



EXCLUDED FROM AUTOMATIC REG. DING;  
DOD D.A. 5200.10 DOES NOT APPLY

BYE-2192-63  
Copy 13 of 16

6 Feb 63

**MEMORANDUM FOR : Secretary of Defense  
Director of Central Intelligence**

**SUBJECT: Q-12 Ramjet Drone**

1. Mr. C. L. Johnson of Lockheed Aircraft Corporation completed a preliminary design feasibility study of a Q-12 ramjet drone reconnaissance system. This included full-scale model anti-radar tests and some wind tunnel tests using a model Q-12 drone mounted on a model A-12 launch vehicle. Additional tests are still in progress. In addition, four camera contractors who were invited to submit proposals completed studies concerning a camera configuration for a Q-12 reconnaissance system. The reports have been reviewed by the Deputy Director (Research), CIA, and the Director, National Reconnaissance Organization, and the Q-12 ramjet drone reconnaissance system is deemed to be technically feasible.

2. The Q-12 ramjet drone is an unmanned reconnaissance vehicle utilizing a ramjet engine already developed and tested by the Marquardt Company. The drone will be air-launched from a modified A-12 Lockheed aircraft. The drone will have a range of 3,000 miles, speed of Mach 3.3 and an operational altitude in excess of 85,000 feet. In order to reduce vulnerability, a higher speed and altitude would be desirable but not feasible with presently-developed reliable engines. Upon completion of a mission the camera payload and inertial navigation system will be ejected and an air-snatch recovery employed, similar to the DISCOVERER program system. The aircraft structure embodies A-12 anti-radar materials, and full-scale model tests indicate the radar cross section to be presently comparable to the levels achieved by the A-12 vehicle with the possibility of further improvement during the development. The most promising camera proposal for the Q-12 drone submitted by Hycon Manufacturing Company forecasts an achievable ground resolution design goal of 1-1/2 feet to 2 feet at operational altitudes.

~~SECRET~~

Handle via BYEMAN  
Control System

~~SECRET~~

BYE-2192-63

Page 2

3. The present preliminary Lockheed proposal for twenty drone aircraft, including engines and modification costs for two A-12 launch aircraft, will cost a minimum of at least \$53,000,000. The four camera proposals have been evaluated, and it is believed the Hycon proposal is the most satisfactory from the point of view of cost, time scale and technical feasibility and quality. The preliminary estimate for ten such cameras is \$2,400,000. The present approved National Reconnaissance Program has \$8,000,000 in FY 1963 and \$60,000,000 in FY 1964 which should be adequate to handle this program. In light of all these facts, it is recommended that -

a. approval be given for proceeding with the Q-12 drone program as described above; and

b. the DOD program for advanced ramjet development should be exploited with the aim of providing Mach 4 performance for possible follow-on vehicles.

(signed)

HERBERT SCOVILLE, JR.  
Deputy Director(Research)

CONCUR:

(signed)

Joseph V. Charyk 11 Feb 63  
Director  
National Reconnaissance Organization

~~SECRET~~Handle via BYEMAN  
Control System