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DD/ST# 5906-65/V

ORD-3518-65  
16 DEC 1965

MEMORANDUM FOR: Deputy Director for Science and Technology

SUBJECT: Technical Background for Expansion of Dalmo-Victor  
Contract for CHIGOE

1. Dalmo-Victor Company was tasked to produce a low light level TV system for CHIGOE at the inception of the program. The contract provided for a camera, one monitor display/control unit, and spares. The camera unit was to be hard mounted.
2. In development and engineering implementation of the CHIGOE concept it was determined that the TV unit could provide a dual function, as both a targeting device and as a pilot aid. This is a part of what we have referred to as "technical upgrading" of the system. The primary advantages to be realized are in aircraft safety at low altitude.
3. The proposed change in scope would add the following features to the TV system:
  - a. two additional monitor displays, at the pilot and bow observer stations, with CRT spares and harness
  - b. an az-el steerable, stabilized camera mount, previously developed by Martin Company for another task
  - c. a manual override of the camera pointing function at the pilot station, permitting him to capture control of the system when required by low altitude, night maneuvers, and allowing him either to steer the camera to a checkpoint, visual reference or other ground feature, or to "snap" the camera straight ahead, to show upcoming terrain. In the latter mode, this would provide a real image of what is seen in radar display, and would provide for high pilot confidence in TAR/TFR programs.
  - d. a video display of the aircraft axis on all three CRT tubes, as an aid in targeting. Because the mount is completely articulated, there could be confusion, especially at low V/h, as to where the camera points.

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for CHIGOE

e. a servoed, iris-type neutral density filter in the optical train to provide full dynamic range in daylight. Our system will be particularly useful in daytime search of waterways because of the S-1 photocathode response, and this minor change will provide increased pictorial quality of that scene in display.

f. engineering services and technical support during installation and checkout at the airframe contractor facility.

4. By providing the system complete to the airframe contractor, with mount, cables, displays, and control units, an appropriate reduction in time and cost of integration will be realized. There will also be an overall improvement in TV system performance in the target search mode. But the real payoff will be in aircraft safety, in that this system will allow the pilot to commit the aircraft to very low altitudes, at night, with full confidence that the TAR/TFR function is backstopped by visual displays of the terrain ahead. This consideration alone justifies implementation of the expanded program.

5. The estimated cost of the package is \$85,000, and is detailed in an accompanying memorandum to Director of Logistics, for your approval.

  
ROBERT M. CHAPMAN  
Director of Research and Development

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DD/S&T-5906-65

16 DEC 1965

MEMORANDUM FOR: Director of Logistics

SUBJECT: Expansion of Contract with the Dalmo-Victor Company

1. The Office of Research and Development requests that Contract [redacted] with the subject firm be expanded for change of scope required by this office. The proposed new work, System Integration of Low Light TV in CHIGOE Aircraft, will provide additional hardware and engineering services to increase the utility and effectiveness of the SEC vidicon camera system in CHIGOE, and to facilitate its integration into a specific aircraft in our possession. The estimated additional cost is \$85,000, and it is requested that the performance period be extended to 30 June 1966 in order to complete the additional tasks required by the aircraft installation.

(b)(3)

2. The specific items and services to be furnished are listed in the attached proposal (items 1 and 2). In addition, item 3, "option" provides a feature described as "aircraft video axis indicator" which we desire to incorporate in the finished system. This proposal was submitted in response to a detailed technical discussion with the CHIGOE Program Manager.

3. Because of the lead time on one subcontracted item, the steer-able stabilized camera mount, it is requested that you informally authorize Dalmo-Victor to proceed with their order (to Martin Company) at the earliest practicable moment, to prevent costly delays in installation of the completed system in our aircraft.

[redacted]

(b)(3)

ROBERT M. CHAPMAN

Director of Research and Development

Attachments:

- 1. Dalmo-Victor Proposal
- 2. Reqn.#ORD-306 Amend. 1

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APPROVED: [redacted]

[redacted]

ALBERT D. WHEELON  
Deputy Director

21 DEC 1965

for  
Science and Technology

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