

100-6010-39

26 September 1959

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MEMORANDUM FOR: [redacted] Acting Chief, DFD

THROUGH: Chief, Developments Branch, DFD  
Chief, Special Requirements, DFD  
Chief, Operations Branch, DFD  
Chief, Material Branch, DFD

SUBJECT: Radar in F2V7 Aircraft

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REFERENCE: Cable to DTR from [redacted] (IN 10054) dtd 26 August 1959

1. The attached cable is self-explanatory; however, there is a considerable amount of background information on the Radar, which is a doppler radar that gives airplanes ground speed and drift, and is installed in all the F2V7's. A military version of this system is the AN/APR-102.

25X1Aa. The Radar, as installed, was guaranteed by the manufacturer, [redacted] to work at altitudes as low as 500 feet. Tests at Eglin Air Force Base have shown that it will work at altitudes as low as 300 feet, which more than satisfies the manufacturer's warranty. The set of equipment, that is installed in the test F2V7, has given excellent results consistently; however, the operating altitude at Eglin has been above 300 feet and usually 500 feet or higher.

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3. The history of Radar problems in the F2V7's on [redacted] dates back to early 1959 when a cable was received at Headquarters stating the Radar was not operating properly and the people on [redacted] were considering removing the units from the airplanes. This jolted everyone since there was no forewarning of faulty operation. The monthly reports from [redacted] tech rep stationed on [redacted] gave no indication of unusual problems. (The tech rep reports generally have been our best source of information.)

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When the cable was received in early 1959, a decision was made to send a set of Radar equipment from Eglin test airplane, which had proven performance, to [redacted] and have the [redacted] equipment sent to the manufacturer, [redacted], and thoroughly bench checked. This procedure was concurred in by the manufacturer, [redacted]. Before this plan was completed, word was received

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that [redacted] had discovered two (2) wires in the system that were crossed and that the proper rewiring remedied the trouble.

The attached cable is the latest in the series of events.

4. There has been a change in operational tactics. Some time ago the operational altitude was 1,500 feet above the ground; however, this has been decreased to 150 - 200 feet in order for the airplanes to survive AI and ground fire.

5. If the Radar is removed (or retained in the airplane and not operating) two (2) other systems will be affected:

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a. The photo equipment is dependent upon Radar for ground speed to provide image motion compensation. This equipment is now in the [redacted] F2V7's. If the Radar is not operating, the photo gear will not operate.

b. The ASN-7 navigational computer, installed and now undergoing tests in the airplane at Eglin, is dependent upon Radar for ground speed and drift to operate. The ASN-7 is installed in only one airplane; however, the equipment for the other airplanes has been procured. No plans have been made for installation pending the outcome of the Eglin tests.

6. REQUIREMENTS

a. The Radar cannot be modified to operate at the 150 - 200 foot operational altitudes now being flown.

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b. The equipment should be removed from all F2V7's now at [redacted] or programmed for deployment there.

7. RECOMMENDATIONS

a. The Radar equipment be removed from the FS F2V7's. (The Group A components, i.e., brackets and wiring should be left in the airplanes.)

b. The test of the ASN-7 now in the test airplane at Eglin should be completed but the equipment removed before the airplane is deployed to [redacted].

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c. Material should return the other ASN-7 sets that are on hand to the Air Force for credit (if possible).

d. The GFI tech rep now in place [redacted] remain there to maintain jammer and other equipment, as appropriate, until expiration of current contract. Material Branch should determine personnel requirements for jammer equipment and

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and phase in a replacement for this [redacted] tech rep as required.

e. No further effort should be expended on developing P277 photo gear since it appears doubtful that the photo system will ever be used operationally for the following reasons:

(1) Visible light is used for illumination which greatly increases the vulnerability. Based on past experience it is doubtful that the crews will consent to flying the airplanes if a visible illuminating system is used.

(2) The altitude tolerances required at the low flight levels are beyond the capability of most crews. These tolerances are on the order of  $\pm 5\%$  or  $\pm 25$  feet altitude at 500 feet.

(3) Other means of photo collection are available to the Agency.

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MAJCR, USAF

CONCURRENCE:

Special Requirements, DPO

Developments Branch, DPO

Operations Branch, DPO

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APPROVED:

Acting Chief, DPO

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DPO-20/[redacted] branch

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