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CCR-222

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THE PERKIN-ELMER CORPORATION

OPTICAL TECHNOLOGY DIVISION

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CONTRACT DH-7776

CONTRACT CHANGE REQUEST NO. 222

PROPOSAL FOR
RECOVERY OF RV3 OF SV-1

SEPTEMBER 1971

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BIF 007-1445-71

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MW-AH-3669
October 5, 1971

Dear

Subject: Change Proposal COR-222, Support of RV-3 Recovery
Contract DH-7776

Forwarded herewith is Perkin-Elmer's proposal covering the support of the subject effort. This change is as directed by Headquarters message 3228 which covered the efforts initiated 27 July 1971 at a preliminary planning meeting at Headquarters (Ref: BYE 109733-71). The proposed period of performance is 27 July 1971 to 30 November 1971 as scheduled in the attachment.

The proposed cost including fee for the change is \$25,027.

This proposal covers the design, fabrication and delivery of a container as described and directed as part of the overall effort by Headquarters message 3320. The container was shipped 16 September 1971 from Willow Grove Naval Air Station.

Your prompt review and incorporation of this CCR by amendment to Contract DH-7776 will be appreciated.

Regards,

Enc:

cc:

BIF 007-1445-71

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SECTION 1

INTRODUCTION

1.1 INTRODUCTION

The recovery sequence for RV3 of SV1 commenced on 10 July 1971. After proceeding successfully through most of the recovery sequence and entering the atmosphere within the expected impact area, a failure in the primary parachute system prevented normal aerial recovery and allowed the RV to fall, unsupported, into the ocean.

At a preliminary planning meeting held at Headquarters 27 July 1971, a review of the information available confirmed the potential of attempting a recovery from the ocean bottom. Two working sessions were subsequently held in which discussions were held covering the probable configuration of the payload, a means for attaching the payload to the lifting cable of the Trieste II, establishing the technique to be used, and defining the hardware interfaces involved. Complete details of these meetings can be found in referenced documents.*

SSC received authorization from Headquarters (Messages No. 3228 and 3320 dated 31 August 1971 and 2 September 1971) to provide support for the recovery of RV3. The support will consist of designing the recovery hook, providing technical consulting support, and providing a suitable shipping container for the recovered RV.

* BYE 109733-71
BIF 007-1184, 71
ME-45 Recovery of RV-3 Meeting at MWC, 30 July 1971
BIF 007-1266-71
ME-52 Trip Report, Recovery of RV-3

SECTION 2

STATEMENT OF WORK AND DISCUSSION

2.1 TASKS

SSC will perform the following tasks to support the recovery of RV3.

- a. Provide technical consultant support as required during the period of performance.
- b. Design a lifting hook for use in the recovery of RV3.
- c. Provide a suitable shipping container for transporting the payload, immersed in sea water, to the despooling facility.
- d. Provide a summary report of the overall operation with emphasis on the effectivity of the technique employed, the hardware used, and the survivability of the photographic data recovered.
- e. The following items will be delivered:
 1. Engineering drawings (one final layout of three sheets) to allow fabrication of lifting hook.
 2. Summary report of overall operation.
 3. Payload shipping container.
- f. Define a recovery back-up technique for use in the event hook recovery is not achievable.

2.2 DISCUSSION

2.2.1 Technical Support

Technical Support will consist of the following:

- a. Attend and provide technical liaison for planning and operational discussion meetings required to define the details of the proposed recovery hardware. The meetings which have been held and/or planned are as follows:

1. First planning meeting, 27 July 1971, Washington, D.C.
2. First Working Session, 30 July 1971, St. Louis, Missouri.
3. Second Working Session, 3 July 1971, Washington, D.C.
4. Hook fabrication and test planning session, 31 August 1971, San Diego, California.
5. Despooling Meeting at Eastman Kodak, 2 November 1971 at Rochester, New York.

b. Provide technical support for the determination of the probable configuration of the payload as it rests on the bottom of the ocean.

c. Provide on-site technical support (one man) to the hardware test program scheduled from 16 to 28 September 1971 at San Diego, California and off the coast of California aboard the test support ship. (All transportation and facilities for the "deployed" phase will be provided by the government.)

d. Provide on-site technical support during the recovery operation. This effort will include evaluation, from photographs taken of the hardware on the ocean bottom, of the compatibility of the recovery method proposed. Identification of the payload and assessment of damage to the payload prior to attempting actual recovery is considered necessary for a successful operation. Coordinate with the operation's force and provide instructions as to the operation of the hook and the scheme to transfer the payload from the Trieste II lifting cable to the net of support ship. The on-site support is scheduled from 18 October to 1 November 1971. (Transportation from Hawaii to and from the recovery ship at sea will be provided by the government.)

e. Provide technical liaison and information to Eastman Kodak in support of the disassembly of the take-up structure and installation of an appropriate despooling axle.

2.2.2 Hook Configuration

a. The following were major design considerations:

1. Design a lifting hook for use in the underwater recovery operation. The hook will be capable of:
 - (a) Multiple operation (open and closed) at the operating depth estimated to be 14,400 feet.
 - (b) Lifting and containing the payload and its major internal components.
2. Interfacing and operational details required to assure the compatibility of the hardware design with the Trieste II will be provided by Headquarters.

b. The final configuration, provides the best combination of simplicity of operation, minimum size and weight, fabrication cost and load carrying capability. It incorporates the desirable feature of increased gripping force with increased load. This is achieved through the use of a simple "ice tong" mechanism employing a pivot for the arms which is located so as to cause the lifting cable tension to close the hook. A latch arrangement is used to hold the hook in the open position and the hook arm weight and appropriate counter-balance weights released by the latch are used to close the arms.

2.2.3 Shipping Container

The container will be: 1) light tight, 2) capable of being transported full of water and maintain capacity, 3) capable of being filled with water from the top and drained from bottom, 4) provide for lifting by crane or fork lift, 5) have maximum dimensions of 72 inches high, 65 inches wide, 78 inches long.

The container will be shipped via GFE mode of transportation.

SECTION 3

TASK DESCRIPTIONS

3.1 OPTO-MECHANICAL ENGINEERING (85.23)

2.7 MM

The Opto-Mechanical Engineering Department will perform the following tasks:

a. Provide Technical Consultant services in the following areas:

- (1) Technical liaison to planning meetings.
- (2) Technical support for fabrication and inspection of recovery hook.
- (3) Technical support during "sea trails" of hook off San Diego, Calif.
- (4) Provide on-site technical support for recovery operation.
- (5) Provide technical support at despooling facility.

b. Design and release for GFE fabrication the recovery hook. A total of seven "J" size layouts were prepared of the various concepts considered. A final layout of three "J" size sheets was prepared for the recommended design.

c. Prepare final report.

d. Specify and procure the shipping container.

3.1.1 Nonlabor: Shipping Container and Travel

Cost \$5,157.

3.2 SYSTEMS ENGINEERING (85.40)

0.8 MM

The Systems Engineering Department will perform the following tasks:

- a. Calculate descent rate of RV3 payload after impact with the water.
- b. Force flow analysis to determine loading of hook components. Several hook concepts will be analyzed.
- c. Detailed stress and weight analysis of selected hook design.
- d. Document the above analyses for incorporation into the final report.

*DELETE
AS DONE
BY
OTHERS*

3.3 DATA AND CONFIGURATION MANAGEMENT (85.80)

0.5 MM

Documentation will provide editing, illustrating, typing, proofreading, production services, and in-house photographic coverage to support preparation of:

- a. Final Report
- b. Formal Proposal

3.4 PROGRAM MANAGEMENT

0.3 MM

Program Management will perform the following tasks:

- a. Provide overall direction for incorporation of the change including establishment of schedules, responsibilities and costs.
- b. Monitor all activities to meet program requirements.
- c. Control authorization, preparation and review of the firm proposal.

SECTION 4

COST SUMMARY

<u>Organization</u>	<u>Man Months</u>	<u>Direct Labor</u>	<u>Overhead</u>	<u>Nonlabor</u>	<u>Prime Total</u>
<u>Engineering:</u>					
Project Management	0.3	312.	322.		634.
Opto-Mechanical Design	2.8	4,425.	4,562.	5,157.	14,144.
Systems Engineering	0.8	1,185.	1,222.		2,407.
Data & Configuration Management	0.5	502.	518.		1,020.
Total Engineering	4.4	6,424.	6,624.	5,157.	18,205.
Grand Total	4.4	6,424.	6,624.	5,157.	18,205.

Cost Summary

Direct Labor	6,424.
Overhead	6,624.
Nonlabor	5,157.
Total	18,205.
G&A	4,861.
Total Costs	23,066.
Fee @ 8.5%	1,961.
Total Sell Price	25,027.

NOTE

L.B. Molaskey is considered a key contributor to this effort. Consequently, his effort has been quoted on a direct charge basis. The engineering overhead pool will be appropriately reduced during Mr. Molaskey's performance on this project.

9,144
307
9,451
REDUCING SIS DATA MANAGE

MEMORANDUM FOR:

SUBJECT

: Review of CCR No. 222

RV-3 RECOVERY

1. It is requested that you review the attached Contract Change Request. Your review should be in sufficient detail to enable your assessment in terms of both technical and cost viewpoints.

2. The purpose of this exercise is two-fold:

a. First, to reject the CCR if the contractor has poorly prepared the proposal, and/or if the proposal is unsolicited and in no way is of benefit to the government.

b. Second, to generate a formal memorandum for record purposes that establishes a government position prior to negotiations with the contractor.

Based upon your review, you will be expected to provide technical assistance to the Contracting Officer during the negotiations.

3. Your review and memorandum should include consideration to:

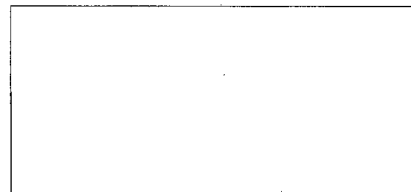
- a. Technical description
- b. Cost analysis
- c. Desirability to the government
- d. Negotiation position

4. Due to the undersigned 1/31/72.

need copy

REVIEW OF CCB NO. 222 - RV-3 RECOVERY SUPPORT

The support for the recovery effort on RV-3 is additional support that was not required under the contract. The effort was performed. Mr. Molaskey charged this effort direct and there was to be a corresponding reduction in the engineering overhead pool. This needs to be verified by the auditors. The costs do not appear to be out of line.



17 FEB 72



Request that you provide the data regarding CCR 222 in the format requested. I do not feel it sufficient for you to justify the costs purely on the basis that they do not appear to be out of line.

Relevant to understanding the costs as proposed, one must verify the material costs, reasonableness of travel vouchers in accordance with Government approved accounting practices, reasonableness of proposed support tasks of departments charging the task SPO, etc., etc.

