Classification changed to UNCLASSIFIED by authority of CG/AM DATE 3/24/48 Freddie Sutherland Capt USAF

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WAR DEPARTMENT
AIR CORPS, MATERIEL DIVISION

~~CLASSIFICATION CANCELLED OR CHANGED TO~~ 4-8-46

MEMORANDUM REPORT ON
Pursuit Interceptor (P-40B), A.C. No. 41-5205 RLF-BC

Date April 26, 1941

SUBJECT: Flight Test at Manufacturer's Plant

SECTION Flying Branch ~~Classification changed to~~ UNCLASSIFIED ... DATE 3 Oct 1947

SERIAL No. PHQ-M-19-1227-A

Contract No. AC-15802
Expenditure Order No. 430-4-61
Purchase Order No.

A. Purpose

1. Flight test at the manufacturer's plant of the Curtiss P-40B airplane equipped with Allison V-1710-33 engine and 3-bladed, constant speed propeller, blade design No. 89301-3. Gross weight 6835 lbs. Landing gear retracted, cabin and ventilators closed, carburetor cold, wing guns in place, blast tubes for synchronized guns in place, radio antenna in place. Airplane camouflaged.

B. Factual Data

1. High speed at 15,000 ft. at wide open throttle, was 352 mph at 1090 bhp at 3000 rpm, radiator shutters neutral.

2. High speed at 5000 ft. was 319 mph at 1085 bhp at 3000 rpm, radiator shutters neutral.

3. High speed at 2600 rpm at 15,000 ft. at wide open throttle, was 331.5 mph at 920 bhp, radiator shutters neutral.

4. Speed at rated power at 5000 ft. was 307 mph at 950 bhp at 2600 rpm, radiator shutters closed one notch from neutral position.

5. Cruising data at 15,000 ft., radiator shutters closed two notches from neutral position:

True Speed MPH	R.P.M.	B.H.P.	% Rated BHP
310	2280	720	75
286	2200	600	62.5
258	2100	480	50
236	2000	400	41.7

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f. Fuel consumption at 310 mph at 720 bhp at 2280 rpm was 57 gal/hr, giving a specific fuel consumption of .475 lb/bhp/hr. The mixture was leaned manually for maximum economy on this run. With a fuel load of 120 gal. this would give an endurance of 2.1 hr and a range of 650 mi. With a fuel load of 160 gal., it would give an endurance of 2.76 hr. and a range of 855 mi.

g. Climb data, radiator shutters wide open:

Altitude Ft.	Rate of Climb Ft/Min	R.P.M.	B.H.P.	True Airspeed MPH	Time Min.
0	2900	3000	952	143	0
5000	2985	3000	1002	155	1.7
10,000	3070	3000	1050	167	3.35
14,750	2610	3000	955	176	5
15,000	2160	2600	835	176	5.11
20,000	1520	2600	700	183	7.9
25,000	935	2600	585	189	12.0
30,000	360	2600	490	195	20.3
32,400	100	2600	-	-	32.0
33,300	0	2600	-	-	-

h. Determination of airspeed and altimeter installation errors. Barometric pressure at level of test was 28.96" Hg.:

Indicated Airspeed MPH	Indicator Vs. Water Column MPH	Calibrated Airspeed MPH	Airspeed Installation Error MPH	Altimeter Error Ft.
270	271	277	-6	-175
240	240	246.5	-6.5	-120
210	210	215.5	-5.5	- 70
180	180	185	-5	- 35
150	150	154	-4	- 15

i. An attempt was made to measure rise in carburetor air temperature with the carburetor heat control in the hot position, but it was impossible to move the control to the hot position while the airplane was in flight.

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