

Classification changed to
UNCLASSIFIED
by authority of CG, AMC
DATE 6/15/49

SEP 1949

Graduate Test Technician
Capt, U.S.A.F.

ARMY AIR FORCES
MATERIEL ~~GENERAL~~ COMMAND

WKS: ext 49

MEMORANDUM REPORT ON
Pursuit Single Engine P-51, AAF No. 41-37320

Date 16 September 1949

SUBJECT: Speed Tests

SECTION Flight

Contract No. _____
Expenditure Order No. 720-85
Purchase Order No. _____

SERIAL No. Eng-47-1647-A

A. Purpose

1. To report high speeds on P-51 airplane AAF No. 41-37320 under different finish conditions.

B. Factual Data and Test Results

1. Airplane is equipped with V-1710-39 engine with 7" manifold screens removed; three bladed constant speed propeller, blade design No. 89301-6; four cannons and armor plate in place; gross weight 8824 pounds; landing gear retracted, wing flaps neutral, radio antenna installed, carburetor cold, prestone and oil cooler scoop closed. Horse-powers obtained from power curve V-1710-39 dated December 12, 1941.

2. Airplane was repainted with standard camouflage paint before the flight tests were run. To obtain the polished finish the standard painted surface was treated as follows:

- a. Sanded with No. 320 sandpaper using water and flushing with water.
 - b. Polish with FFF pumice using water and flushing with water.
3. High speeds at wide open throttle.

Altitude	Unpolished Camouflage Paint Finish			Sanded and Polished Camouflage Paint Finish		
	Man. Pr.	B.H.P.	True Speed M.P.H.	Man. Pr.	B.H.P.	True Speed M.P.H.
13,000	46.6	1200	395	47.2	1220	402
18,000	38.4	982	388	38	8000	394.5

ma

4. The increase in speed at 1200 brake horsepower at 13,000 feet was 4.5 M.P.H.

NOTE: Airplane was equipped with a new engine with streamlined manifold (manifold T screens removed) before the above flight tests were run. This change in power plant accounts for the higher critical altitude and high speed when compared to performance in Memorandum Report No. Eng-19-1622-A.

Homes J Bates
PAB
Prepared by R. E. SCHREIBER, 1st Lt., A.C.

S. A. Gilkey
OKR
Approved by S. A. GILKEY, Colonel, A.C.
Chief, Flight Section

W. E. Lamar
Approved by W. E. LAMAR, Colonel, A.C.
Acting Chief, Eng. Div.

W. E. LAMAR,
Colonel, A. C.,
Chief, Flight Research

Distribution:

- HKC* Chief, Engineering Division
- ✓ Project Engineer, Paul C. Hollowell, 2nd Lt.
Fighter Branch, Prod. Eng. Section ✓
- ✓ Chief, Aircraft Laboratory
- ✓ Chief, Aerodynamics Branch
- ✓ Chief, Aircraft Projects, Eng. Div.
- ✓ Chief, Power Plant Laboratory
- ✓ Chief, Propeller Laboratory
- ✓ Chief, Flight Data Unit, Technical Data Lab.
- ✓ *File, Rec. Br. (1) TDC*