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ARMY AIR FORCES
MATERIEL ~~CENTER~~ Command

MEMORANDUM REPORT ON
P-40Q Airplane, AAF No. 42-9987

CHEL:ew:47

Date 2 November 1943

SUBJECT: Pilot's Comments

SECTION Flight

SERIAL No. Eng-47-1660-A

Contract No.
Expenditure Order No. 430-4-94
Purchase Order No.

A. Purpose

1. To report Pilot's Comments on the P-40Q Airplane, AAF No. 42-9987.

B. Factual Data

1. The airplane was flown at a gross weight of 8203 pounds for take-off, including 160 gallons of gas, with a C.G. of 27.00 percent M.A.C.

2. Cockpit Layout.

The cockpit and instrument panel arrangements are similar to earlier models of the P-40 series; however, the new bubble canopy gives much greater head and shoulder room.

The coolant radiator shutters are located one in each wing and two toggle switches are employed to operate these shutters. The movement of the shutters is too slow and one control switch for both shutters would be more practicable since there is no need for their individual operation. Automatic shutter controls would be even more desirable. The old prestone and oil cooler shutter control now operates the oil cooler shutters only.

The pilot's seat is non-adjustable and the inertia starter has to be energized by hand or other external means. Both of these conditions are considered to be unsatisfactory.

3. Taxiing and Ground Handling.

Taxiing and ground handling qualities are satisfactory for most ground and wind conditions, and the brakes are easily applied at all rudder positions giving good directional control. Ground engine cooling appears to be critical and the engine may not be run for any appreciable length of time without exceeding its cooling limits.

4. Take-off and Climb.

The airplane takes off after a short ground run and climbs steeply with considerably less torque affect than on earlier P-40 models. The old landing gear retracting mechanism is still employed on this airplane and the retraction period is entirely too long. Engine cooling in climb appears to be adequate.

5. Stability and General Flying Characteristics.

The airplane is statically and dynamically stable longitudinally and directionally, and neutrally stable laterally.

The handling characteristics are excellent and the airplane is very maneuverable. Control forces, although slightly heavy, are well coordinated and highly effective from the stall up to the present limiting I.A.S. of 400 M.P.H. An exceptionally short radius of turn and fast rate of roll are characteristic of this airplane.

Trim qualities are good and unlike earlier P-40 models, there is very little change in directional trim during transition from dive to climb. The operation of the landing gear, landing flaps, or coolant shutters results in no objectionable change in trim, the slight change being easily corrected with trim tabs.

With the shutters in the flush position coolant and oil temperatures remained well within the normal operating range.

Noise and vibration are considered to be negligible.

6. Stalls.

The airplane stalls rather abruptly with very little warning and exhibits a strong tendency to roll over to the left; however, this condition is not too objectionable since good control is maintained at the stall.

7. Vision.

A bubble type canopy is installed on the airplane giving excellent all around visibility. A much smaller canopy could be utilized without impairing the visibility or reducing appreciably head and shoulder room.

8. Approach and Landing.

The airplane has a normal glide angle and a three point landing can be easily made. Ground control is satisfactory with the airplane showing no tendency to ground loop.

9. Power Plant and Associated Equipment.

An Allison V-1710-101-F-27R, two stage, fluid coupling engine is installed in the airplane. The supercharger is easy to operate in that it requires only the movement of the throttle control.

The propeller control is too sensitive and it is suggested that additional functional and cooling tests be run in order to determine the suitability of this engine installation for operational use.

C. Conclusions

1. It is the pilots opinion that this is the best P-40 type airplane he has flown and that the work on suggested modifications be continued.

D. Recommendations

1. Further flight tests should be conducted on this airplane for performance data and for combat comparisons with other pursuit airplanes.

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