

# SERVICE BULLETIN

STINSON DIVISION

CONSOLIDATED VULTEE AIRCRAFT CORPORATION

WAYNE, MICHIGAN

TITLE Rudder and Elevator Leading Edge

BULLETIN NO. 228

MODELS AFFECTED: 108 (Voyager)

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DATE March 19, 1946

It has come to our attention that during ground handling of the Voyager 150 it is possible to inadvertently bend the leading edge of the rudder and elevator and restrict the free movement of these surfaces. To prevent this condition, the following should be accomplished:

Tie-clips are to be added to the free edges of the rudder and elevator cover sheets forward of their respective spars, as shown on the accompanying illustrations. The rudder cover sheets are to be cut at the upper end of spar as shown.

**RUDDER** - Remove the rudder. The control cables of the rudder are held in tension by springs and it is not necessary to slacken the turnbuckles to detach cables from rudder. The seven clips are to be located as shown on Figure 1. Drill .098 holes for rivets (#40 Drill).

Drill .125 inch diameter holes at junction of spar flange and rib flange and saw-cut both cover sheets to hole along flange of rib as shown on Figure 1.

This rudder change has been incorporated into airplanes bearing serial 108-176 and up.

**ELEVATOR** - Remove the elevator panels. Removing the bolts through central hinge and control horn will permit removal of each panel without disturbing the elevator control cables. Disconnect trim tab flexible shaft at trim tab horn and detach shaft housing from elevator. Attach three clips to each panel as shown on Figure 2. Drill .141 holes for screws (#28 Drill).

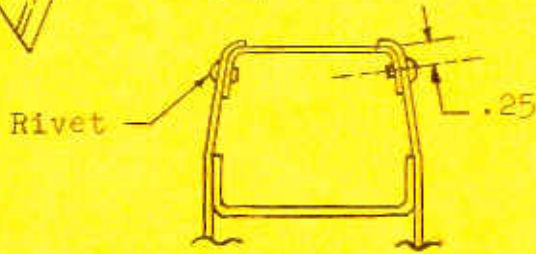
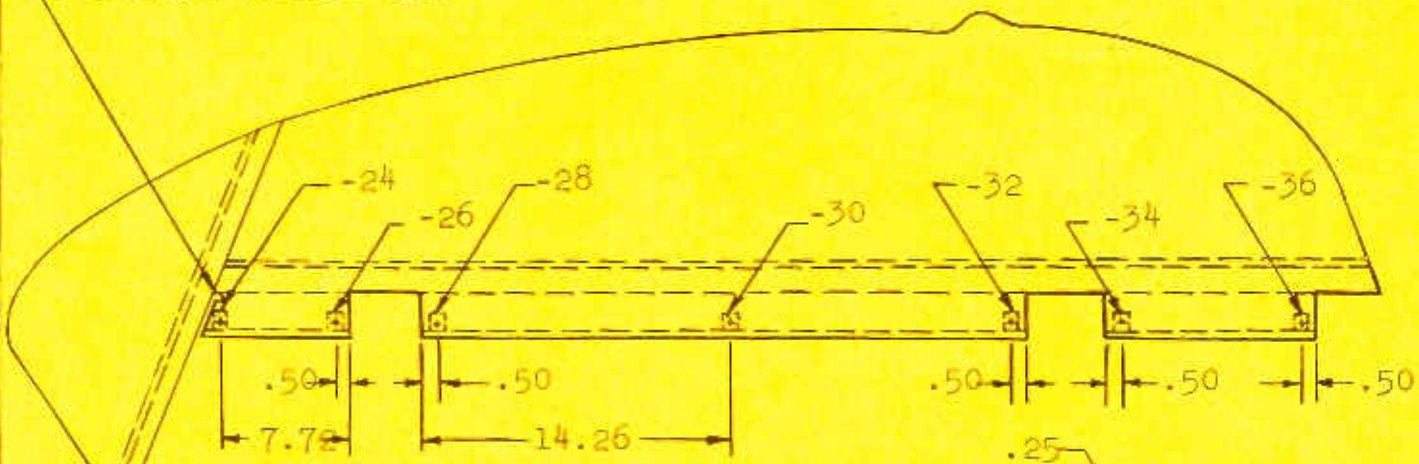
This elevator change has been incorporated into airplanes bearing serial 108-92 and up.

Necessary parts, tabled below, may be secured by contacting our Service Department and advising the serial number of the plane for which they are required.

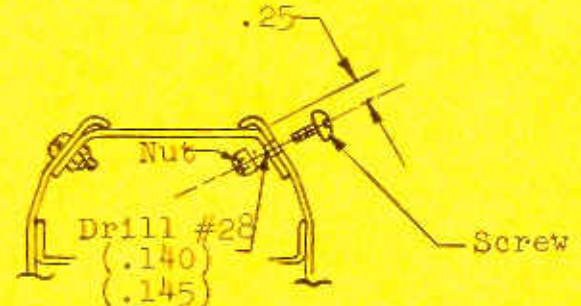
PARTS REQUIRED:

<u>Rudder</u>		<u>Elevator</u>	
1 - 108-2611000-24	Tie-.73 Long	2 - 108-2201007-300	Tie-1.65 Lg.
1 - 108-2611000-26	Tie-1.02 Long	2 - 108-2201007-302	Tie-1.81 Lg.
1 - 108-2611000-28	Tie-1.19 Long	2 - 108-2201007-304	Tie-1.97 Lg.
1 - 108-2611000-30	Tie-1.82 Long	12 - AN-526-632R6	Screw
1 - 108-2611000-32	Tie-2.41 Long	12 - AN-365-632	Nut
1 - 108-2611000-34	Tie-1.88 Long		
1 - 108-2611000-36	Tie-1.14 Long		
14 - AN-456-AD-3	Rivet		

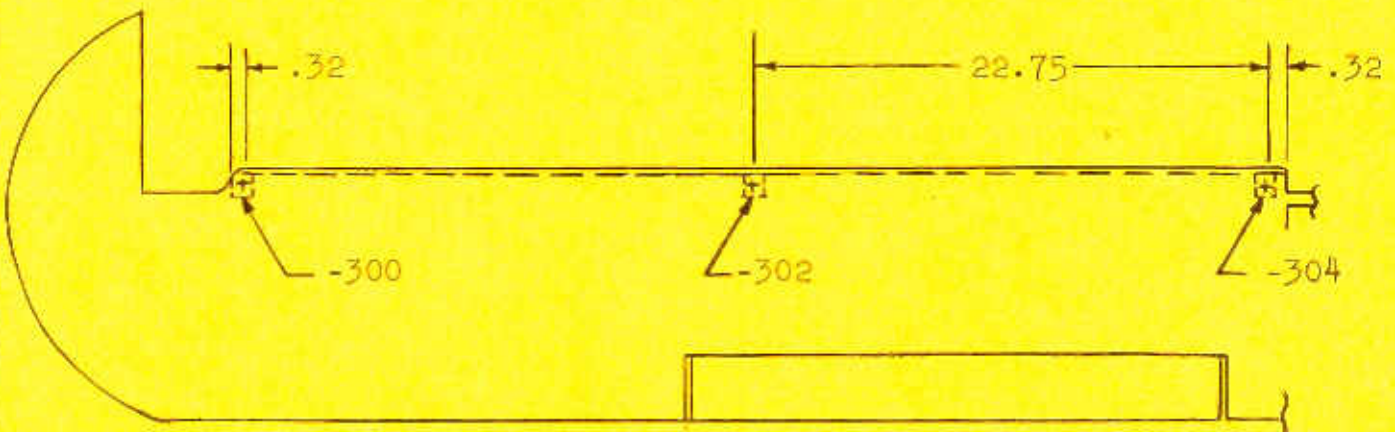
Saw-cut Sheets to  
.125 Dia. Relief Hole



Typical Rudder Assembly Section



Typical Elevator Assembly Section



*George Martin*  
Service Department