

~~TOP SECRET~~B-1
BYE-9322-68

CATEGORY: Collection of Intelligence
 SUB CATEGORY: Imagery
 ELEMENT: Other
 PROJECT: AQUILINE

1. PROGRESS TOWARD CURRENT OBJECTIVES:

During the period Nov 67 through Dec 68, the OSA worked directly with ORD in the development program of Project AQUILINE. OSA is integrated into the development program so that as the program begins to produce operational capability, OSA will have had the training and experience required for a smooth transition.

2. OBJECTIVES:

To provide imagery, both IR and photography, and to provide an advanced emplacement capability for collection of intelligence.

a. Method of Approach

FY 1970: During fiscal year 1970, OSA will continue to participate with ORD in the development program. The schedule now envisioned indicates that the flight test of the AQUILINE Vehicle and its associated systems will be conducted by ORD during the latter part of FY 1970. OSA will continue to participate through this phase of the AQUILINE development program. A facility will be required for flight test of the vehicle by ORD and for the subsequent training and operation to be conducted by OSA. Area 51 is an ideal facility for such activity. OSA will require 1 position in excess of its presently authorized ceiling plus \$ [redacted] not in the FY 1970 budget for support of these operations. The ORD Budget contains sufficient funds to cover this deficit.

FY 1971: The flight test program conducted by ORD will continue into early FY 1971. ORD is proposing to have 7 Vehicles for the flight test program. At the conclusion of the flight test program, ORD has proposed that the remaining flight test vehicles be rehabilitated and turned over to OSA for use in training, testing and refinement of operational concepts. Anticipating a high attrition rate among flight test vehicles, it is assumed that only three vehicles will be available from ORD for these purposes. It is therefore proposed that 4 additional vehicles be procured during FY 1971 to insure the capability of OSA to attain an initial marginal operational posture by the end of FY 1971. Additionally, in FY 1971 the mobile ground control unit required for precise navigation of the vehicle will have been completely developed and will be ready for production. It is proposed to buy 1 of these ground control units for operational use by OSA. Seventeen additional positions will be required to support the training, testing, development of operational concepts and possible deployment. These positions are: 1 Detachment Commander, 3 flight planners (Operators), 2 Admin, 2 support, 2 security, 5 automation technicians, 1 weather, and 1 medical technician. Funding requested is sufficient to support this program at Area 51 on an austere basis plus coverage of deployment contingencies.

~~TOP SECRET~~HANDLE VIA BYEMAN
CONTROL SYSTEM

~~TOP SECRET~~

BYE-9322-68

FY 1972: It is proposed that an additional ground control unit and associated equipment and manpower be provided. This will enable a dual deployment plus training and testing of new or improved aircraft systems and sensors, etc., when not deployed. It is planned to procure 8 operational vehicles to be used for up to 16 operational missions, plus test and training. Added to the total of 15 positions in FY 1971, 7 positions will be required for increased operation. These are: 2 flight planners, 1 clerk, 1 security officer, and 3 automation technicians.

FY 1973: It is proposed to procure 12 vehicles to be used for up to 24 operational missions and to continue training and payload testing. No additional positions will be required above those indicated in 1972.

FY 1974 & FY 1975: No further personnel increases are planned for this period. It is planned to procure 12 vehicles per year to be used for flying up to 24 operational missions each year and to continue testing of improved systems and sensors and refinement of operational concepts and procedures.

b. Coordination, Joint Planning and Requirements

Coordination is now being effected with ORD for joint planning during the remaining development phase. Joint planning will be established as necessary with other components of CIA to insure support for this program. Joint planning will also be established, if deemed necessary, with such other members of the intelligence community as appear interested in such a program.

The AQUILINE Vehicle will satisfy specific future requirements of the intelligence community for collection of information in normally denied areas. As opposition defenses increase in capability, the present vehicles will lose much of their utility in obtaining information over these areas. As we lose our edge in speed and altitude and as we lose foreign real estate, our capability for collection of intelligence will diminish in direct proportion. The AQUILINE Vehicle will, if developed as projected, enable an almost completely surreptitious penetration. It is also planned to attain a capability, combined with potentially available satellite relay systems, to satisfy requirements for real time intelligence, precise emplacement capability, etc.

c. Risk and Uncertainties

The obvious risk is loss of an unmanned aircraft over denied territory and the resulting political implications therefrom. The risk in this case is minimized by the fact that the aircraft is much less provocative than any other, being very small and having no armament. This constitutes a low risk capability with an extremely high information gathering potential.

d. Alternatives Considered

Four alternative levels of effort were considered for FY 1970, and beyond through FY 1975. The first consideration was attainment of an operational capability at the earliest possible date: FY 1970. The development program as outlined by ORD indicated that a relatively sophisticated operational capability could be attained during FY 1970, provided a major expenditure of FY 1969 funds took place. The assets could be acquired to meet such a capability in the most highly desirable form, i.e., a fixed base plus two mobile units capable of simultaneous deployment. This would envision an aircraft with a range of over computerized flight, and television and IR sensors. Operation

~~TOP SECRET~~HANDLE VIA BYEMAN
CONTROL SYSTEM

at these ranges with the requirements for precise navigation and precise position control of the aircraft can possibly be achieved by taking advantage of potentially available satellite relay systems, highly sophisticated ground control equipment and data quality transmission equipment. The cost of establishing such a system would be approximately \$18 million. This was considered to be impractical for numerous reasons among which are:

1. At this point in the development it can not be said for certain that the equipment in the configuration required for this type of operation would be available within the specified time period.
2. Obtaining the personnel required to man such a capability would have had to start early in FY 1969.
3. The impracticability of obtaining FY 1969 money in the amount specified indicated a different approach.

Alternative two considered was the establishment during FY 1970 of a less ambitious capability consisting of two mobile units with less sophisticated navigation and control equipment but still requiring relay systems for control of the aircraft at the extreme ranges. Equipment for this alternative would cost in the neighborhood of \$13 million for the first year's operation. To establish this capability in FY 1970 would require expenditure of approximately \$13 million of FY 1969 money. This was deemed impractical. Additionally as indicated above, it was uncertain as to whether the equipment would be developed to the extent necessary to insure reliable production systems.

Alternative three considered establishing one mobile unit during FY 1970. This unit would be considered capable of operating at ranges up to 1200 miles, which still require rather sophisticated relay systems and control and navigation equipment, which may or may not be available in the time required.

Alternative four is to rehabilitate 3 aircraft left over from the ORD test program, procure 4 additional aircraft, use the ground control available from ORD test program for training, testing and developing operational deployment concepts. This would provide a testing capability for systems and sensors for range extension and for improved aircraft performance. By late FY 1971, the transportable control unit being procured during this fiscal year would become available. This will provide, by late FY 71, an initial operational capability.

From these alternatives it is recommended that alternative four be selected for FY 1971. This will allow an orderly transition from development phase to operational phase, and assure development of sophisticated equipment necessary for attainment of additional capabilities prior to major expenditures for production.

~~TOP SECRET~~

HANDLE VIA BYEMAN
CONTROL SYSTEM

~~TOP SECRET~~

BYE-9322-68

e. Resources Required

Funding (\$ Thousands)

FY 68 FY 69 FY 70 FY 71 FY 72 FY 73 FY 74 FY 75

Pers. Svs.
Contract
Other*

--	--	--	--	--	--	--	--	--

*Other:
Travel
Payloads
Vehicles
 Re-Hab. 3
 Buy New
Contract Support
O&M and Training
Computer Systems

--	--	--	--	--	--	--	--	--

Positions:								
Ceiling	--	--	3	20	27	27	27	27
Non-Ceiling	--	--	--	--	--	--	--	--
	--	--	3	20	27	27	27	27

~~TOP SECRET~~

HANDLE VIA BYEMAN CONTROL SYSTEM

The third alternative considered establishing one mobile unit during FY 70 capable of operating at ranges up to [redacted] This would still require the sophisticated relay systems and control equipment which may or may not be available within the time required.

The fourth alternative which is recommended and funding for which is indicated in the assets required section of this call, is to establish a capability during FY 71, to concentrate on training, testing, and development of operational employment concepts. The equipment would be used to control the AQUILINE vehicle and will enable its recovery. This approach further will allow for a steady development program and an orderly transition from development over theyears covered by this call.

e. Resources Required

Funding (\$ Thousands)

	<u>FY 68</u>	<u>FY 69</u>	<u>FY 70</u>	<u>FY 71</u>	<u>FY 72</u>	<u>FY 73</u>	<u>FY 74</u>	<u>FY 75</u>
Pers. Svc	-	-	-					
Contracts	-	-	-					
Other	-	-	-					
Total								
Other								
Travel	-	-	-					
Control Equip	-	-	-					
Leases	-	-	-					
Cont Support	-	-	-					
Ground Cont Sys	-	-	-					
Navigation Term 2 ea.	-	-	-					
Sat Relay Sys	-	-	-					
Sat Down-Link	-	-	-					
Sup Commo Equip	-	-	-					
Staff Circuit	-	-	-					
Total	-	-	-					

*Funding for a satellite system may not be required if negotiations presently conducted by ORD succeed in agreements for common use of a compatible system presently in synchronous orbit.

~~TOP SECRET~~

BYE-9322-68

Positions

The following positions are required to support this activity

	<u>FY 68</u>	<u>FY 69</u>	<u>FY 70</u>	<u>FY 71</u>	<u>FY 72</u>	<u>FY 73</u>	<u>FY 74</u>	<u>FY 75</u>
Staff	-	-	-	8	17	22-	22	22
Contract	-	-	-	-	-	-	-	-
Total				8	17	22	22	22
Commo Ops				1	2	2	2	2
Technical				4	8	9	9	9
Radio Operator				1	2	3	3	3
Cryptographer				2	5	8	8	8
				8	17	22	22	22