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WAR DEPARTMENT
AIR CORPS, MATERIEL DIVISION

JB

MEMORANDUM REPORT ON

Pursuit Twin-Engine (P-38E), A.C. No. 41-1983 LHS-BC

Date December 23, 1941

SUBJECT: Performance Tests

SECTION Flying Branch

Contract No. W-535 AC 15646

SERIAL No. PHQ-M-19-1327-A

Expenditure Order No. 431-4-22

Purchase Order No.

A. Purpose

1. Report on acceptance performance tests of P-38E conducted at the manufacturer's plant. Airplane equipped with Allison V-1710-27 and V-1710-29 engines and three-bladed constant speed propellers, blade design No. 615CC1.5-6 and 614CC1.5-6, normal blade angle range 21.5° to 56.5° at 42" radius. Gross weight as tested 14,458 lbs., c.g. 30.85% m.a.c. with wheels up; landing gear retracted; wing flaps neutral; cockpit cabin and ventilator closed; prestone and oil cooler shutters in faired position in level flight, wide open in climb; radio antenna in place; flush cover plates over gun openings.

B. Test Results: Based on horse power figures furnished by Power Plant Laboratory. Data obtained from dynamometer tests of V-1710-27 engine, A.C. No. 40-3012.

1. Level flight speeds:

Altitude Ft.	True Speed MPH	R.P.M.	B.H.P. per Engine
5000	340.5	3000	1150
*20,000	393 -	3000	1150
*20,000	386.5	2600	1000
*20,000	352.5	2280	750
20,000	336	2150	650
20,000	319	2000	550
20,000	287.5	1800	375

*Carburetor air intercooling is insufficient to meet Air Corps cooling requirements.

*intd
HGB 208
see 008
in SR 07/14/41*

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2. Climb data, mixture control in automatic rich position:

Altitude Ft.	Elapsed Time in Climb Min.	True Speed MPH	R.P.M.	B.H.P. per Engine
0	0	162	3000	1125
5000	1.57	172	3000	1128
10,000	3.30	183	3000	1127
14,600	5.00	194	3000	1116
15,000	5.15	195	2600	999
20,000	7.21	209	2600	977
25,000	9.75	223	2600	955
26,000	10.28	227	2600	950

Test discontinued at 26,000 ft. due to high carburetor air temperature (60° C.).

3. Determination of airspeed indicator and altimeter installation errors with airspeed static openings located on centerline of airplane approximately 21" below fuselage and 40" aft of nose:

Indicated Airspeed MPH	Indicator Vs. Water Column MPH	Calibrated Airspeed MPH	Airspeed Installation Error MPH	Altimeter Installation Error Ft.
300	300	306	-6	-50
275	275	281.5	-6.5	-50
250	250	257	-7	-45
225	225	232	-7	-45
200	200	207	-7	-40
175	176	182	-6	-35

4. Balance of tests originally requested were not obtained at the manufacturer's plant due to failure of left engine.

5. Individual intake port back-fire screens not installed in engines.

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