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~~CONFIDENTIAL~~

ARMY AIR FORCES
MATERIEL CENTER

MEMORANDUM REPORT ON
Heavy Bomber, B-24D, A.A.F. No. 41-24185 HE-da-19
Date December 11, 1942

SUBJECT: Pilot's Observation

SECTION Flight

SERIAL No. FS-M-19-1520-A

Contract No. .....
Expenditure Order No. ---
Purchase Order No. .....

A. Purpose

1. Report on flights of B-24D airplane with c.g. location of 34.9 percent m.a.c. (wheels down) at a take-off gross weight of 56,000 pounds.

B. Test Results

1. The airplane will rock back on its tail while taxiing unless precautions are taken. In order to keep the tail from hitting the ground, it is necessary to use more power than is required with the normal c.g. location while using brakes as a drag. During landing ground roll at the low speeds the airplane has a tendency to rock.

2. Take-off was normal. Lowering wing flaps on the landing glide approach causes the airplane to become unstable. Pilots flying the airplane with this loading should be cautioned to be on the alert during the glide approach with flaps down.

3. Handling characteristics in flight are satisfactory. The stability has not been effected to the extent of preventing operation on instruments or night flights, although a closer watch of the instruments would be required.

4. Stability: airspeeds referred to are indicated values.

a. Clean condition, airplane trimmed for level flight at 42" Hg. and 2550 RPM at 9,000 feet, corresponding airspeed 215 MPH.

The airplane is statically and dynamically stable when pulled up to speeds greater than 145 MPH. If pulled up to speeds of less than approximately 145 MPH, it is statically unstable.

The airplane is statically and dynamically stable when nosed down. If displaced a great deal, the airplane borders on neutral static stability.

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b. Clean condition, airplane trimmed for level flight at 30" Hg. and 2150 RPM at 9,000 feet, corresponding airspeed 182 MPH.

When pulled up the airplane is the same as in (a). Statically and dynamically stable when nosed down.

c. Clean condition, airplane trimmed for power glide at 175 MPH at 17" Hg. and 2150 RPM.

Statically unstable when pulled up. Borders between static and dynamic stability and neutral static stability when nosed down.

d. Landing configuration, airplane trimmed for landing approach.

Statically unstable.

5. Stick forces required to pull the nose up from the trimmed flight condition do not increase in the normal manner with airspeed. The elevator forces are approximately the same at 150 MPH up to 260 MPH, which was the maximum speed tested.

6. It is necessary to have the tail of the airplane propped up while parked with this c.g. location.

Concurrence:

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