

ARMY AIR FORCES
MATERIEL CENTER COMMAND

MEMORANDUM REPORT ON

PJR:mem:47
Date 24 March 1944

SUBJECT: Stability on P-51B Airplane,
AAF No. 43-12095

SECTION FLIGHT

SERIAL No. ENG-47-FR-TC2

Contract No.
Expenditure Order No.
Purchase Order No.

A. Purpose:

1. To determine directional stability on P-51B airplane, AAF No. 43-12095, equipped with dorsal fin and leading tab.

B. Factual Data:

1. This airplane was flown by Major P. J. RITCHIE, 10 March 1944; total flying time, one hour, fifteen minutes. The airplane weighed 8,521 pounds and the c.g. was 25.6 per cent. The airplane was flown from 300 to 145 MPH at 8,000 feet. The wings were held level with the stick, and a yaw of 10 degrees right and left was accomplished by the rudder. The rudder was released and curves of yaw versus time were obtained (Exhibit "A"), in order to get a graphic picture of the stability.

C. Conclusions:

1. The airplane is statically and dynamically stable at speeds of 300, 245, 190 and 145 MPH. The rudder forces seemed to be higher than on other P-51B airplanes. This was probably partially due to the flush static airspeed installation, and partially due to the leading tab. The difference between flush static installation and normal installation at high speeds accounts for part of the increased rudder force due to the different indicated airspeeds at the same calibrated airspeeds. A leading tab always gives higher rudder forces. The rudder forces are high in comparison with the aileron forces, but are not objectional. The trim tabs are not as effective in this airplane as they are in normal P-51B airplanes.

D. Recommendations: None

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