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DD/S&amp;T 1013-66

9 Mar 66

MEMORANDUM FOR: Deputy Director of Central Intelligence

SUBJECT: Approval of Proposed Contract Action (Project CHIGOE)

REFERENCE: Letter from DCI to Director, Bureau of the Budget,  
dated 7 September 1965 (attached)

1. This memorandum contains a recommendation for your approval. The recommendation is contained in Paragraph 10.

2. On the basis of discussions in July 1965 between the Agency and the Department of Defense (USAF, DDP&E and ARPA), the Agency assumed responsibility for the development of a multisensor optical and infrared system with foliage penetration applications--see Reference. The Agency obtained a Reserve release from the Bureau of the Budget of \$2.340 million for funding for phases of this development which could be accomplished during FY 1966.

3. The CHIGOE concept originated as DCI's response to urgent national problems in Viet Nam and Laos. It was apparent that certain proprietary Agency collection devices were well suited to the Viet Nam problem, and could be integrated with minimum delay into a multi-sensor airborne system considerably more advanced than anything then under consideration by DOD. It also happened that such multisensor systems were an area of special capability in DD/S&T, which gives a high confidence factor to the work ahead.

4. The CHIGOE airborne system combines those advanced optical and electromagnetic sensors which function most effectively over highly foliated military environments (e.g., Viet Nam and Laos) into a self-contained platform having unique navigational, computational, and display capabilities. The objective here is to perform first-pass reconnaissance, with real-time visual display to the operators of small, tactical-site targets on the ground. With this display guiding the detailed search pattern, the system can rapidly obtain an essential minimum of hard copy imagery of prime targets for post-mission

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analysis, and can additionally use a unique on-board delivery system to drop conventional ordnance, special target-marking chemicals, or other stores. In another, non-military mode, the system can fly in a covert manner to any preselected set of coordinates within range of the aircraft, using both the electronic navigation systems on board and the real-time visual display of ground checkpoints, and there perform either search, reconnaissance, or delivery of stores into a hostile environment. The system operates day or night, but is optimized for the night, low altitude mission.

5. In this first version, the platform is the SP-1 aircraft (F2V). The principal sensors are a forward-looking infrared scanner with two-band detection and electronic signal processing to enhance small, hot targets in the monitor display, a high-resolution, down-looking, stereo infrared scanner, a low-light, steerable near-infrared TV system, conventional panoramic and color cameras, airborne magnetometers, and forward-looking, terrain-avoidance radar. An advanced sidelooking VHF radar with good foliage penetration capability (POPEN II) is being developed jointly with USAF and will be retrofitted when available. High grade communications and minimal ECM will be installed. A general purpose digital computer system will perform the integration of sensor systems, navigation, and target data, and allow both significant economy of recorded data and quick response to changing conditions.

6. The unique capabilities of CHIGOE will stem from the use of devices which allow high-quality night vision in the infrared regions. In one of the systems, a TV picture of the terrain ahead is displayed to both pilots and operators in such a way that general visual contrast of ground features is relatively enhanced. In another forward-looking system, reconnaissance and tactical targets such as truck convoys, supply ships, encampments, and personnel are pinpointed through their unavoidable heat emission. Other systems, looking down or to the sides, make permanent, photo-like records of these targets in their natural environment of foliage and other partial cover, without the use of illuminants and in such a way that the information from several systems can be combined to give the most meaningful information. The "penetration" ability depends largely on whether or not there are small orifices or openings in the tree cover; in all but a few areas of current interest there are such orifices.

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7. Approximately \$375 million of the Reserve release has been obligated to date in five contract actions for long-lead items, the nature of which was identified in the briefings incident to the DCI and DOD program approval. For that reason, the contract actions were not resubmitted to the DCI for project approval. Very extensive work has been completed in the development of basic systems designs and in the selection of a prospective contractor. Ling-Tanco-Vought, ElectroSystems Division, Greenville, Texas, is being proposed as the systems contractor on the basis of design and cost competition with Lockheed Aircraft Corporation. The basic system design originated in OAS as an in-house project, was coordinated with DOD, and was presented to the contractors as a specification. LTV's design was lower in original cost, more economical to operate, and more closely responsive to the specifications, and although the incremental differences were small, the total evaluation was clearly in LTV's favor. The LTV prime contract for system development and flight testing is estimated at \$1.95 million OAS, although a brief Phase I study is underway both to refine this estimate and to provide us an optional, firm fixed price bid. For security reasons it is desirable that this contract be negotiated through Office of Special Activities' contracting facilities.

8. On the basis of present estimates an additional \$1.160 million will be required in FY 1967 to complete the system development, to perform initial operations and to make a final evaluation jointly with DOD. The total program cost to that point will thus be about \$4.0 million. There is attached for your information a listing of the principal items comprising that cost.

9. Following the specific instruction of the DCI, no provision has been made in the Agency FY 1967 budget for Project CHIBOS. It was decided that if developments on the project warranted additional funding in FY 1967, consideration would be given at the proper time to a request for an additional release from the Reserve.

10. It is recommended that you approve the actions taken or

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Subject: Approval of Proposed Contract Action (Project CHICOR)

contemplated for project CHICOR, as follows:

a. Proposed contract with LTV for systems development and flight testing as described in Paragraph 7	\$ 1,990 M
b. Prior obligations for long-lead items, Paragraph 7 above (Items 1 through 5 of the attached listing of CHICOR funding requirements)	.876 M
<b>TOTAL</b>	<b>\$ 2,866 M</b>

/s/ **ALBERT D. WHEELER**  
 Deputy Director  
 for  
 Science and Technology

The recommendation contained in Paragraph 10 is

**APPROVED:**

*(s) 10 Mar 66*

**Richard S. ...**  
 Deputy Director  
 of  
 Central Intelligence

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- Enclosures:**
1. Proj CHICOR Fund Requirements
  2. Letter from DCI to Dir, DOD 401 7 Sep 59

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