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ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D. C. 20301

SAFSS

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CONTROL SYSTEM

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DEPUTY DIRECTOR OF  
DEFENSE RESEARCH AND ENGINEERING

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MEMORANDUM FOR The Under Secretary of the Air Force

SUBJECT: Broad Coverage System

This note is written to you in connection with the briefing that you and I received on Project FULCRUM. I would like to call to your attention that, before embarking into a large system program of this kind, we should carefully reconsider a number of technical points which have arisen during the recent time period. May I recall to your attention the following series of technical events.

1. The Purcell Committee advised against a new broad coverage system.
2. The Air Force made a series of recommendations for the improvement of the CORONA camera, in accordance with the Purcell Committee recommendations.
3. Dr. A. D. (Bud) Wheelon disagreed with the Air Force's recommendation and initiated the study of the (Dr. S.) Drell Committee.
4. The Drell Committee reported on its work and found little correlation between the product results and the mechanical or optical characteristics of the system, and made a number of suggestions for further quantitative measurements of the product.

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5. Recent missions of the CORONA system seem to confirm the original Purcell Committee recommendation to the effect that substantial improvement over the CORONA camera result can be obtained, and appear to be also confirming the Drell Committee findings because there does not seem to be any basic change in the camera setup between the recent missions and the old ones.

6. The CIA made a proposal called FULCRUM which did not correct the unknown defects of the CORONA camera nor did it take into account the questions, recommendations and conclusions of the Drell Committee, related to hardware improvement, but instead proposed to initiate a completely different camera design.

7. Most recent results for resolution in CORONA take seem to indicate a possible resolution of five to seven feet, in rough accordance with expectations. If this resolution is maintainable, is there sufficient motivation for a new broad coverage system in the 3.5 to 5 foot resolution range (CIA studies seem to indicate that resolutions substantially under this are desirable for high target detection confidence in many target classes).

As a result of the events just listed, it appears to me absolutely necessary that, before a new system design is accepted, a comparison be made between the old CORONA results, new CORONA results, the Drell Committee results (the Drell Committee could be called back to examine the most recent CORONA results), the results obtained under KH-7, and, finally, technical recommendations aimed at the new broad coverage camera to insure that the still unknown causes of poor performance in the CORONA shots (except the most recent ones) have been eliminated. (In connection with this, I would think that a laboratory investigation of the kinematics and dynamics of the very high speed film flow through the proposed FULCRUM system would be a necessary but not sufficient condition for any further interest in FULCRUM.) I believe that a substantial amount of effort could and should be devoted to these problems at the earliest possible time.

Signed  
Eugene G. Fubini

Eugene G. Fubini

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