

68. (U) IOW 5 Aug. 1944
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Chief, Airc. Lab.
Eng. Div., WF
To: Chief, Prod. Eng. Sect..
WF, Attn: Bomb. Br.
(File: Central Files)

Buffeting of the bomb bay doors, fuselage vibration, and directional oscillations of the airplane due to an unsteady flow condition in the bomb bay occurred when the bomb bay doors on the A-26 were opened. These difficulties were overcome by a spoiler system, consisting of three 4 inch by 16 inch vertical plates mounted under the fuselage forward of the bomb bay. The ~~spoilers were fully retractable so that there was no~~ reduction in speed when the bomb bay doors were closed.

UNCLASSIFIED

420

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Attention: Bombardment Branch.

5 AUG 1944

A-26B Bomb Bay Investigations

452' Douglas

1. The following comments are given on Douglas Experimental Flight Test Division Technical Report No. E-67, entitled "Results of A-26B Bomb Bay Investigations" as requested in DADTR No. B-45-436, dated 15 July 1944.

2. The referenced report contains the data from several flight investigations on the A-26B bomb bay. When the bomb bay doors in their present configuration were opened at speeds in excess of 240 mph I.A.S. an unsteady flow condition existed in the region of the bomb bay that caused objectionable pressure fluctuations in the rear compartment, buffeting of the bomb bay doors, vibration in the fuselage, and directional oscillations of the airplane. The Bombardment Branch of Production Engineering Section has confirmed the fact that these difficulties existed and were highly objectionable.

3. As a result of the investigation a spoiler system consisting of three 4 inch by 16 inch vertical plates mounted under the fuselage just forward of the bomb bay was selected as the production configuration. The two outboard spoilers reduced the door shaking and eliminated the directional oscillations. The center spoiler decreased the static pressure in the airplane and lessened the magnitude of the pressure fluctuations in the rear compartment.

4. The spoilers are fully retractable; therefore, in the bomb bay doors closed position, no reduction in speed is effected. With the doors open, the Indicated airspeed at 4500 feet density altitude at rated rpm and manifold pressure is decreased from 266 mph to 264.5 mph by the three 4-inch by 16-inch spoilers.

5. Metal patches were put over the lightening holes in the bomb bay doors to prevent the skin from pulling over the rivet heads.

6. Loads in the actuating arms on the rear bulkhead were recorded but they are only of casual interest.

7. A satisfactory solution to the open bomb bay flow problem was found in the three retractable spoilers.

COM. GEN.

TECH. ENG.

ADM. ENG.

C. O.

BUD. OFF.

EXP. ENG.

CONTRACT

INSP.

PROD. DIV.

PROD. ENG.

PROD. CONT.

I. P. S.

A. S. C.

TECH. DATA

CIV. PERS.

OTHERS

430

Chief, Production Engineering Section, W.P., Att. Bomb. Br.
A-26B Bomb Day Investigations

5 AUG 1944

8. The data presented appear very comprehensive and are correctly interpreted in the referenced report.

9. It is recommended that the report be accepted.

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