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12 JAN 1944

ARMY AIR FORCES
MATERIEL ~~COMMAND~~ COMMAND

MEMORANDUM REPORT ON

P-47D-10 Airplane, AAF No. 43-75035 RES:hbs:47
Date 2 December 1943

SUBJECT: Results of Flight Test

SECTION Flight

SERIAL No. Eng-47-1652-A (Addendum #1)

Contract No.
Expenditure Order No.
Purchase Order No.

A. Purpose

1. To report additional results of flight tests on P-47D-10 airplane, AAF No. 43-75035 run at manufacturer's plant. Airplane equipped with Pratt & Whitney, R-2800-63 engine, with water injection equipment, Standard Curtiss 714-102-12 propeller, and type A-17 turbo regulator. Airplane ballasted to simulate the following condition: six 50 caliber guns, 300 rounds per gun, 305 gallons gasoline, 15 gallons water, 14 pounds pyrotechnics. In this condition the gross weight was 13,234 pounds with a C.G., wheels up, of 29.63 percent M.A.C. Mixture auto-rich; throttle wide open on all tests. Horsepower data obtained with torquemeter.

B. Factual Data and Test Results

1. Climb tests paragraph No. 2 of report dated 11, October 1943 are revised above critical altitude as follows: Cowl flaps wide open; intercooler and oil cooler flaps wide open; flaps and gear up; 2700 RPM; 22,000 turbo RPM with water injection.

Altitude	Manifold Pressure "HG	Torque Horsepower	Exhaust Back Press. "HG	Rate of Climb Ft/Min	True Climbing Speed MPH
30,000	51	2070	34.7	1370	264
34,000	43.5	1780	29.7	880	276
38,000	36.0	1520	25.2	400	288
S/C 40,500	31.5	1350	22.5	100	297
A/C 41,300	—	—	—	0	—

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2. Distance required to take-off from a hard surface runway and clear a 50 foot obstacle with the engine operating at 2700 RPM in "auto rich":

Flap Setting	Average Engine RPM	Average Manifold Pressure	Average Exhaust Back Pressure "HG	Average Turbo RPM	Average Torque Horsepower	Distance Required To Clear 50' Obstacle
0	2710	55.5	37.5	7200	2200	2100
1/2	2115	56.0	37.5	7500	2250	1775
*Full	2710	55.9	37.5	7550	2235	1650

* Airplane held at 56" with half flaps. Flaps lowered to full after start of ground roll.

C. Conclusions

None.

D. Recommendations

None.

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