall be made in the total target price or, if it has been established, in the total final price, so that it will not affect the Contractor's profit or loss on this contract.

(End of clause)

(R 7-108.1 1980 FEB)

Alternate I (APR 1984). If the contract calls for supplies or services to be ordered under a provisioning document or Government option and the prices are to be subject to the incentive price revision described in the basic clause, add the following paragraph (o) to the basic clause:

(o) *Provisioning and options.* Parts, other supplies, or services that are to be furnished under this contract on the basis of a provisioning document or Government option shall be subject to price revision in accordance with this clause. Any prices established for these parts, other supplies, or services under a provisioning document or Government option shall be treated as target prices. Target cost and profit covering these parts, other supplies, or services may be established separately, in the aggregate, or in any combination, as the parties may agree.

(R 7-108.1 1980 FEB)

52.216-17 Incentive Price Revision—Successive Targets.

As prescribed in 16.405(b), insert the following clause in solicitations and contracts when a fixed-price incentive (successive target) contract is contemplated. For items to be subject to incentive price revision, show in the contract Schedule the initial target cost, initial target profit, and initial target price for each item.

INCENTIVE PRICE REVISION—SUCCESSIVE TARGETS (APR 1984)

(a) *General.* The supplies or services identified in the Schedule as Items .... [*Contracting Officer insert line item numbers*] are subject to price revision in accordance with this clause; provided, that in no event shall the total final price of these items exceed the ceiling price of .... dollars ($ .....). The prices of these items shown in the Schedule are the initial target prices, which include an initial target profit of .... [*Contracting Officer insert percent of*] percent of the the initial target cost. Any supplies or services that are to be (1) ordered separately under, or otherwise added to, this contract and (2) subject to price revision in accordance with this clause shall be identified as such in a modification to this contract.

(b) *Definition.* "Costs," as used in this clause, means allowable costs in accordance with Part 31 of the Federal Acquisition Regulation (FAR) in effect on the date of this contract.

(c) *Submitting data for establishing the firm fixed price or a final profit adjustment formula.* (1) Within .... [*Contracting Officer insert number of days*] days after the end of the month in which the Contractor has completed ...... [see Note 1], the Contractor shall submit the following data:

(i) A proposed firm fixed price or total firm target price for supplies delivered and to be delivered and services performed and to be performed.

(ii) A detailed statement of all costs incurred in the performance of this contract through the end of the month specified above, on Standard Form 1411 (or in any other form on which the parties may agree), with sufficient supporting data to disclose unit costs and cost trends for—

(A) Supplies delivered and services performed; and

(B) Inventories of work in process and undelivered contract supplies on hand (estimated to the extent necessary).

(iii) An estimate of costs of all supplies delivered and to be delivered and all services performed and to be performed under this contract, using the statement of costs incurred plus an estimate of costs to complete performance, on Standard Form 1411 (or in any other form on which the parties may agree), together with—

(A) Sufficient data to support the accuracy and reliability of the estimate; and

(B) An explanation of the differences between this estimate and the original estimate used to establish the initial target prices.

(2) The Contractor shall also submit, to the extent that it becomes available before negotiations establishing the total firm price are concluded—

(i) Supplemental statements of costs incurred after the end of the month specified in subparagraph (1) above for—

(A) Supplies delivered and services performed; and

(B) Inventories of work in process and undelivered contract supplies on hand (estimated to the extent necessary); and

(ii) Any other relevant data that the Contracting Officer may reasonably require.

(3) If the Contractor fails to submit the data required by subparagraphs (1) and (2) above within the time specified and it is later determined that the Government has overpaid the Contractor, the Contractor shall repay the excess to the Government immediately. Unless repaid within 30 days after the end of the data submittal period, the amount of the excess shall bear interest, computed from the date the data were due to the date of repayment, at the rate established in accordance with the Interest clause.

(d) *Establishing firm fixed price or final profit adjustment formula.* Upon the Contracting Officer's receipt of the data required by paragraph (c) above, the Contracting Officer and the Contractor shall promptly establish either a firm fixed price or a profit adjustment formula for determining final profit, as follows:

(1) The parties shall negotiate a total firm target cost, based upon the data submitted under paragraph (c) above.

(2) If the total firm target cost is more than the total initial target cost, the total initial target profit shall be decreased. If the total firm target cost is less than the total initial target cost, the total initial target profit shall be increased. The initial target profit shall be increased or decreased by .... percent [see Note 2] of the difference between the total initial target cost and the total firm target cost. The resulting amount shall be the total firm target profit; *provided,* that in no event shall the total firm target profit be less than .... percent or more than .... percent [*Contracting Officer insert percents*] of the total initial cost.

(3) If the total firm target cost plus the total firm target profit represent a reasonable price for performing that part of the contract subject to price revision under this clause, the parties may agree on a firm fixed price, which shall be evidenced by a contract modification signed by the Contractor and the Contracting Officer.

(4) Failure of the parties to agree to a firm fixed price shall not constitute a dispute under the Disputes clause. If agreement is not reached, or if establishment of a firm fixed price is inappropriate, the Contractor and the Contracting Officer shall establish a profit adjustment formula under which the total final price shall be established by applying to the total final negotiated cost an adjustment for profit or loss, determined as follows:

(i) If the total final negotiated cost is equal to the total firm target cost, the adjustment is the total firm target profit.

(ii) If the total final negotiated cost is greater than the total firm target cost, the adjustment is the total firm target profit, less .... percent of the amount by which the total final negotiated cost exceeds the total firm target cost.

(iii) If the total final negotiated cost is less than the total firm target cost, the adjustment is the total firm target profit, plus .... percent of the amount by which the total final negotiated cost is less than the total firm target cost.

(iv) The total firm target cost, total firm target profit, and the profit adjustment formula for determining final profit shall be evidenced by a modification to this contract signed by the Contractor and the Contracting Officer.

(e) *Submitting data for final price revision.* Unless a firm fixed price has been established in accordance with paragraph (d) above within .... [*Contracting Officer insert number of days*] days after the end of the month in which the Contractor has delivered the last unit of supplies and completed the services specified by item number in paragraph (a) above, the Contractor shall submit on Standard Form 1411 (or in any other form on which the parties agree)—

(1) A detailed statement of all costs incurred up to the end of that month in performing all work under the items;

(2) An estimate of costs of further performance, if any, that may be necessary to complete performance of all work under the items;

(3) A list of all residual inventory and an estimate of its value; and

(4) Any other relevant data that the Contracting Officer may reasonably require.

(f) *Final price revision.* Unless a firm fixed price has been agreed to in accordance with paragraph (d) above, the Contractor and the Contracting Officer shall, promptly after submission of the data required by paragraph (e) above, establish the total final price, as follows:

(1) On the basis of the information required by paragraph (e) above, together with any other pertinent information, the parties shall negotiate the total final cost incurred or to be incurred for the supplies delivered (or services performed) and accepted by the Government and which are subject to price revision under this clause.

(2) The total final price shall be established by applying to the total final negotiated cost an adjustment for

final profit or loss determined as agreed upon under subparagraph (d)(4) above.

(g) *Contract modification.* The total final price of the items specified in paragraph (a) above shall be evidenced by a modification to this contract, signed by the Contractor and the Contracting Officer. This price shall not be subject to revision, notwithstanding any changes in the cost of performing the contract, except to the extent that—

(1) The parties may agree in writing, before the determination of total final price, to exclude specific elements of cost from this price and to a procedure for subsequent disposition of these elements; and

(2) Adjustments or credits are explicitly permitted or required by this or any other clause in this contract.

(h) *Adjustment of billing prices.* (1) Pending execution of the contract modification (see paragraph (e) above), the Contractor shall submit invoices or vouchers in accordance with billing prices as provided in this paragraph. The billing prices shall be the initial target prices shown in this contract until firm target prices are established under paragraph (d) above. When established, the firm target prices shall be used as the billing prices.

(2) If at any time it appears from information provided by the contractor under subparagraph (i)(1) below that the then-current billing prices will be substantially greater than the estimated final prices, the parties shall negotiate a reduction in the billing prices. Similarly, the parties may negotiate an increase in billing prices by any or all of the difference between the target prices and the ceiling price, upon the Contractor's submission of factual data showing that the final cost under this contract will be substantially greater than the target cost.

(3) Any adjustment of billing prices shall be reflected in a contract modification and shall not affect the determination of any price under paragraph (d) or (f) above. After the contract modification establishing the total final price is executed, the total amount paid or to be paid on all invoices or vouchers shall be adjusted to reflect the total final price, and any resulting additional payments, refunds, or credits shall be made promptly.

(i) *Quarterly limitation on payments statement.* This paragraph (i) shall apply until a firm fixed price or a total final price is established under subparagraph (d)(3) or (f)(2).

(1) Within 45 days after the end of each quarter of the Contractor's fiscal year in which a delivery is first made (or services are first performed) and accepted by the Government under this contract, and for each quarter thereafter, the Contractor shall submit to the contract administration office (with a copy to the contracting office and the cognizant contract auditor) a statement, cumulative from the beginning of the contract, showing—

(i) The total contract price of all supplies delivered (or services performed) and accepted by the Government and for which final prices have been established;

(ii) The total cost (estimated to the extent necessary) reasonably incurred for, and properly allocable solely to, the supplies delivered (or services performed) and accepted by the Government and for which final prices have not been established;

(iii) The portion of the total interim profit (used in establishing the initial contract price or agreed to for the purpose of this paragraph (i)) that is in direct proportion to the supplies delivered (or services performed) and accepted by the Government and for which final prices have not been established—increased or decreased in accordance with subparagraph (d)(4) above when the amount stated under subdivision (ii), immediately above, differs from the aggregate firm target costs of the supplies or services; and

(iv) The total amount of all invoices or vouchers for supplies delivered (or services performed) and accepted by the Government (including amounts applied or to be applied to liquidate progress payments).

(2) Notwithstanding any provision of this contract authorizing greater payments, if on any quarterly statement the amount under subdivision (1)(iv) above exceeds the sum due the Contractor, as computed in accordance with subdivisions (1)(i), (ii), and (iii) above, the Contractor shall immediately refund or credit to the Government the amount of this excess. The Contractor may, when appropriate, reduce this refund or credit by the amount of any applicable tax credits due the Contractor under 26 U.S.C. 1481 and by the amount of previous refunds or credits effected under this clause. If any portion of the excess has been applied to the liquidation of progress payments, then that portion may, instead of being refunded, be added to the unliquidated progress payment account consistent with the Progress Payments clause. The Contractor shall provide complete details to support any claimed reductions in refunds.

(3) If the Contractor fails to submit the quarterly statement within 45 days after the end of each quarter and it is later determined that the Government has overpaid the Contractor, the Contractor shall repay the excess to the Government immediately. Unless repaid within 30 days after the end of the statement submittal period, the amount of the excess shall bear interest, computed from the date the quarterly statement was due to the date of repayment, at the rate established in accordance with the Interest clause.

(j) *Subcontracts.* No subcontract placed under this contract may provide for payment on a cost-plus-a-percentage-of-cost basis. The Contractor shall—

(1) Insert in each price redetermination or incentive price revision subcontract the substance of paragraph (i)

above, and of this paragraph (j), modified to omit mention of the Government and to reflect the position of the Contractor as purchaser and of the subcontractor as vendor, and to omit that part of subparagraph (i)(2) above relating to tax credits; and

(2) Include in each cost-reimbursement subcontract a requirement that each lower-tier price redetermination or incentive price revision subcontract contain the substance of paragraph (i) above, and of this paragraph (j), modified as required by subparagraph (j)(1), immediately above.

(k) *Disagreements.* If the Contractor and the Contracting Officer fail to agree upon (1) a total firm target cost and a final profit adjustment formula or (2) a total final price, within 60 days (or within such other period as the Contracting Officer may specify) after the date on which the data required in paragraphs (c) and (e) above are to be submitted, the Contracting Officer shall promptly issue a decision in accordance with the Disputes clause.

(l) *Termination.* If this contract is terminated before the total final price is established, prices of supplies or services subject to price revision shall be established in accordance with this clause for (1) completed supplies and services accepted by the Government and (2) those supplies or services not terminated under a partial termination. All other elements of the termination shall be resolved in accordance with other applicable clauses of this contract.

(m) *Equitable adjustments under other clauses.* If an equitable adjustment in the contract price is made under any other clause of this contract before the total final price is established, the adjustment shall be made in the total target cost and may be made in the maximum dollar limit on the total final price, the total target profit, or both. If the adjustment is made after the total final price is established, only the total final price shall be adjusted.

(n) *Exclusion from target price and total final price.* If any clause of this contract provides that the contract price does not or will not include an amount for a specific purpose, then neither any target price nor the total final price includes or will include any amount for that purpose.

(o) *Separate reimbursement.* If any clause of this contract expressly provides that the cost of performance of an obligation shall be at Government expense, that expense shall not be included in any target price or in the total final price, but shall be reimbursed separately.

(p) *Taxes.* As used in the Federal, State, and Local Taxes clause or in any other clause that provides for certain taxes or duties to be included in, or excluded from, the contract price, the term "contract price" includes the total target price or, if it has been established, the total final price. When any of these clauses requires that the contract price be increased or decreased as a result of changes in the obligation of the Contractor to pay or bear the burden of certain taxes or duties, the increase or decrease shall be made in the total target price or, if it has been established, in the total final price, so that it will not affect the Contractor's profit or loss on this contract.

(End of clause)

(R 7-108.2 1980 FEB)

NOTES:

(1) The degree of completion may be based on a percentage of contract performance or any other reasonable basis.

(2) The language may be changed to describe a negotiated adjustment pattern under which the extent of adjustment is not the same for all levels of cost variation.

Alternate I (APR 1984). If the contract calls for supplies or services to be ordered under a provisioning document or Government option and the prices are to be subject to the incentive price revision described in the basic clause, add the following paragraph (q) to the basic clause:

(q) *Provisioning and options.* Parts, other supplies, or services that are to be furnished under this contract on the basis of a provisioning document or Government option shall be subject to price revision in accordance with this clause. Any prices established for these parts, other supplies, or services under a provisioning document or Government option shall be treated as initial target prices, or target prices as agreed upon and stipulated in the pricing document supporting the provisioning or added items. Initial or firm target costs and profits and final prices covering these parts, other supplies, or services may be established separately, in the aggregate, or in any combination, as the parties may agree.

(R 7-108.2 1980 FEB)

52.216-18 Ordering.

As prescribed in 16.505(a), insert the following clause in solicitations and contracts when a definite-quantity contract, a requirements contract, or an indefinite-quantity contract is contemplated:

ORDERING (APR 1984)

(a) Any supplies and services to be furnished under this contract shall be ordered by issuance of delivery orders by the individuals or activities designated in the Schedule. Such orders may be issued from .... through .... [*insert dates*].

(b) All delivery orders are subject to the terms and conditions of this contract. In the event of conflict between a delivery order and this contract, the contract shall control.

(c) If mailed, a delivery order is considered "issued" when the Government deposits the order in the mail. Orders may be issued orally or by written telecommunications only if authorized in the Schedule.

(End of clause)

(R 7-1101 1968 JUN)

52.216-19 Delivery-Order Limitations.

As prescribed in 16.505(b), insert a clause substantially the same as follows in solicitations and contracts when a definite-quantity contract, a requirements contract, or an indefinite-quantity contract is contemplated:

DELIVERY-ORDER LIMITATIONS (APR 1984)

(a) *Minimum order.* When the Government requires supplies or services covered by this contract in an amount of less than .... [*insert dollar figure or quantity*], the Government is not obligated to purchase, nor is the Contractor obligated to furnish, those supplies or services under the contract.

(b) *Maximum order.* The Contractor is not obligated to honor—

(1) Any order for a single item in excess of .... [*insert dollar figure or quantity*];

(2) Any order for a combination of items in excess of .... [*insert dollar figure or quantity*]; or

(3) A series of orders from the same ordering office within ..... days that together call for quantities exceeding the limitation in subparagraph (1) or (2) above.

(c) If this is a requirements contract (i.e., includes the Requirements clause at subsection 52.216-21 of the Federal Acquisition Regulation (FAR)), the Government is not required to order a part of any one requirement from the Contractor if that requirement exceeds the maximum-order limitations in paragraph (b) above.

(d) Notwithstanding paragraphs (b) and (c) above, the Contractor shall honor any order exceeding the maximum order limitations in paragraph (b), unless that order (or orders) is returned to the ordering office within ..... days after issuance, with written notice stating the Contractor's intent not to ship the item (or items) called for and the reasons. Upon receiving this notice, the Government may acquire the supplies or services from another source.

(End of clause)

(R 7-1102.1(a) 1965 AUG)
(R 7-1102.2(a))
(R 7-1102.3(a))

52.216-20 Definite Quantity.

As prescribed in 16.505(c), insert the following clause in solicitations and contracts when a definite-quantity contract is contemplated:

DEFINITE QUANTITY (APR 1984)

(a) This is a definite-quantity, indefinite-delivery contract for the supplies or services specified, and effective for the period stated, in the Schedule.

(b) The Government shall order the quantity of supplies or services specified in the Schedule, and the Contractor shall furnish them when ordered. Delivery or performance shall be at locations designated in orders issued in accordance with the Ordering clause and the Schedule.

(c) Except for any limitations on quantities in the Delivery-Order Limitations clause or in the Schedule, there is no limit on the number of orders that may be issued. The Government may issue orders requiring delivery to multiple destinations or performance at multiple locations.

(d) Any order issued during the effective period of this contract and not completed within that time shall be completed by the Contractor within the time specified in the order. The contract shall govern the Contractor's and Government's rights and obligations with respect to that order to the same extent as if the order were completed during the contract's effective period; provided, that the Contractor shall not be required to make any deliveries under this contract after .... [*insert date*].

(End of clause)

(R 7-1102.1(b) 1965 AUG)

52.216-21 Requirements.

As prescribed in 16.505(d), insert the following clause in solicitations and contracts when a requirements contract is contemplated:

REQUIREMENTS (APR 1984)

(a) This is a requirements contract for the supplies or services specified, and effective for the period stated, in the Schedule. The quantities of supplies or services specified in the Schedule are estimates only and are not purchased by this contract. Except as this contract may otherwise provide, if the Government's requirements do not result in orders in the quantities described as "estimated" or "maximum" in the Schedule, that fact shall not constitute the basis for an equitable price adjustment.

(b) Delivery or performance shall be made only as authorized by orders issued in accordance with the Ordering clause. Subject to any limitations in the Delivery-Order Limitations clause or elsewhere in this contract, the Contractor shall furnish to the Government all supplies or services specified in the Schedule and called for by orders issued in accordance with the Ordering clause. The Government may issue orders requiring delivery to multiple destinations or performance at multiple locations.

(c) Except as this contract otherwise provides, the Government shall order from the Contractor all the supplies or services specified in the Schedule that are required to be purchased by the Government activity or activities specified in the Schedule.

(d) The Government is not required to purchase from the Contractor requirements in excess of any limit on total orders under this contract.

(e) If the Government urgently requires delivery of any quantity of an item before the earliest date that delivery may be specified under this contract, and if the Contractor will not accept an order providing for the accelerated delivery, the Government may acquire the urgently required goods or services from another source.

(f) Any order issued during the effective period of this contract and not completed within that period shall be completed by the Contractor within the time specified in the order. The contract shall govern the Contractor's and Government's rights and obligations with respect to that

APPENDIX F

Award Fee Example

AWARD FEE EXAMPLE

SELECTION OF CRITERIA AND EVALUATION RATING PLANS

a. Choices must be made in the format as any new contracting type is developed. The choice of the evaluation criteria and measurement rating plans is not limited in terms of rigid specifications. The preceding parts of the guidelines have emphasized that no single system will precisely fit all situations. The evaluation criteria and standards of evaluation should be monitored to ensure continued consistence with job content and requirements. Whenever possible, the contract effort should be stratified into work packages and the evaluation rating plans should be tailored to emphasize the value of individual work packages.

b. This part of the guide presents three examples of various criteria lists and award fee measurement and rating plans. The examples have been selected from contracts recently issued and are presented essentially in their original format. The examples do not necessarily represent recommended CPAF plans which may serve as a model for all related situations. There are always considerations which bear on the selection of evaluation criteria and measurement that are appropriate for particular situations. The examples do portray a sample of actual contract plans which have been designed to secure increased precision and accuracy in the measurement of contractor performance by technical managers and contracting officers.

c. Certain parts of the three examples of plans might be combined into a fourth plan which would provide improved definition and objectivity. Variations of the individual plans or combinations of parts of the plans may be considered in a plan which emphasizes measurement of results, or output. The goal for all plans should be to approach maximum objectivity in this highly subjective environment.

d. Part IV also presents an example and illustration of recomputed target cost in CPIF/AF contracts. The Recomputed Target Cost (RTC) is a pricing technique which provides for changes in cost experience due to significant fluctuation of requirements that are clearly outside of the contractor's control. The TRC procedure should not be used unless an in-depth analysis reveals that all of several control factors are present and the benefits of an objective cost motivation for all elements except the man-hour element. The strongest caveat in use of the RTC is to avoid misapplication of the concept; early experience has shown that RTC is not appropriate for non-personal services contracts.

CPAF Contractor Evaluation Criteria

I. Performance of Work

(i) Timeliness

(ii) Quality

(iii) Manpower

(iv) Materials Utilization

II. Technical Management

(1) Management Structure

(i) Correlation of contractor's organization to that of laboratory

(ii) Lines of communication between Government and contractor

(iii) Local autonomy and authority

(iv) Support by corporate headquarters

(2) Management Performance

(i) Initiative[1]

(ii) Organizing for individual jobs

(iii) Planning and estimating

(iv) Supervising

(v) Coordinating

(vi) Establishing and maintaining controls (fiscal, manpower, materials, fabrication, schedule, etc.)

(vii) Reporting

(ix) Understanding Government requirements

(x) Cost reductions, improvements, economies, and eliminating unessential work

---

[1]Note that criteria such as "Cooperation" and "Responsiveness" have given way to "Initiative," which can be graded more fairly or objectively in a subjective evaluation. Note also that "Good Housekeeping," often used as an evaluation criteria, is now generally considered inappropriate.

(3) Staffing

(i) Adherence (quantitative) to overall staffing plan

(ii) Qualifications of individuals for jobs (including controls to avoid misassignment of individuals)

(iii) Employee turnover

(4) Subcontracting

(i) Supervision of subcontractors

(ii) Inspection of subcontractor's products or services

(iii) Coordination of subcontractors

(iv) Lines of communication

III. Business Management

(1) Overall Business Management

(i) Effectiveness of contractor's business management

(ii) Overall Management initiative

(2) Purchasing and Subcontracting System

(i) Management support of purchasing policies and procedures

(ii) Effectiveness of such policies and procedures

(iii) Effectiveness of subcontract business controls

(iv) Subcontract administration

(v) Award fee administration

(3) Cost Control

(i) Labor cost

(ii) Overhead cost

(iii) General and administrative expense

(iv) Other direct charges

(v) Subcontract costs

(vi) Cost estimating policies, procedures, and practices

(vii) Adequacy of accounting procedures

(vii) Cost reduction

(4) Property Administration

(i) Management support of property control procedures

(ii) Adherence to property control procedures

(iii) Proper accountability for and classification of property

(iv) Care of GFP

(5) Labor Relations

(i) Effectiveness of labor relations policy

(ii) Administration of labor relations function

(iii) Timely notice of potential or actual labor disputes

(6) Reports and Procedures

(i) Policies and procedures (including revisions)

(ii) Progress reports

(iii) Funds reports

(iv) Overtime reports

(v) Other

(a) Timeliness

(b) Accuracy

(c) Necessity for resubmissions

(7) Personnel Administration

(i) Wage and salary administration including timeliness of submission of revisions to wage and salary structure

(ii) Compliance with personnel policies and procedures

(8) Contract Compliance

(i) Compliance with contract business requirements

(ii) Comprehension of contract business requirements at all management levels

(9) Small Business Program

(i) Effectiveness of policies

(ii) Effectiveness of procedures

(10) Equal Employment Opportunity (Non-Discrimination)

(i) Company's written policy

(ii) Program for implementation

(iii) Reporting

IV Utilization of Facilities and Equipment

(i) Maintenance Program

(ii) Breakage, Damage, and Loss

(iii) Efficiency of Equipment/Facilities Utilization

(iv) Safety Program

Under each of the four major areas, only the first level performance criteria need be reported in the Performance Evaluation Plan and a weighting factor given. Second level performance criteria is shown only as a guide to indicate examples of specific factors which should be investigated and evaluated.

CPAF MEASUREMENT AND RATING PLAN

a. The evaluation process contemplates: (1) informal monthly evaluations and discussions with the contractor at the Business and Technical Evaluation Coordinator level of NASA and the contractor counterparts as authorized by the board; (2) quarterly summary discussions between NASA Award Fee Evaluation Board representatives and the "Corporate Office;" and, (3) periodic formal evaluations and award fee recommendations by the Award Fee Evaluation Board.

b. Generally, contracts will be evaluated in four major areas: (1) performance of work; (2) technical management; (3) business management; and (4) utilization of facilities and equipment. Each of these major areas will be evaluated against given criteria. Criteria should be defined by each board in terms applicable to a specific contract.

c. Award Fee Evaluation Boards will allot points to major areas, criteria, and to the functional areas depending on the emphasis on each area; and performance will be evaluated in terms of points earned against those allotted, according to the Ratings, indicated in the Rating Table, Figure F-1. The median Numerical Rating, "80," corresponds to what is normally expected of a contractor; while other Ratings correspond to deviations from the median in the directions of either better or worse performance. Ratings are defined as follows:

Superior The contractor's performance exceeds standard by a substantial margin; and the Monitor can cite few areas for improvement, all of which are minor.

Excellent The contractor's performance exceeds standard; and, although there may be several areas for improvement, these are more than offset by better performance in other areas.

Good The contractor's performance is standard; and areas for improvement are approximately offset by better performance in other areas.

Satisfactory The contractor's performance is less than standard; and, although there are areas of good-or-better performance, these are more than offset by lower rated performance in other areas.

Fair The contractor's performance is less than standard by a substantial margin; and the Monitor can cite many areas for improvement which are not offset by better performance in other areas. Less satisfactory performance would be unacceptable.

FIGURE F-1
CPAF SUPPORT CONTRACT RATING TABLE

Adjective Rating Range	Numerical Rating (60 to 100)	Specific Adjective Rating	Percent of Potential Award Fee (i.e., Allotted Points) Earned
	100	Superior	100.0
	99		97.5
Superior	98		95.0
	97	Superior Minus	92.5
	96		90.0
	95		87.5
	94	Excellent Plus	85.0
	93		82.5
	92		80.0
	91		77.5
Excellent	90	Excellent	75.0
	89		72.5
	88		70.0
	87	Excellent Minus	67.5
	86		65.0
	85		62.5
	84	Good Plus	60.0
	83		57.5
	82		55.0
	81		52.5
Good (Median)	80	Good	50.0
	79		47.5
	78		45.0
	77	Good Minus	42.5
	76		40.0
	75		37.5
	74	Satisfactory Plus	35.0
	73		32.5
	72		30.0
	71		27.5
Satisfactory	70	Satisfactory	25.0
	69		22.5
	68		20.0
	67	Satisfactory Minus	17.5
	66		15.0
	65		12.5
	64	Fair Plus	10.0
	63		7.5
	62		5.0
	61		2.5
Fair	60	Fair	.0

d. Most criteria, by their nature, must be evaluated subjectively (by specific adjective ratings). However, the four criteria applying to "performance of work, " timeliness, quality, manpower utilization, and materials utilization, lend themselves to objective (quantitative) evaluation through formulas such as are indicated in Figure F-2. An "importance factor" may be desirable for differentiating between a difficult and easy task. These or other similar formulas would be an aid to the evaluator and provide a factual basis for evaluating the "performance of work" area.

e. Figures F-2 and F-3 outline a series of worksheets for use by evaluation coordinators and monitors.

FIGURE F-2

FORMULAS FOR EVALUATING CONTRACTOR

Timeliness

$$\text{RATING}^{*} = \left[\left[\frac{\text{Tot. Est. Days - All WO's}}{\text{Tot. Act. Days - All WO's}} \right]^{**} \div 1.25 \right] \text{X } 100^{***}$$

Quality

$$\text{RATING}^{*} = \left[\frac{\text{Tot. WO's Accpted on 1st Inspect.}}{\text{Tot. WO's Inspected}} \right] \text{X } 100$$

Manpower Utilization

$$\text{RATING}^{*} = \left[\left[\frac{\text{Tot. Est. Mn-Hrs. - All WO's}}{\text{Tot. Act. Mn-Hrs. - All WO's}} \right]^{**} \div 1.25 \right] \text{X } 100^{***}$$

Materials Utilization

$$\text{RATING}^{*} = \left[\left[\frac{\text{Tot. Est. \$ - All WO's}}{\text{Tot. Act. \$ - All WO's}} \right]^{**} \div 1.25 \right] \text{X } 100^{***}$$

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* See "CPAF Support Contract Rating Table" for corresponding "adjective rating" and "percent of allotted points earned."

** Or 1.25, whichever is lesser.

*** The divisor 1.25 and multiplier 100 converts the quotient to the numerical rating scale of 60 to 100 shown in Figure F-1.

FIGURE F-3

CPAF SUPPORT CONTRACT
MONITOR'S WORK SHEET FOR "PERFORMANCE OF WORK"
(Sample Format)

Appendix Summary/Work Order	Weight	Adjective Rating
Appendix Summary		
Timeliness		
Quality		
Manpower Utilization		
Materials Utilization		
WO Number ________		
Timeliness		
Quality		
Manpower Utilization		
Materials Utilization		
WO Number ________		
Timeliness		
Quality		
Manpower Utilization		
Materials Utilization		
WO Number ________		
Timeliness		
Quality		
Manpower Utilization		
Materials Utilization		
WO Number ________		
Timeliness		
Quality		
Manpower Utilization		
Materials Utilization		

FIGURE F-4

CPAF SUPPORT CONTRACT
MONITOR'S REPORT
(Sample Format)

Contract: ____________________ **Monitor's Name:** ____________________

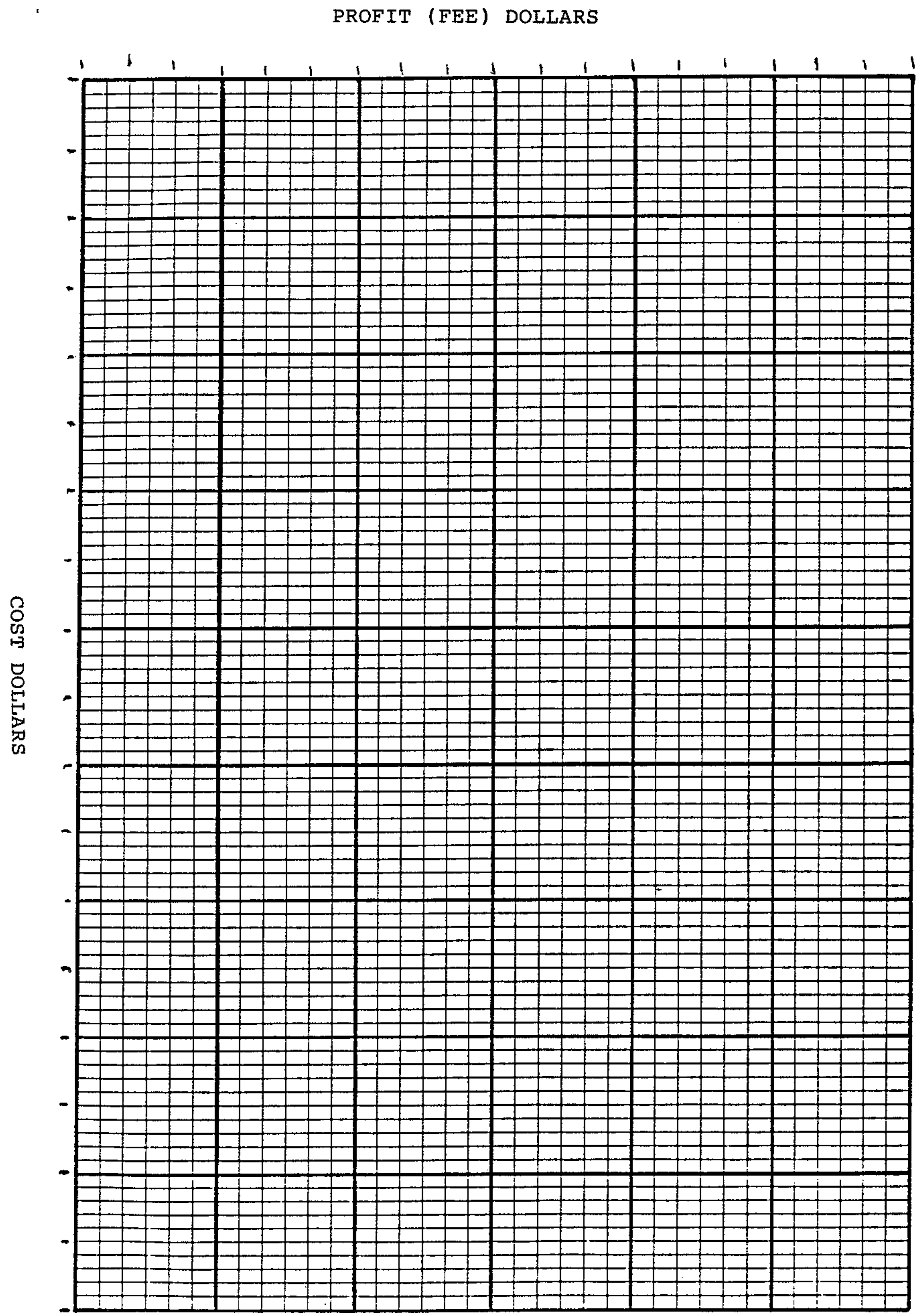
Date: ____________________

Criteria	Weight	Adjective Rating	Remarks*

* **All Ratings Require Explanations**

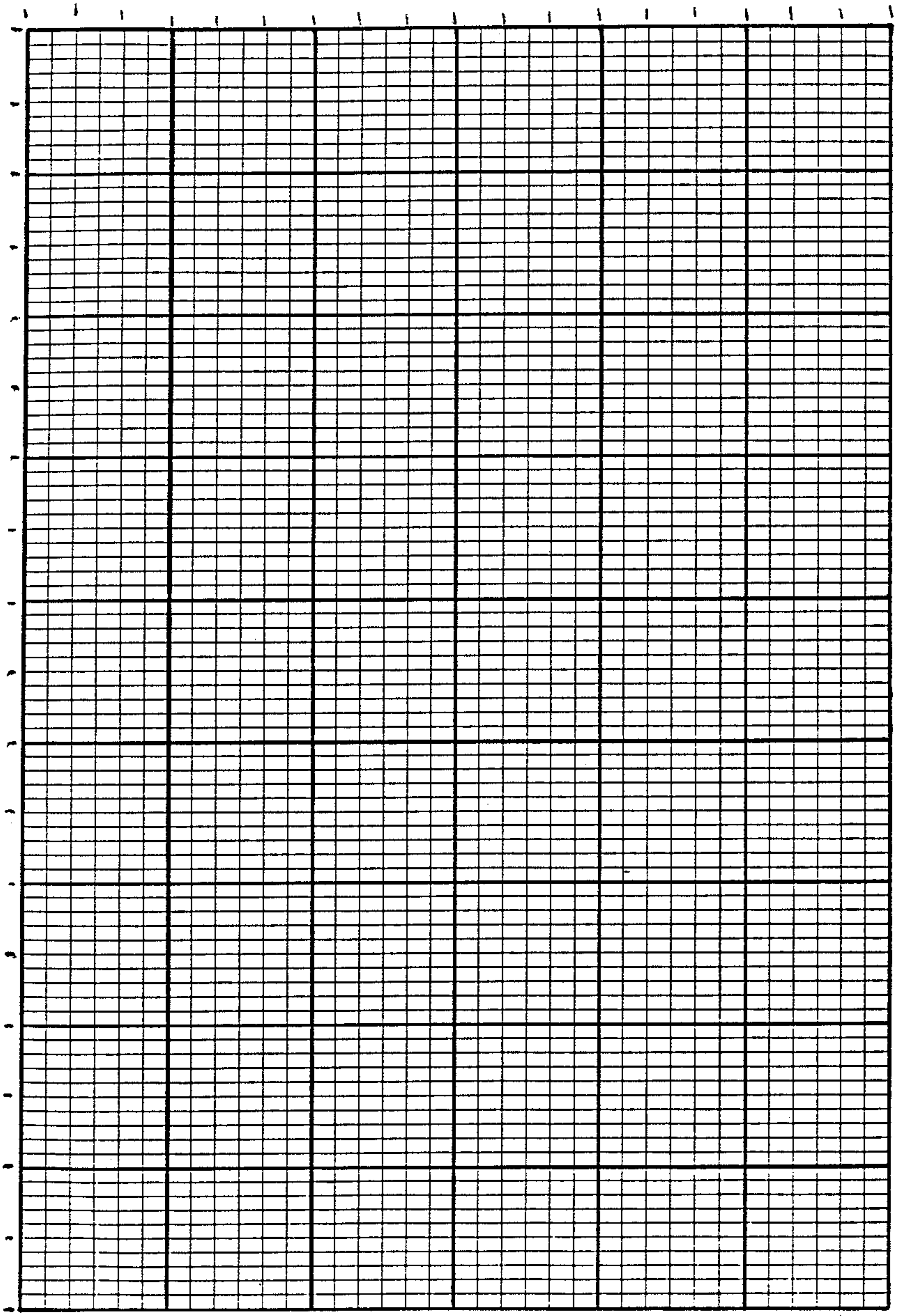
PROFIT (FEE) DOLLARS

COST DOLLARS

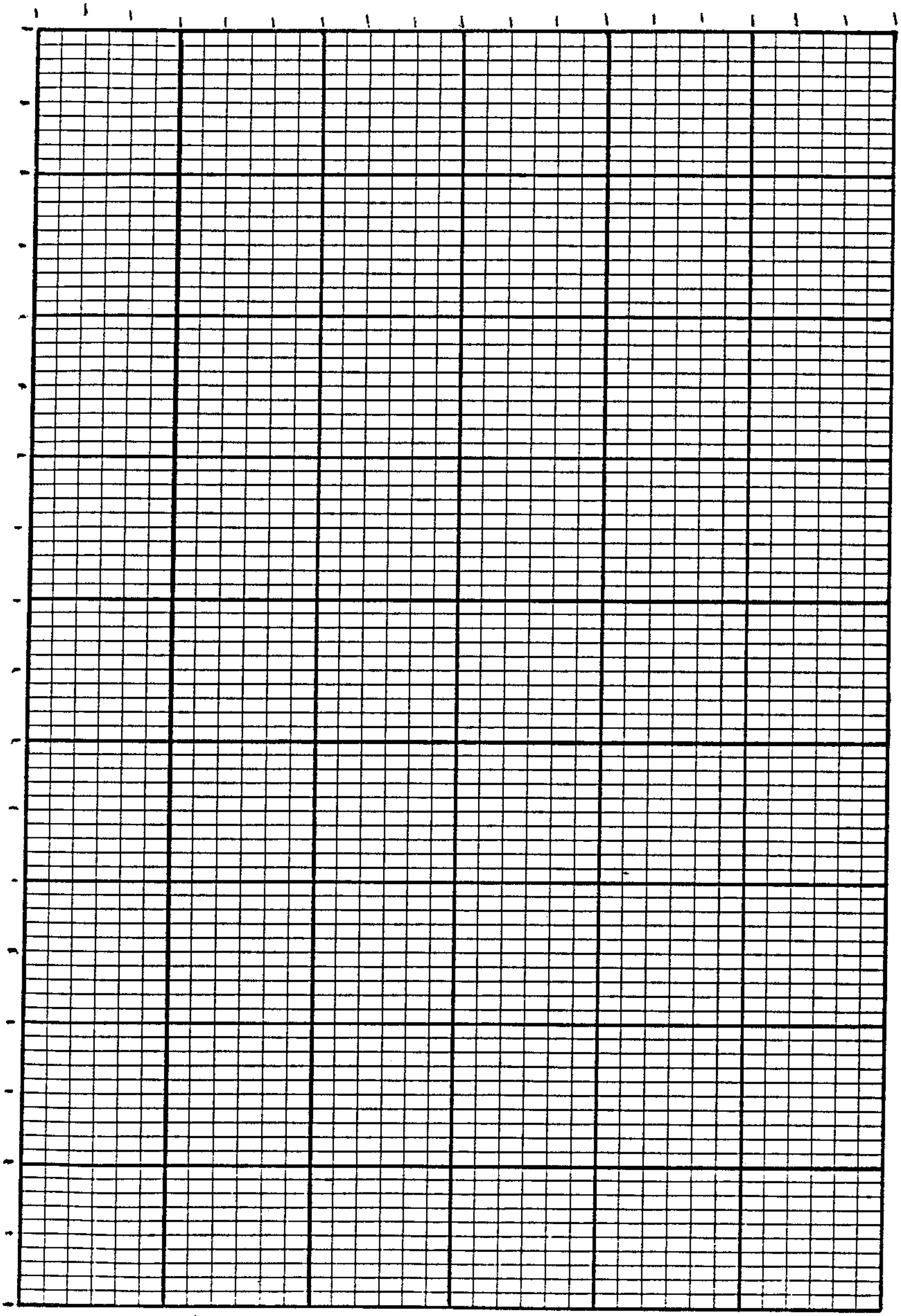

PROFIT (FEE) DOLLARS
COST DOLLARS

PROFIT (FEE) DOLLARS

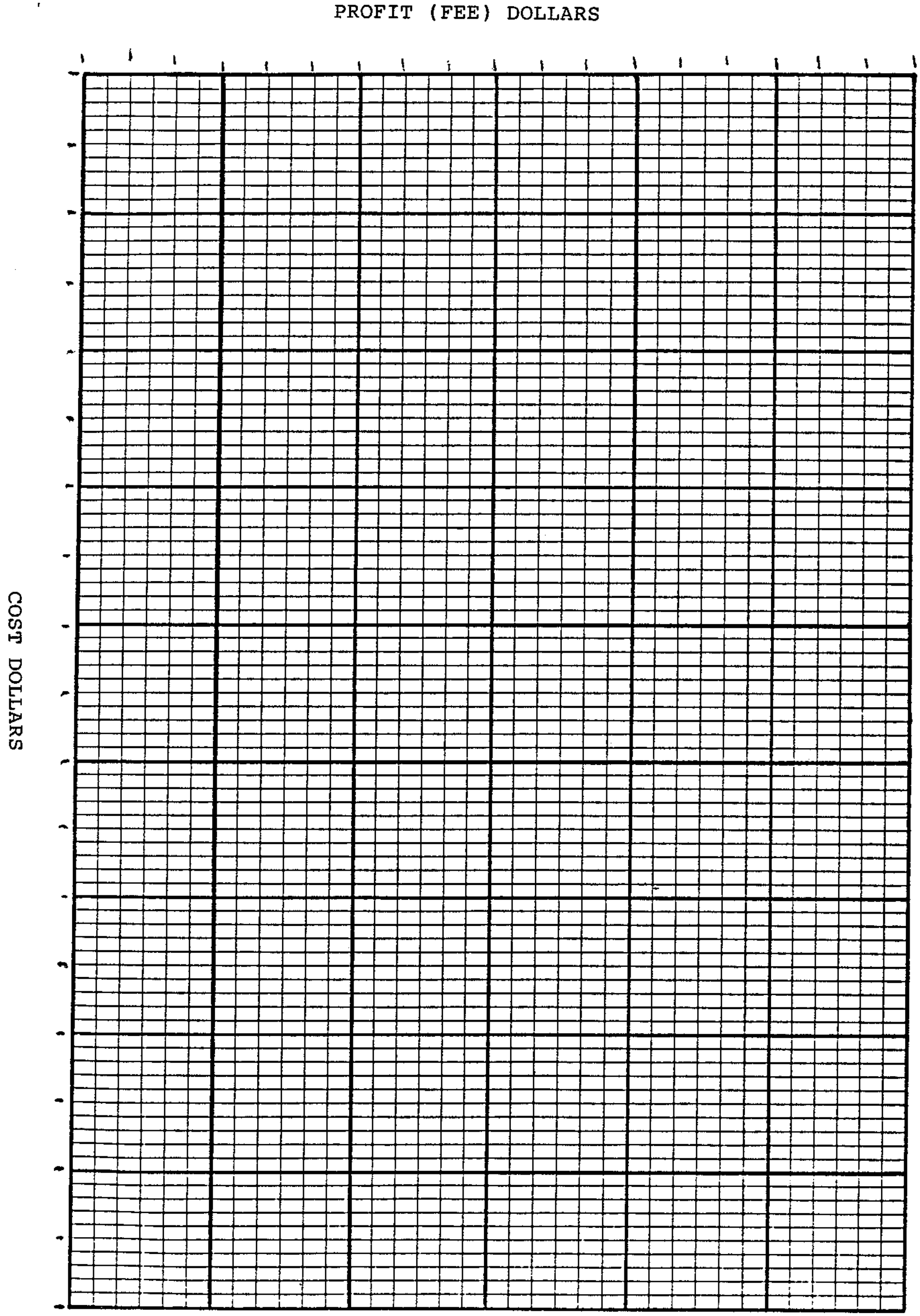
COST DOLLARS



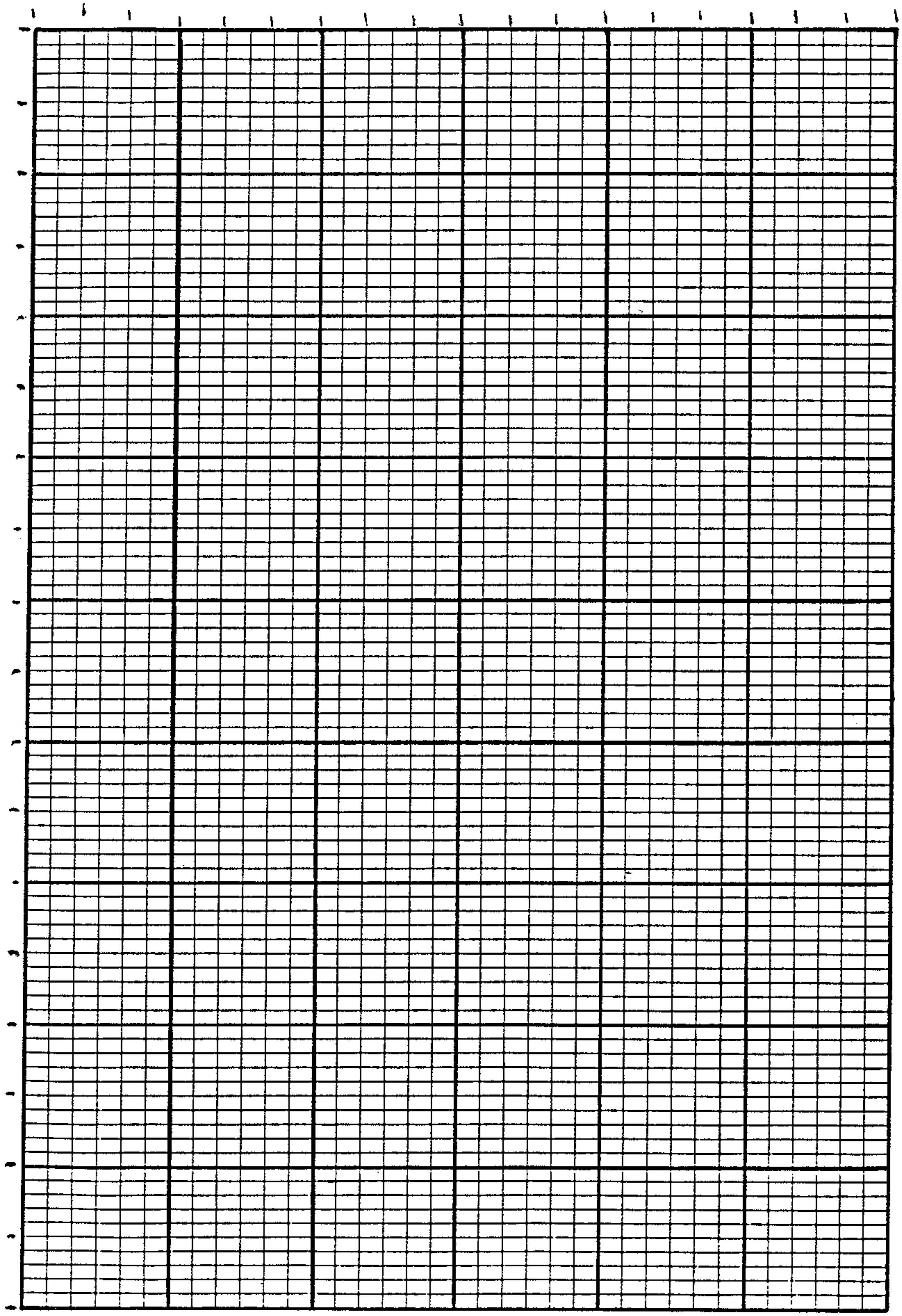
PROFIT (FEE) DOLLARS



COST DOLLARS


PROFIT (FEE) DOLLARS
COST DOLLARS

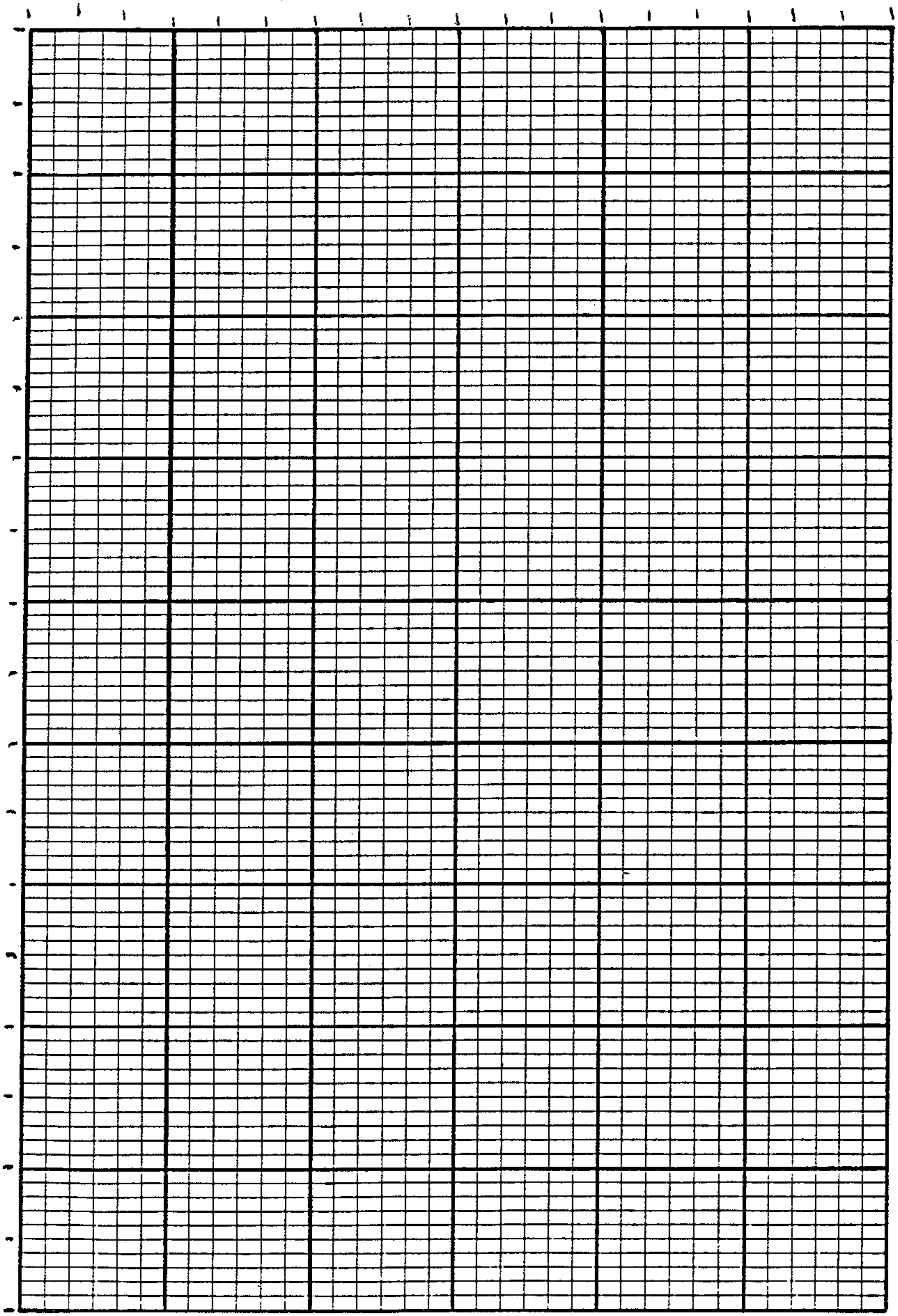
PROFIT (FEE) DOLLARS

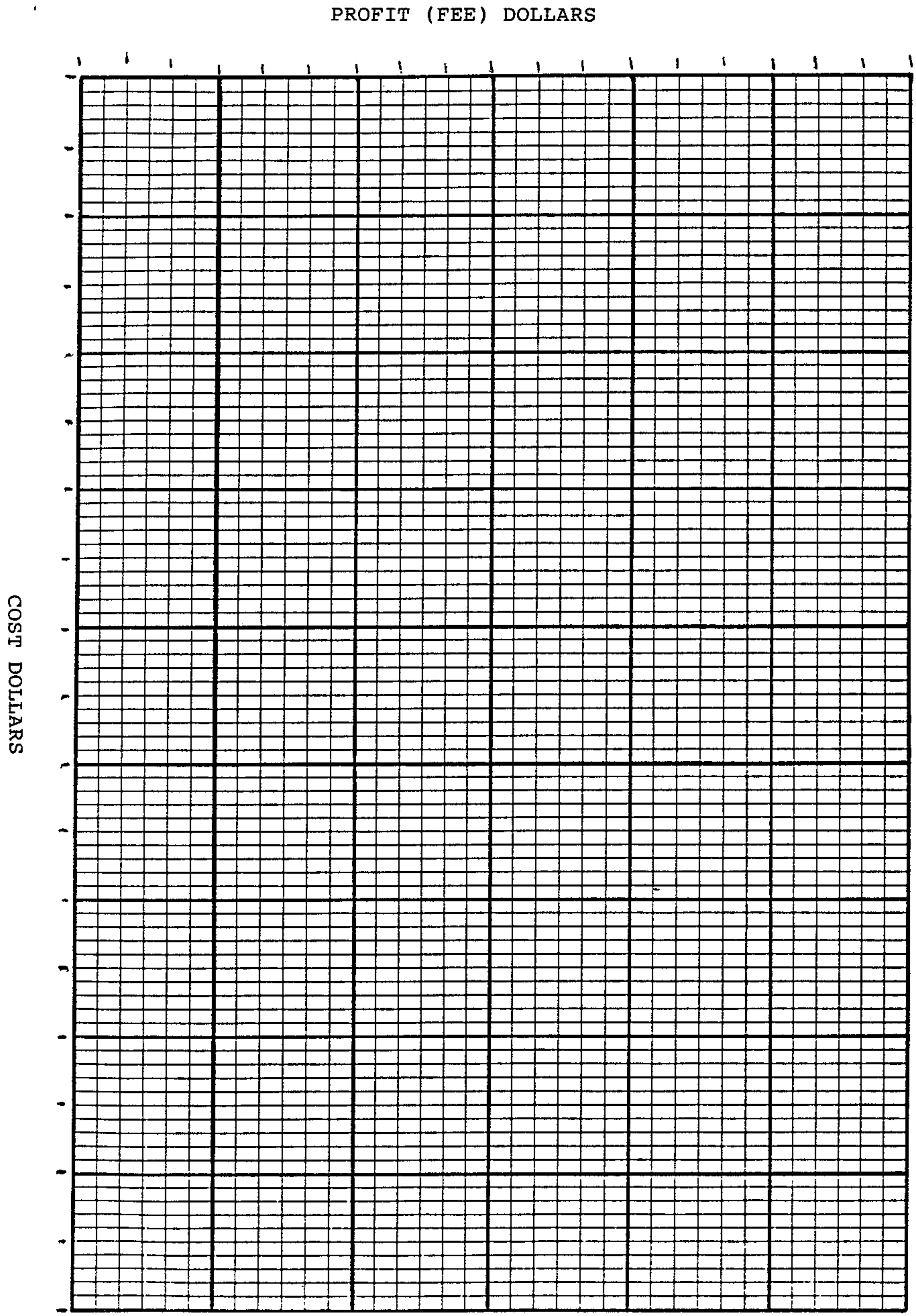


COST DOLLARS

PROFIT (FEE) DOLLARS

COST DOLLARS




PROFIT (FEE) DOLLARS
COST DOLLARS