



Modification Bulletin

Aircraft Type
91 Safir

Reference Airplane 91B, 91B-2, 91C. Engine Ly O-435-A Introducing of propeller governor	Date August 22, 1958	No 91.6/17B	
	Saab Service Dept. C Larsson		
	Saab Design. Dept. J Boklund	Page 1 of 8	
Urgency IV	Royal Swedish Board of Civil Aviation S Fogelstrom		
Marking -	Effect on weight distribution		
	Weight change lbs	Station In.	Moment change Lbsin.
	-	-	-

Time of delivery for necessary parts

According to offer
K/K

Drawings: Not essential
1038166 Propeller governor control

Airplanes concerned:
91B, 91B-2 and 91C

Parts required per plane:

Item	Ref. figure	1		
01	1	Gable screw	AS 218418-M4H	
02	1	Cable	AS 218487-1,8-BCVx835	
03	1	Turnbuckle	AS 218496-M4x50	
04	2	Link	1038191	
05	2	Link	1038192	
06	1	Casing half	1076333	
07	1	Casing half	1076967	
08	1	Pulley	AS 225401-1	
09	1	Washer	1038190	Plastic
10	1	Bracket	1038171ur	
11	1	Sheet	1038225ur	Stainless steel
12	1	Pin	AS 211601-5x16	
13	3	Pin	AS 211601-5x12	
14	7	Washer	AS 215101-5,1	Aluminium
15	4	Cotter pin	AS 211401-1,5x10	
16	1	Screw	AS 212117-M5x26	
17	1	Lock nut	AS 215402-M5	
18	1	Nut	585739	
28	1	Spring	1038228	
29	1	Bracket	1038229	
34	6	Screw	AS 212116-M4x12	
35	4	Screw	AS 212116-M4x10	
36	10	Lock nut	AS 215402-M4	
37	10	Washer	AS 215101-4,1	Aluminium



<u>Item</u>	<u>Ref. figure</u>		
19	1	Adapter	1038160-1
20	1	Propeller Governor	6101413
21	1	Hose Assy	AS 251220-8x650
<u>Ref. figure 4</u>			
22	1	Hose Assy	AS 251220-8x1700
23	1	Swivel Joint	AS 252228/B-8
	1	Banjo Fitting	AS 252241/B-8
	2	Sealing Ring	AS 215234-14,1
<u>Ref. figure 5</u>			
24	1	Coupling Nut	AS 252302/B-8
	1	End Taper Fitting	AS 252341/B-8
<u>Ref. figure 6</u>			
25	1	Return Link	SA 594808
<u>Ref. figure 7</u>			
26	2	Clamp	AS 216518-18
27	2	Sheet	1038226ur
	2	Screw	AS 212126-M5x12
	2	Lock Nut	AS 215402-M5
<u>Ref. figure 8</u>			
28	1	Transmitter, cylinder thermometer	SA 577282
29	1	Adapter	SA 577283
30	1	Compensation hose	SA 577281
31	1	Insulation hose	AS 268602-16x200
32	2	Insulation hose	AS 268602-10-150
33	1	Cylinder thermometer	SA 577280
	4	Screw	1077835ur

The following parts are obsolete:

- Propeller control (between control pedestal and propeller selector valve)
Hose Assy AS 251220-8x1370 (between engine oil pressure connection and propeller selector valve)
Hose Assy AS 251220-8x256 (between vacuum pump and oil deflector Assy)
Return Link SA 594664 and valve lever 1077867.

For keeping constant RPM during flight a single-acting propeller governor Saab 6101413 can be introduced.
The propeller governor is a modified Woodward No. 210105 with the identification number O-435 stamped on its flange side, which means that the



relief valve and gear pump are set out of functions.
Airplanes with propeller governor installed must be equipped with cylinder thermometer.
The reason for this is to have a supervision instrument when leaning the fuel-air mixture for flying at high attitudes.

Work procedure:

Remove existing control between control pedestal and propeller selector valve.
Remove control lever from control pedestal.
Drill a new hole \varnothing 5 H11 in control lever and cut off material according to fig. 1.
Refit control lever.
Drill \varnothing 4,2 mm holes in sheet item 11 according to existing rivet holes in firewall. Fasten sheet item 11 with screws to cover the hole after removed control in firewall according to fig. 1.
Disconnect the hoses at the vacuum pump and remove the vacuum pump.
Fit adapter item 19 on the free mounting flange of the engine according to fig. 3. Connect a stay to a fuel pump mounting screw and an engine screw bolt according to fig. 2.
Mount the vacuum pump on adapter according to fig. 3.
Replace existing hose assy between oil deflector and vacuum pump by a new one, item 21, fig. 3.
Connect the hoses to the vacuum pump. As a consequence of the changed spinning direction of the vacuum pump the hoses from reduction valve and oil deflector must switch connection place on the vacuum pump.
Drill a hole \varnothing 5 H11 in propeller governor lever according to fig. 1.
Mount the propeller governor item 20 to adapter according to fig. 3 and 4.
Add required number of shims under the fastening nuts, when mounting propeller governor to adapter and at vacuum pump Pesco 3P-194.
Mount the new control according to fig. 1.
Remove existing oil pressure hose between T-fitting on engine RH side and propeller selector valve.
Plug the T-fitting on engine RH side with end taper fitting and coupling nut item 24 according to fig. 5.
Mount hose assy item 22 between adapter and propeller selector valve according to fig. 4, 6 and 7. Clamp hose item 22 to intake pipe for cylinder 2 and 6 with clamp item 26 and sheet bracket item 27 respectively according to fig. 7.
Remove existing return link and valve lever and mount the new one, item 25 according to fig. 6.
Lash the new hoses according to fig. 3, 4, 6 and 7.
Fasten bracket item 29 with screws and fit spring item 28 according to fig. 1.
Remove the sheet cover over the centre panel.
Dismount the centre panel and remove the instruments.
Drill a hole \varnothing 57,5 mm on a suitable place on the centre panel for cylinder thermometer item 33, figure 8.
Drill a hole \varnothing 48 mm on the corresponding place on the sheet cover and flange the hole in conformity with the other holes in the cover.
Insert the cylinder thermometer in the new hole in the centre panel and mark off the attachment holes.
Remove the cylinder thermometer and drill the holes 4,5 mm.
Fit adapter item 29 and transmitter item 28 to the engine in the existing hole in cylinder No. 3 according to section A-A figure 8.
Install and connect the electric cables according to figure 8 and 9.
Fit the instruments on the centre panel.
Fit the centre panel.
Fit the sheet cover.



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Adjustment

Ref Airplane Manual Saab Safir 91B, 91B-2 and 91C, chapter 2:3:L.

The propeller shall be installed according to item 2.3 and 3.1 a, b and c. Disconnect hose item 22 from adapter and connect to the hose a hand oil pump. Set by hand propeller in high pitch. Pump oil with max 3 kp/cm^2 pressure to move propeller blades into low pitch. Check measures according to item 3.1 a and b.

Disconnect hand oil pump and connect hose item 22 to adapter.

Run engine on ground at high RPM and full throttle. The obtained RPM shall be 2300 - 2400. If the desired RPM is not obtained, adjust end position stop screw on propeller governor lever.

Make a test flight. During take-off 2550 RPM shall be obtained but not exceeded. If max allowed RPM exceeds, pull propeller control lever back to 2550 RPM and mark off position. Return to field and stop engine. Set propeller control lever to marked off position and adjust end position stop screw for governor lever to contact the lever.

Make a new test flight.

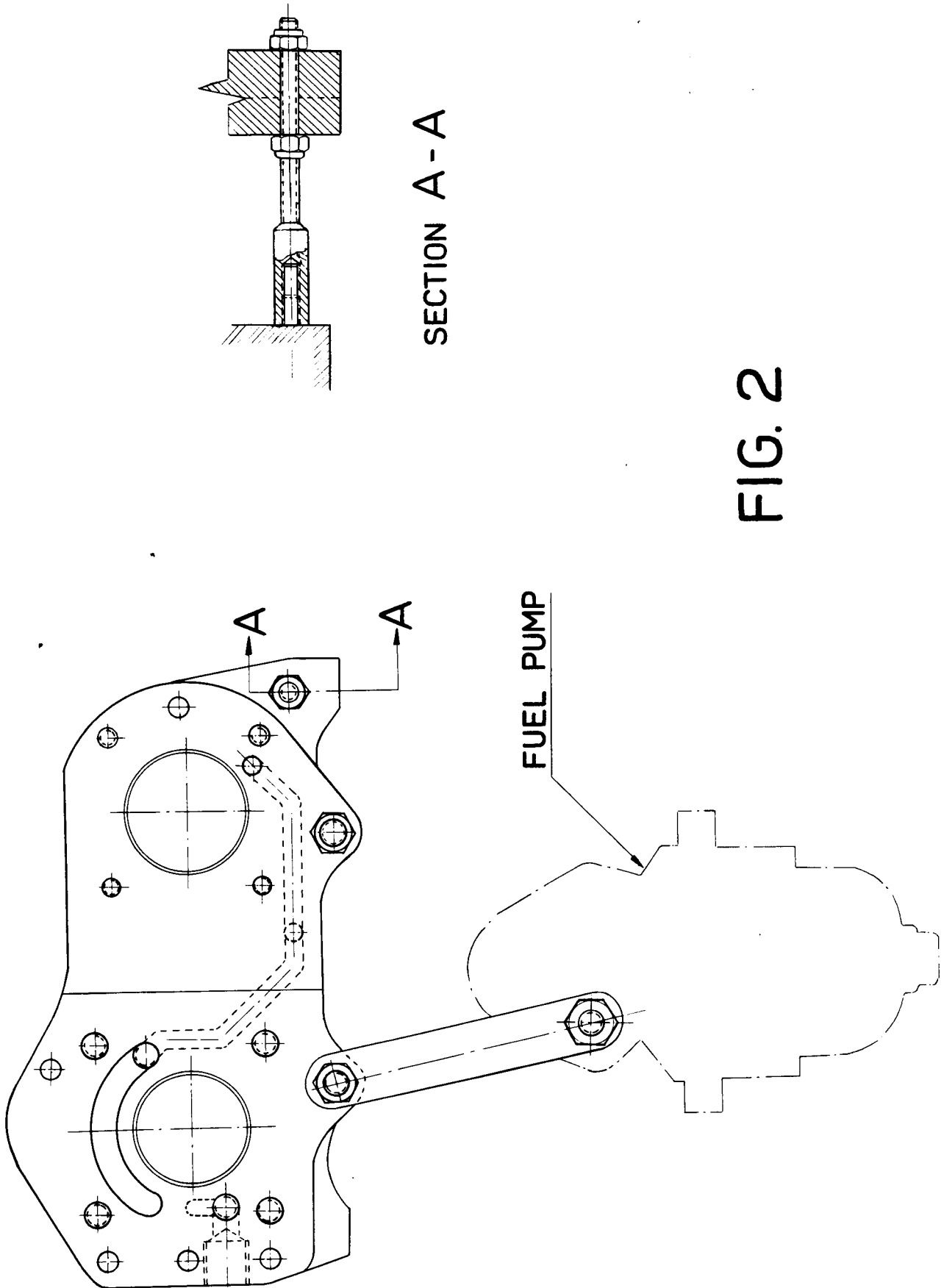
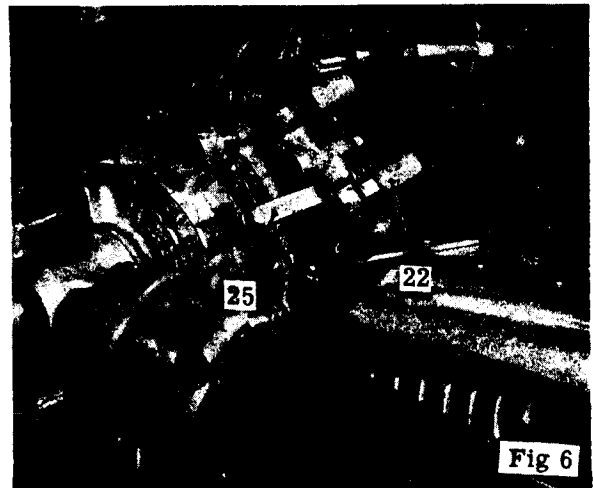
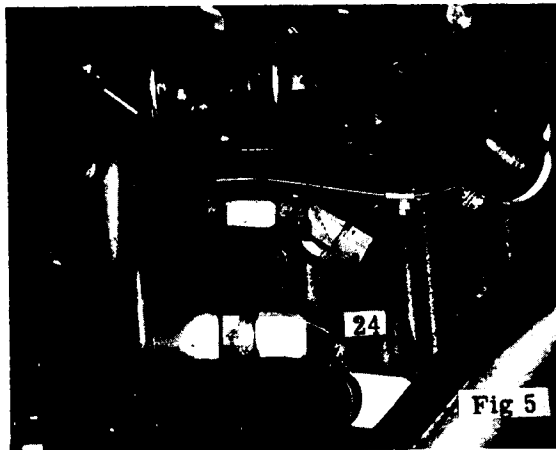
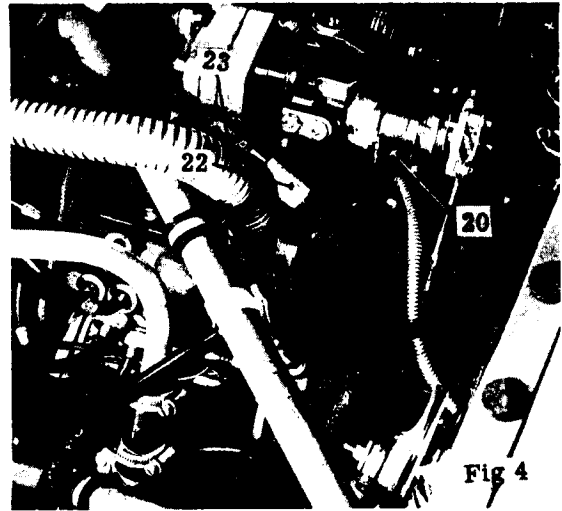
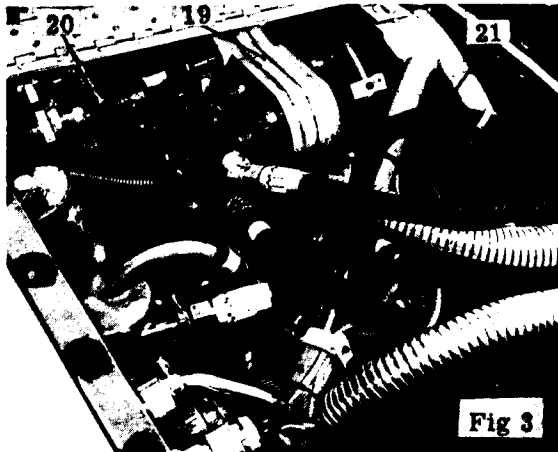


FIG. 2



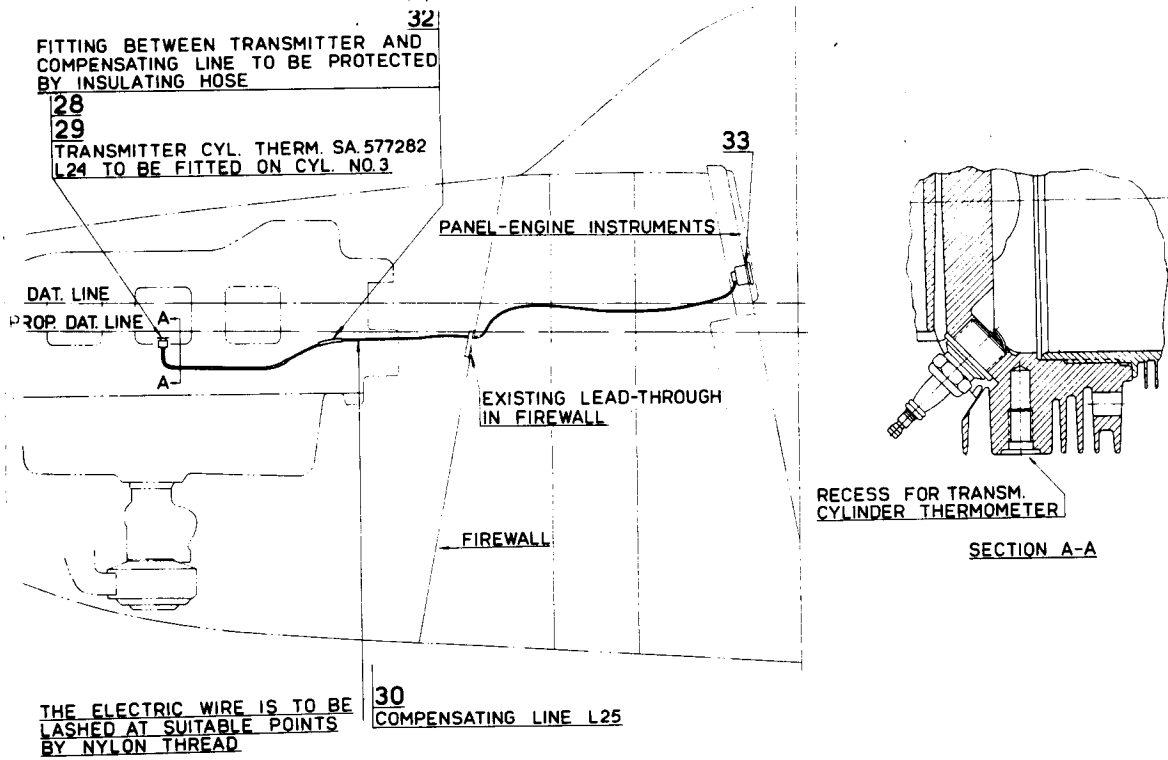


FIG 8

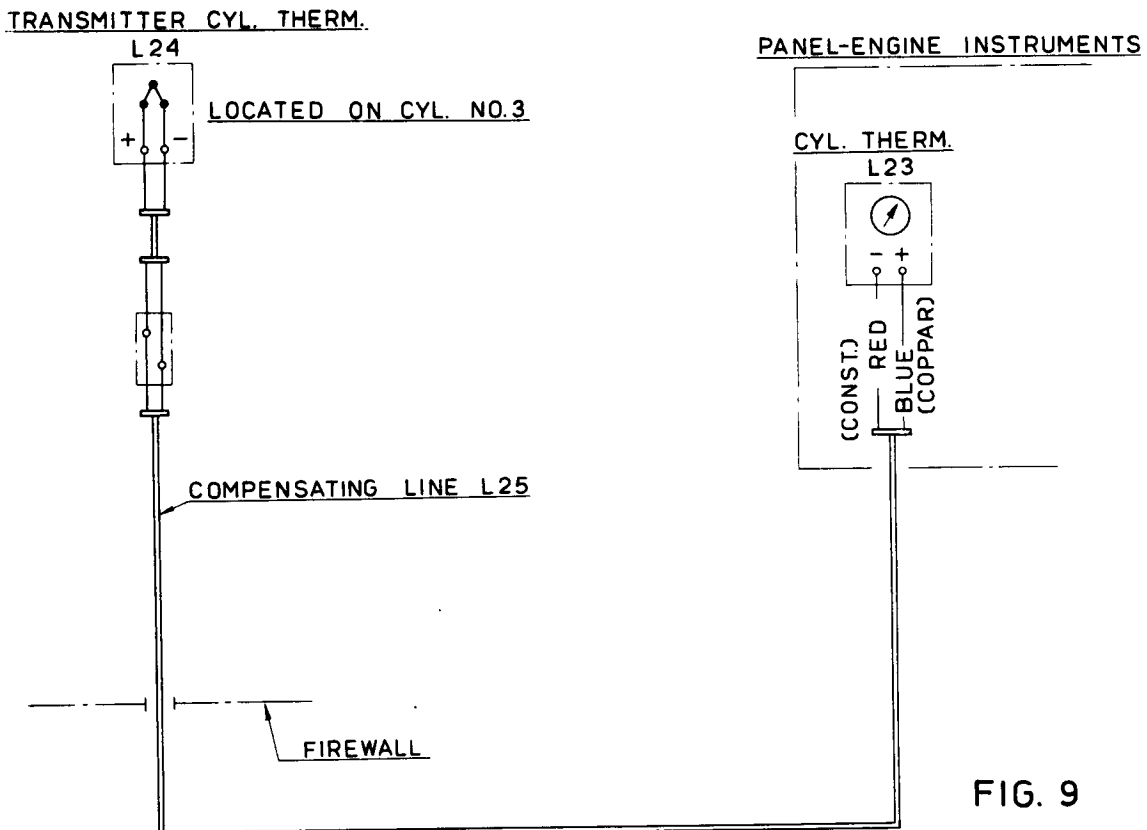


FIG. 9