

ARMY INDUSTRIAL COLLEGE  
Washington, D.C.

*Ad Davis*  
*A.I.C.*  
**357**  
*Contracts*  
*Contract 7m*

OFFICE OF THE ASSISTANT  
SECRETARY OF WAR  
SEP 7 1927  
PLANNING BRANCH  
PROCUREMENT DIVISION

C O N T R A C T S.

Lecture by

Brig. Gen. C. L.H. Ruggles, Ord.

June 18, 1926.

(Originals of Lantern Slides  
used in Lecture before A.I.C.),

1. PROPOSED FORMS OF WAR DEPARTMENT CONTRACTS  
(For use in war or other National emergency)

- Informal Contracts.
  - Purchase Order.
- Formal Contracts.
  - Fixed Price Contract.
  - Adjustable Price Contract.
  - Adjusted Compensation Contract.

-000-

2. PURCHASE ORDER

- (1) It's form is familiar to all Government contractors.
- (2) It closely resembles like forms used in Industry.
- (3) It is a brief, concise form.
- (4) It contains a termination clause which limits liability of the Government to the purchase price of material or supplies delivered or in transit at the time of termination. Provision is made for deleting this clause when so desired by the United States.
- (5) It's field is limited.
  - (a) It may be used to procure goods in any amount, but the delivery must be made within 60 days.
  - (b) If delivery cannot be made within 60 days, the amount of the order may not exceed \$500.00.

-000-

3. FEATURES COMMON TO ALL FORMAL CONTRACTS

- (1) All are accompanied by a detailed analysis of the contractor's estimate.
- (2) All contain provisions for priority over all contracts not directly connected with war activities and, as among Federal contracts, in order of date thereof unless otherwise directed in writing by competent Federal authority.
- (3) All provide that the contractor shall furnish all necessary facilities for Government inspectors; that inspection, so far as practicable, shall be at place of production, manufacture, or shipment; and that such inspection, unless otherwise provided in the specifications, shall be final except as regards latent defects, departure from specific requirements, or fraud.

3. Cont'd.

(4) All require the contractor to exercise due care in conserving Government property and make him liable, as a bailee, for failure to exercise such care.

(5) All contain like clauses relative to transfer, officials not to benefit, covenant against contingent fees, confidential work, and undesirable employees.

-000-

4. FIXED PRICE CONTRACT.

(1) Satisfies statute requiring a "formal contract" where amount exceeds \$500.00 and delivery cannot be made within 60 days.

(2) Suitable for use in purchase of commercial or semi-commercial articles and materials to be delivered in reasonably short time, construction work and personal services.

(3) Sub-contracts and sub-contractors must be approved by the contracting officer.

(4) Does not contain liquidated damage clause, but, in event of negligence or default by contractor, the Government may:

(a) Assign officers or agents to assist in expediting work, at contractor's expense.

(b) Purchase contract items elsewhere and charge contractor with excess cost.

(c) Terminate the contract, paying contract price for work actually performed.

(5) Contains termination clause, basing payment on materials on hand and percentage of work completed, less salvage value thereof. Government may buy raw materials and semi-finished work on hand if desired.

(6) Decision of contracting officer is final in all disputes except those pertaining to

(a) Elements of time.

(b) Financial consideration involved.

The contractor is afforded an opportunity to have these two matters determined judicially.

(7) Surety bond is optional with United States.

(8) Payment may be made for partial work performed, services rendered or articles delivered and accepted by the United States, up to 90% of the value thereof.

(9) In this form, of contract the contractor takes all risks of rising prices.

(10) The Government loses if the contractor's estimate is high. It does not share in any savings which may be effected by the contractor.

-0000

6. ADJUSTABLE PRICE CONTRACT.

(1) This contract protects the contractor from loss due to increases in the price of labor and material. It also protects the Government by providing that the contract price shall be reduced if there is a drop in wages or material prices.

(2) The estimate prepared by the contractor sets forth the prices of labor and material as on the date it was prepared. This estimate is then used as a basis for computing adjustments due to changes in the price of labor or materials.

(3) It does not protect the contractor from loss due to errors in estimating, inefficiency, etc., nor does it protect the Government from exorbitant prices.

(4) The total price is adjustable for changes in drawings, specifications, and other conditions of the contract.

(5) Like the other formal contracts, it may be used for the procurement of materials, supplies, construction work, or personal services.

(6) The United States will pay not to exceed 90% of the costs incurred, concurrently with performance, but all requests for payment must be supported by certified summaries of original pay-rolls, vouchers, etc.

(7) The contractor must keep accounts in the same manner as is required in the Adjusted Compensation Contract.

(8) The provisions as to sub-contracts are the same as those in the Adjusted Compensation Contract, except that no sub-contracts of the Adjusted Compensation contract type will be permitted. As a substitute, the contractor, with the prior approval of the contracting officer, may execute sub-contracts identical in form with the prime contract.

(9) The contract contains a termination clause setting forth the following provisions

(a) If the contract is terminated after delivery and acceptance of 10% or more of the contract items, the United States will pay the balance due for actual expenditures under each of the following headings.

(aa) Preparatory cost.

(bb) Production cost.

(cc) Rehabilitation cost.

But in no case shall the total payments under any of the above headings exceed the adjusted amount of that heading. In addition, the

6. Cont'd.

United States will pay that proportion of the estimated profit which the number of articles accepted bears to the total number covered by the contract.

The United States will also pay administrative and general expense after the date of termination, on the basis of the amount applicable during the calendar month of maximum production, as follows

If the contract is less than  
50% completed..... Two months.  
If 50% completed and less  
than 75%..... One month.  
If 75% or more has been  
completed..... None.

(b) If less than 10% of the completed articles have been delivered when the contract is terminated, the United States will pay the balance due for actual expenditures, as above stated, and will also pay, in lieu of profit, 10% of the sum so payable, the payment in lieu of profit shall not exceed 10% of the contractor's estimated profit.

(10) The contractor's estimate requires him to state the length of time, after completion or termination, he will store the Government property and material free of charge and the rate per square foot per month he will charge thereafter.

-oOo-

7. ADJUSTED COMPENSATION CONTRACT.

(1) May be used in procurement of materials, supplies, construction work, or personal services.

(2) While the contractor submits a preliminary estimate of cost, the United States pays all allowable costs actually incurred.

(3) It's purpose is to protect.

(a) The contractor from all loss except such as may result from a failure to earn the interest on capital invested.

(b) The Government from paying exorbitant prices for work done, services performed, or articles delivered.

(8)

7. Cont'd.

(4) No profit is included in the estimate, but the contractor receives in lieu thereof, a small fee, based upon the estimated production cost, less estimated cost of materials and sub-contracts.

(5) Incentive to effect savings is provided by permitting the contractor to earn additional compensation, based on savings effected, but this compensation is limited by the following formula. Compensation equals 1/4th the percentage of saving on original estimate times actual cost as revised to eliminate overtime and authorized increases in cost of labor and materials.

(6) Contractor's system of cost accounting must be in accord with approved practice.

(7) Frequent reports on costs and progress of work may be required.

(8) Payments are made concurrently with expenditures, but requests for payments must be supported by certified summaries of original payrolls, invoices, etc.

(9) No part of the fee or additional compensation is paid until completion of the contract.

(10) Contractor may not place sub-contracts with any vendor whom the contracting officer designates as undesirable.

(11) Purchase orders or other recognized forms of commercial commitments at fixed prices may be placed without prior approval of the contracting officer, provided liability upon termination is limited to completed work, services rendered, or material and supplies delivered or in transit at time of termination.

(12) Other fixed price sub-contracts, carrying a termination clause similar to that in the fixed price contract, require the prior approval of the contracting officer.

(13) Sub-contracts, similar in terms to the adjusted compensation contract, may be executed by the contractor with the prior approval of the contracting officer.

(14) Changes in drawings and specifications are accompanied by proportionate changes in the estimated cost and basic fee.

(15) No surety bond is required.

(16) The contract contains no liquidating damage clause, but the Government may exercise the same remedies against a delinquent contractor as are provided in the fixed price contract. The contractor receives no fee when the contract is terminated because of his default.

(17) The contract contains a termination clause under which the contractor is paid for all actual allowable expenditures and receives as compensation in full, a termination fee equal to twice the basic fee applicable to the revised costs, but not exceeding double the original basic fee.

(18) All cost records, supported by original documents, must be preserved by the contractor for 6 years after final settlement. The Secretary of War may authorize their inspection at any time during the 6 year period.

(19) Wasteful methods are curbed by a provision reducing the basic fee when the actual cost exceeds the estimate. The fee is reduced 1% for every 1% increase in the actual cost, but the total reduction in the fee may not exceed 50%.

(20) This contract is especially desirable in procuring supplies and construction work requiring a long time for completion. It protects manufacturers who are making war materials for the first time and those not familiar with the mass production of such materials.

-000-

EXHIBIT "A".

- (1) Used only in connection with the adjusted compensation contract, but forms containing details of estimate, as described below, form a part of every formal contract.
- (2) In form, this is an offer from the contractor setting forth his price and schedule of deliveries.
- (3) It sets forth, in detail, the materials, facilities and supplies to be furnished by the United States.
- (4) Resolves the total price into three elements, as follows:
  - (a) Preparatory Cost - which is subdivided into cost of arranging, assembling, and preparing facilities for production; patterns, gages, jigs, fixtures, dies, etc., experimental work, additional facilities, and government facilities.
  - (b) Production Cost - which is analyzed in the "Definition of Costs".
  - (c) Rehabilitation Cost - a fixed sum determined by negotiation, as payment in full of the cost of rehabilitating the contractor's plant. This sum is reduced if the contract is cancelled before completion of the preparatory work.

361

EXHIBIT "A" - cont'd.

- (5) All items in the estimate are also subdivided into two classes, as follows:
  - (a) Labor and Overhead.
  - (b) Materials and Sub-contracts.

-000-

8. THE DEFINITION OF COSTS.

(1) Does not prescribe any definite form of accounting, but requires that the contractor's accounting system permit the ready ascertainment of costs as outlined in the Definition of Costs.

(2) Requires the contractor to furnish the contracting officer with such cost data as the latter may require from time to time.

(3) Since rehabilitation costs are fully covered in Exhibit A, it treats only of preparatory and production costs.

(4) It provides that the preparatory cost shall include direct labor, direct material, and overhead, as defined under production cost.

(5) Defines production cost as follows

"All expenditures, other than those made for preparatory or rehabilitation work; which necessarily result from the performance of work covered by the contract, or which, in the opinion of the contracting officer, are reasonably incidental thereto, shall be considered as elements of production cost unless specifically excluded by the definition of costs or by the contract."

(6) Divides production costs into three elements, as follows.

- (a) Direct labor
- (b) Direct material
- (c) Overhead.

(7) Defines direct labor as "Wages paid for labor expended on production work covered by the contract, and which may be charged directly to such work."

(8) Requires the contractor to maintain a job card, or in construction contracts a daily time record, for every employee, direct or indirect, working wholly or partly on work under the contract. Only executives and professional men are exempt. A summary of these cards must be prepared for each pay-roll period.

8. DEFINITION OF COSTS, cont'd.

(9) (9) Defines direct material as "all materials and components purchased by the contractor, entering into and/or forming a part of the work covered by the contract, or otherwise susceptible of being charged directly against such work."

(10) Requires materials purchased for use in connection with the contract to be stored apart from other materials. Holds the contractor to strict accountability for all such material.

(11) It requires each issue from stores to be evidenced by a stores requisition. These will be audited at designated periods by the Government auditors.

(12) All steps in the handling and disposal of scrap are subject to the approval of the contracting officer. Proceeds of sales of scrap are credited to the account of the contract.

(13) Overhead is divided into two parts:

(a) Plant expense.

(b) Administrative and general expense.

(14) Plant expense includes all authorized items of cost incurred in connection with the work, but which cannot be charged directly against any of its units. Plant expense may be divided up as follows

|                                    |                      |
|------------------------------------|----------------------|
| Supervision and clerical salaries. | Water.               |
| Indirect Labor.                    | Small tools.         |
| Supplies.                          | Liability Insurance. |
| Repairs.                           | Light and heat.      |
| Insurance on Plant.                | Safety, fire, etc.   |
| Depreciation.                      | Transportation.      |
| Power.                             | Taxes on plant.      |

(15) Administrative and general expense consists of those items of cost necessary or reasonably incidental to the administrative or general office activities of the contractor's plant. It may be subdivided as follows

- Salaries of executives.
- Salaries of office employees.
- Salaries of engineering department.
- Taxes on office buildings and equipment.
- Light, heat and power.
- Office stationery and supplies.
- Postage, telephone and telegraph.
- Net loss on operation of commissary.
- Traveling expense.
- Incidental expenses.

8. DEFINITION OF COSTS, cont'd.

(16) Overhead or its constituents may be distributed by any method conforming to good accounting practise. The United States will, of course, pay only its pro rata share of any item.

(17) No payments will be made except upon presentation of summaries prepared from original cost records and certified by the Government auditors.

(18) The following items will not be allowed as items of cost on the Adjusted Compensation contract, expenditures made on behalf of these items will not be reimbursed by the Government.

- |   |   |
|---|---|
| Federal Taxes.  | Fire Insurance on government property.                    |
| Interest on Investment.   | Interest paid on debts.                                   |
| Bad debts.  | Payments into reserves for debts.                         |
| Contributions to charity.   | Reserves for bad debts.                                   |
| Entertainment.  | Brokerage fees on commercial paper.                       |
| Pension payments except in stated cases.  | Life insurance premiums, where contractor is beneficiary. |
| Salaries and expenses of sales, advertising, credit, collection and legal departments.                          |   |
| Salaries and expenses of experimental and research departments not directly engaged on work under the contract. |   |
| Expenditures for patents, royalty payments, etc., not incident to work done under the contract.                 |   |
| Expenses of subsidiary or holding companies.  |   |

|   |                               |
|---|-------------------------------|
| Total Estimated cost.....   | \$1,000,000                   |
| Estimated cost of material and<br>sub-contracts.....                    | 500,000                       |
| Remainder.....  | 500,000                       |
| Fee (4% on remainder ).....   | 20,000                        |
| Actual Cost (exclusive of fee ).....                                    | 800,000                       |
| Profit, if fixed price contract.....                                    | 200,000                       |
| Saving under compensation contract.....<br>or percentage of saving..... | 200,000<br>20% of estimate    |
| Compensation (1/4 percentage of<br>saving x cost).....                  | \$ 40,000                     |
| Fee plus compensation.....  | 60,000                        |
| Total profit as percentage of cost<br>under compensation contract.....  | 7 1/2 %                       |
| Total profit as percentage of cost<br>under fixed price contract....    | 25 %                          |
| Saving to U.S. over fixed price contract.<br>or.....                    | 17 1/2% of cost<br>\$ 140,000 |

-000-

|   |             |
|---|-------------|
| Estimated Total cost.....   | \$1,000,000 |
| Estimates cost of material and<br>sub-contracts .....                                       | 500,000     |
| Remainder.....  | 500,000     |
| Fee (4% on remainder).....  | 20,000      |
| Actual cost (exclusive of fee )... ..   | 1,200,000   |
| Loss of contractor in case of<br>fixed price contract, 1,.....1.....                        | 200,000     |
| Penalty in case of compensation contract.   | 44,000      |
| Profit of contractor (feeless penalty)<br>in case of compensation contract.....             | 16,000      |
| Loss of contractor as percentage of<br>estimated cost under fixed price<br>contract.....    | 20%         |
| Profit of contractor as percentage of<br>estimated cost under compensation<br>contract..... | 1.6%        |

-000-

|  |                 |
|--|-----------------|
| Total estimated cost.....  | \$1,000,000     |
| Estimated cost of material and<br>sub-contracts.....                   | 500,000         |
| Remainder.....   | 500,000         |
| Fee (4% on remainder).....   | 20,000          |
| Actual cost (exclusive of fee).....                                    | 600,000         |
| Profit, if fixed price contract.....                                   | 400,000         |
| Saving under compensation contract.....                                | 400,000         |
| or percentage of saving.....   | 40% of est.     |
| Compensation (1/4 percentage of saving<br>& cost).....                 | \$ 60,000       |
| Fee plus compensation.....   | \$60,000        |
| Total profit as percentage of cost<br>under compensation contract..... | 13-1/3%         |
| Total profit as percentage of cost<br>under fixed price contract.....  | 65-2/3%         |
| Saving to US. over fixed price contract...                             | 53-1/3% of cost |
| or.....  | \$ 320,000      |

-000-

|  |             |
|--|-------------|
| Estimated Total Cost.....  | \$1,000,000 |
| Estimated cost of material and<br>sub-contracts.....                                 | 500,000     |
| Remainder.....   | 500,000     |
| Fee (4% on remainder).....   | 20,000      |
| Actual cost (exclusive of fee).....  | 1,400,000   |
| Loss of contractor in case of fixed<br>price contract.....                           | 400,000     |
| Penalty in case of compensation contract..   | 8,000       |
| Profit of contractor (fee less penalty)<br>in case of compensation contract.....     | 12,000      |
| Loss of contractor as percentage of<br>estimated cost under fixed price contract.    | 40%         |
| Profit of contractor as percentage of<br>estimated cost under compensation contract. | 1.2%        |

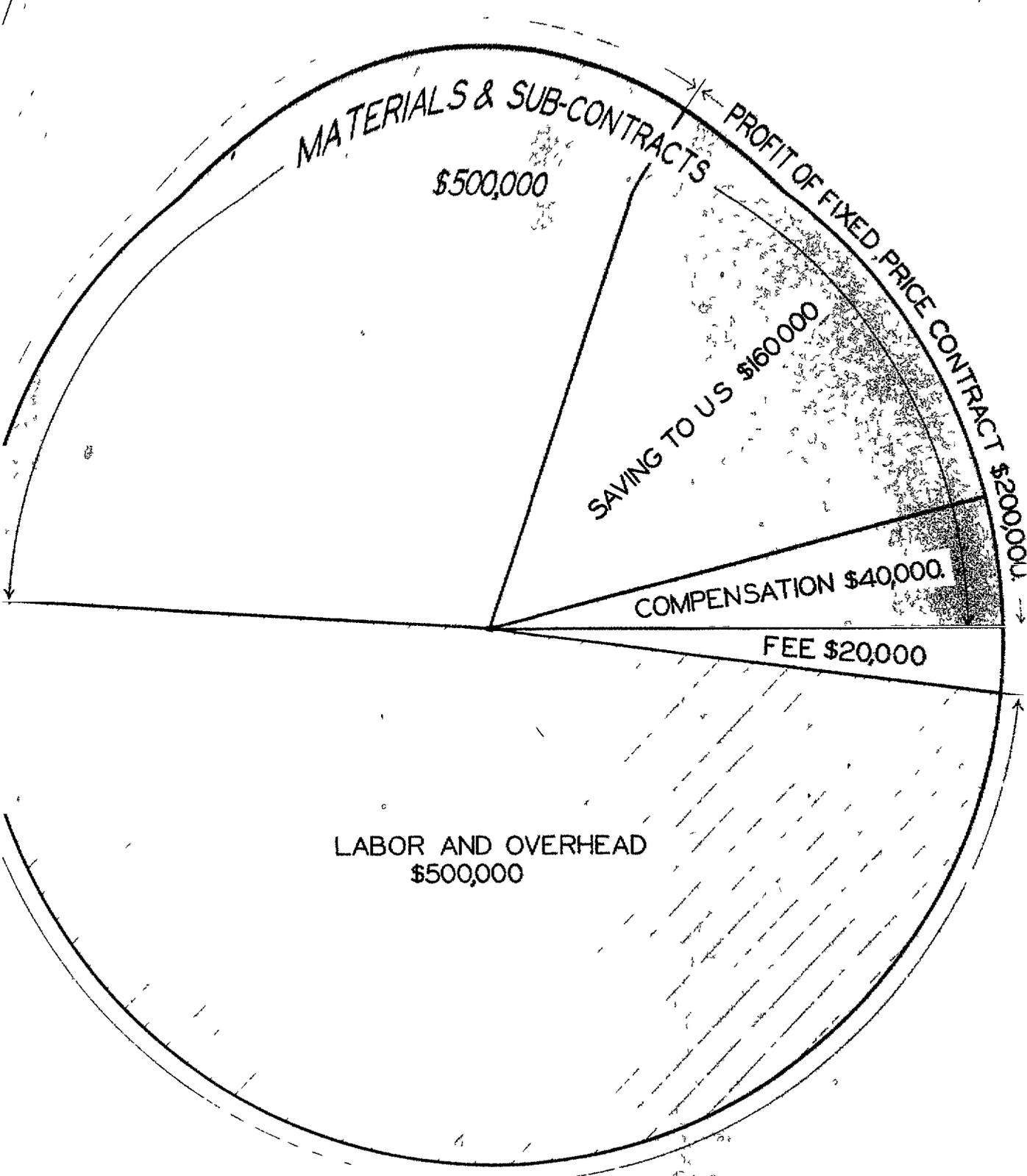
-000-

|  |                  |
|--|------------------|
| Total estimated cost.....  | \$ 1,000,000     |
| Estimated cost of material & subcontracts....                          | 500,000          |
| Remaindar . . . . .  | 500,000          |
| Fee (4 % on remainder).....  | 20,000           |
| Actual cost (exclusive of fee).....                                    | 300,000          |
| Profit, if fixed price contract.....                                   | 700,000          |
| Saving under compensation contract.....                                | 700,000          |
| or percentage of saving..  | 70% of est.      |
| Compensation (1/4 percentage of saving<br>x cost).....                 | \$ 52,500        |
| Fee plus compensation.....   | 72,500           |
| Total profit as percentage of cost under<br>compensation contract..... | 24-1/6%          |
| Total profit as percentage of cost under<br>fixed price contract.....  | 233-1/3%         |
| Saving to U.S. over fixed price contract....                           | 209-1/6% of cost |
| or.....  | \$ 627,500       |

-000-

|  |              |
|--|--------------|
| Estimated total cost.....  | \$ 1,000,000 |
| estimated cost of material & sub-contracts.  | 500,000      |
| Remainder.....   | 500,000      |
| Fee (4% on remainder)....  | 20,000       |
| Actual cost, exclusive of fee.....   | 1,700,000    |
| Loss of contractor in case of<br>fixed price contract..                                | 700,000      |
| Penalty in case of compensation contract....   | 10,000       |
| Profit of contractor (fee less penalty)<br>in case of compensation contract.....       | 10,000       |
| Loss of contractor as percentage of esti-<br>mated cost under fixed price contract.... | 70%          |
| Profit of contractor as percentage of<br>estimated cost under compensation contract.   | 1%           |

-000-



MATERIALS & SUB-CONTRACTS  
\$500,000

PROFIT OF FIXED PRICE CONTRACT \$200,000  
SAVING TO US \$160,000  
COMPENSATION \$40,000

FEE \$20,000

LABOR AND OVERHEAD  
\$500,000

17 2  
100 100

|           |                          |                          |                          |
|-----------|--------------------------|--------------------------|--------------------------|
| \$20,000  | \$20,000                 | \$20,000                 | \$20,000                 |
|           | \$40,000                 | \$60,000                 | \$52,500                 |
|           | \$160,000                |                          |                          |
| \$500,000 |                          | \$340,000                |                          |
|           |                          |                          | \$647,500                |
|           | ACTUAL COST<br>\$800,000 |                          |                          |
|           |                          | ACTUAL COST<br>\$600,000 |                          |
| \$500,000 |                          |                          | ACTUAL COST<br>\$300,000 |

FEE  
COMPENSATION

SAVING TO U.S.

ACTUAL COST

LABOR  
OVERHEAD

ED

TO

TS

|                             |                                      |              |
|-----------------------------|--------------------------------------|--------------|
| ESTIMATED COST \$1,000,000  |                                      |              |
| LABOR OVERHEAD<br>\$500,000 | MATERIALS SUB-CONTRACTS<br>\$500,000 | FEE \$20,000 |
| ACTUAL COST \$1,200,000     |                                      | FEE \$16,000 |
| ACTUAL COST \$1,400,000     |                                      | FEE \$12,000 |
| ACTUAL COST \$1,700,000     |                                      | FEE \$10,000 |

THE FEE IS REDUCED 1% FOR EACH 1% IN EXCESS OF ESTIMATE  
 LIMIT OF REDUCTION IN FEE IS 50% OF ORIGINAL