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John Mr. Mahon

ITEK
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9204-SHC64-201

Copy # 3

3 December 1964

Gentlemen:

The Work Statement, Summary of Deliverable Items and Costs as contained in our proposal, 9204-SHC64-141, dated 6 October 1964, have been revised in accordance with the direction received on 5 November 1964.

The attached changes constitute addendum No. 2 to the above noted proposal and is subject to the same terms, conditions and contract considerations.

Should you require further information please contact this office.

Very truly yours,

J. E. Lilley,
Contract Administrator

Approved: *F. J. Madden*
Frank J. Madden,
Project Manager

FUL-0126-64

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9204-SHC64-201
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3 December 1964

In response to the Government's direction to conclude the work effort on project Task 2 and to assign personnel from that task to other aspects of the project, especially work within the optic bar system, Itek hereby presents this addendum to its previous "Proposal For Fulcrum Camera System Feasibility Study," Itek Document Control No. 9204-SHC64-141, dated 6 October 1964.

Work additions or modifications:

1. Itek will perform an analytical study on the feasibility of using gas lubricated bars for support of the film wherever the sensitized emulsion must face a support roller or where a skew turn would be advisable in order to decrease equipment size. A breadboard will be constructed incorporating several skew and non-skew gas bars which will allow an experimental validation of the analysis and serve as a testing system for various roller gas bar configurations and film paths.

Itek will subcontract to Franklin Institute a backup analytical study of gas supported film.

A statement of the results of the analytical studies and breadboard experimentation will be included in the Phase I final report.

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2. Itek will investigate methods of film steering which will be available in the eventuality of difficulty in film transport. The technique used would be essentially that of a servo system which would sense the film edge position and orient a pair of gas bars to correct drifts in film tracking without producing transients prohibitive to image quality. A breadboard will be constructed to test the practicality of the device.
3. The continuous film drum drive as presently conceived has been designed so that it is amenable to modification for use in an intermittent film drive system. Itek therefore proposes that a design be carried out that would allow the continuous transport brassboard to be later altered to develop the intermittent method of film transport.
4. A new task group is proposed (Task 7 - Interface Liaison) whose responsibility will be that of maintaining contact with the SEAC and associate contractors to ensure proper coordination of the camera system with the other components of the reconnaissance system. It is proposed that this group meet periodically with similar groups from the other associates to form an interface board which will work with SEAC in keeping all interface considerations updated.

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Grace + 1 new hire

5. Personnel had been "on loan" from another company project to work on the facility study. These personnel have now been recalled to their home project and a small group from the deleted Task 2 will be assigned to carry on the remaining work.

The manpower estimates prepared for this revision reflect the needs of the project as viewed at this point in time. During the past two months we have gained more knowledge of the tasks to be accomplished and have revised our personnel requirements accordingly. A considerable increase has been made in the estimates for technicians and specialists to support the assembly effort. Minor revisions to engineering personnel requirements have been made in line with the magnitude and complexity of the various tasks. Personnel from Task 2 have been applied to other tasks, including new Task 7, Interface Liaison, and a few individuals are being released from the project. This has been reflected in the cost estimates.

Included with this addendum is a revised chart showing the manpower requirements for the project based on the present estimates and reflected in the revised costs. This replaces page 30 in the proposal, dated 7 October 1964.

Also attached is the revised Summary of Deliverable Items which replaces pages 24 and 25 in the 7 October 1964 proposal.

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REVISED SUMMARY OF DELIVERABLE ITEMS

(Addendum 2)

Contractual requirements of the Phase I Program are as summarized below:

<u>Item</u>	<u>Quantity</u>	<u>Description</u>	<u>Delivery Date</u>
1	1	Brassboard of constant velocity film transport system suitable for optical bar type panoramic system and incorporating optic bar bearing system.	1/31/65 <u>Completed?</u> 1 MC
2	1	Evaluation report of the performance and operational feasibility of Item 1.	1/31/65 <u>Interim Rpt</u> Revd 16 Feb * Final due 311
3	1	Task 5 Summary report giving a detailed report of the system analyses.	1/31/65 Prelim due 5 Feb ?
4	1	Preliminary interface specification defining the optical bar camera system envelope, weights, power requirements, and other camera system spacecraft interface factors.	11/16/64 SHC 64-202 dat 4 Dec, 64 SHC 65-3 dated 27d
5	1	Full scale wooden design mockup of the complete optical bar camera system in a space frame representing the vehicle.	1/31/65 <u>Completed</u>
6	1	Report summarizing the optical bar camera design.	1/31/65 <u>Revd 15 Feb</u>
7	1	Engineering specifications for the fabrication of the optical elements.	9/30/64 TM-112 + ?

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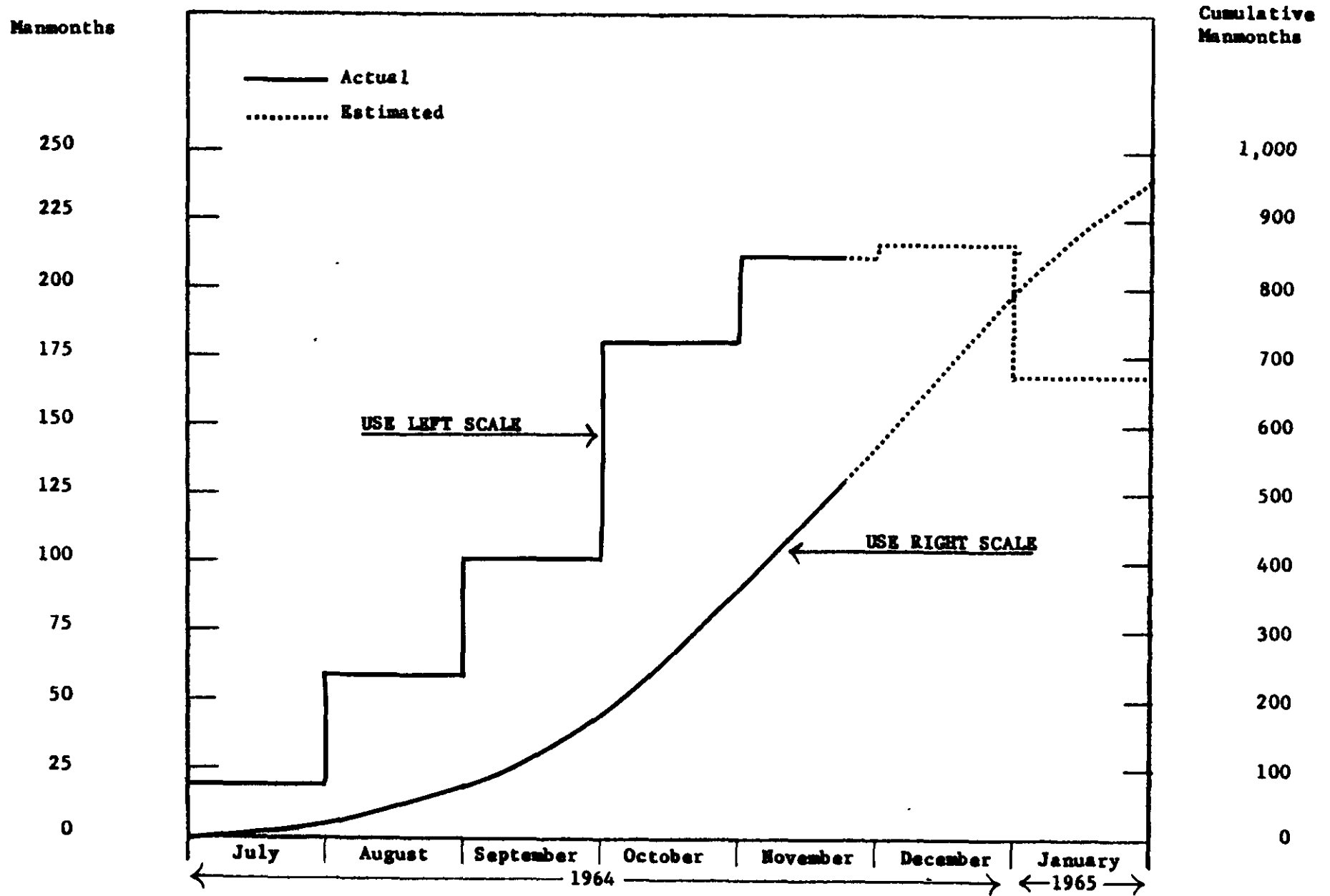
<u>Item</u>	<u>Quantity</u>	<u>Description</u>	<u>Delivery Date</u>
8	1	Interim report covering the design and expected performance of the optical systems.	9/30/64 TM172(?)
9 & 10	1	Prototype elements of the optical bar system to include one each <i>two aspheric correctors</i> Schmidt plates, primary mirror and folding mirror consistent with the requirements of the lens design.	1/31/65 ?
11	1	Final optical design report covering all aspects of the optical design and fabrication studies and <u>stating requirements for putting the designs into production.</u>	12/31/64 { Revd 18 Jan 65 ① (opt. Design by Prelim Opt Rep Fab + mounting Feasibility Eff Revd 8 Feb 65
12	1	Report on Analysis and Testing of Gas Bars.	1/31/65 Rev
13	1	Report on Film Steering.	1/31/65
14	1	Report on Intermittent Film Drive Design.	1/31/65 Revd 12 Feb 65
15	1	Summary report on 1/3 focal length system.	12/31/64
16	1	Report summarizing the 1/3 focal length camera design.	12/31/64 } 1 report 1/31/65 } Revd 19 Jan
17	1	Report of facility requirements, costs, schedules, and specifications for their construction.	12/31/64 Revd 1 Feb
18	1	Program Plan for Phase II	1/15/65
19	1	Final Summary Report Phase I	1/31/65

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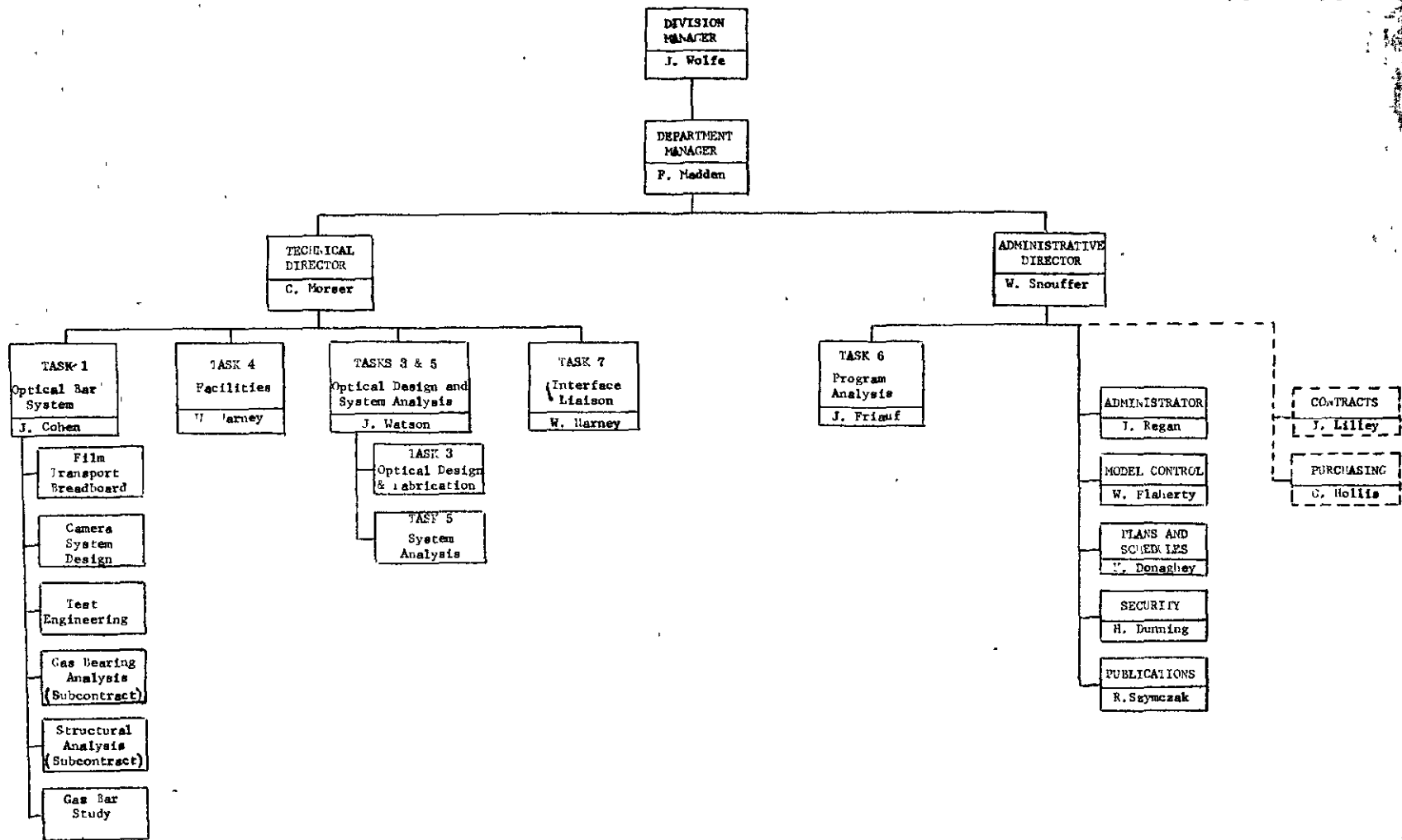
Test Plan

Revd 15 Feb

MANPOWER REQUIREMENTS



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PROJECT 9204
TOTAL ESTIMATED COST - REVISED
Inception through 1 February 1965

BID TO: Classified
TYPE OF CONTRACT: CFPF
DATE: 1 December 1964

	Project Management	TASK 1	TASK 2	TASK 3	TASK 4	TASK 5	TASK 6	TASK 7	Total Program
DIRECT LABOR HOURS	25,030	100,279	9,022	12,022	2,529	12,357	1,681	1,800	165,320
DIRECT LABOR DOLLARS	\$109,751	\$478,961	\$ 43,851	\$68,607	\$ 13,323	\$ 74,025	\$ 11,678	\$ 8,942	\$ 807,738
OVERHEAD	164,627	718,442	64,561	99,911	19,985	111,937	17,517	13,413	1,210,393
MATERIAL AND SUBCONTRACT	10,781	279,377	24,132	64,954		30,001			409,245
SPECIAL TEST EQUIPMENT		22,369							22,369
SPECIAL EQUIPMENT		12,000							12,000
TRAVEL	13,876			71					13,947
COMMUNICATIONS	2,852								2,852
CONSULTING		1,000		2,979					3,979
OTHER DIRECT LABOR	3,946	750							4,696
OVERTIME PREMIUM	1,874	12,796	1,532	804	243	648	71	162	18,330
OTHER DIRECT COSTS	448	1,026		200					1,674
SUBTOTAL	308,155	1,526,721	134,076	235,526	33,551	217,411	29,266	22,517	2,507,223
G & A	44,682	221,375	19,441	34,151	4,865	31,525	4,262	3,265	363,566
VIDYA		66,659	7,000	6,450					80,109
TOTAL COST	352,837	1,814,755	160,517	276,127	38,416	248,936	33,528	25,782	2,950,898
PROFIT	31,755	163,327	14,447	24,851	3,457	22,404	3,017	2,320	265,578
TOTAL	\$384,592	\$1,978,082	\$174,964	\$300,978	\$41,873	\$271,340	\$ 36,545	\$28,102	\$3,216,476