CHAP. 2 AIRFRAME S.P. 150 A.L. SHEET 1 OF 7	SERVICING PROCEDURE F53 T55	BAC F53 & T55 (SA) 5A3A Section 1 2nd Edition

Services Hydraulics - Accumulator Fault Detection	AFSC 42152 43151	TIME EST
Safety and Servicing Notes are to be complied with throughout the work detailed on this card.		

ASSOCIATED PROCEDURES

SP 151 (AF)

SPECIAL TOOLS AND EQUIPMENT

Ground test rig (4F/3603).
Hydraulic fluid replenisher (4G/205107) (Post STI/GE/107).
Hydraulic fluid replenisher (26DK/95039-95191).
Pitot/static test rig Mk 5 (6C/4361161).
Turner adapter gauges (4G/6246).
Overflow drain extension (26DK/95862).
LSEPT Hydraulic oil de-aeration tank.

NOTE 1: In addition to an inspector carrying out any specific inspections detailed in this Servicing Procedure, Quality Control must monitor all operations.

NOTE 2: When using the tank the operator must maintain the fluid level between the two markers on the tank sight glass. Do not operate any of the services if the fluid level is below the lower marker as this could cause damage to the system reservoir.

NOTE 3: This Servicing Procedure is to be carried out when called up in SP 151 (AF).

NOTE 4: Before commencing this Servicing Procedure a period of 30 minutes must elapse to allow the system to settle to give the correct test conditions.

NOTE 5: If the ground test rig accidentally stops during this Servicing Procedure the operator must open the auxiliary air release and the vacuum release to prevent fluid draining from the reservoir.

NOTE 6: This Servicing Procedure is to assist the operator to detect a suspect leaking accumulator. This is indicated when it has cleared a circuit to -14 in. Hg, it continues to aerate after a short period of time. The most obvious cause of this aeration is a leaking accumulator which should be changed.

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1. OPERATION

1.1	Ground test rig.	Start.
1.2	Tank auxiliary air pressure inlet valve.	Open.

NOTE: Sub-items 1.3, 1.4 and 1.5 must be carried out in rapid succession.

1.3	Tank auxiliary air control valve.	Turn clockwise until fluid in the sight glass begins to rise (approximately 10 to 15 lbf/in^2 air pressure will cause the fluid level to rise).
1.4	Tank vacuum release valve.	Close when the fluid level is just rising to the upper mark.
1.5	Ground test rig.	When the fluid level reaches the upper mark on the sight glass engage clutch and set to run at 2500 rev/min.
1.6	Tank auxiliary air control valve.	Adjust to maintain fluid level mid-way between the upper and lower marks on the sight glass.
1.7	Tank vacuum on/off valve.	Turn on.
1.8	Tank vacuum pump.	Operate until the fluid rises.
1.9	Auxiliary air pressure control valve.	Turn counter-clockwise until the fluid reaches the mid-way position between the markers on the sight glass.
1.10	Tank auxiliary air control valve and vacuum pump.	Decrease auxiliary air pressure and increase vacuum to maintain the fluid level between the two marks until -14 in. Hg is achieved and no bubbles are apparent in the sight glass.

NOTE: If excessive frothing occurs auxiliary air pressure must be increased and the vacuum decreased to maintain the fluid level between the two marks. When excessive

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1. OPERATION (contd)

NOTE: (contd)

frothing ceases decrease auxiliary air pressure, and increase the vacuum to maintain the fluid level between the two marks, until -14 in. Hg is achieved with no bubbles apparent in the sight glass.

2. PREPARATION

2.1	External d.c. and a.c. power supply.	(i) Connect. (ii) Set to ON.

3. REAR SERVICES ACCUMULATOR OPERATION

3.1	Tank.	Raise oil level to upper mark.
3.2	Ground test rig.	Set to 2000 rev/min.
3.3	Airbrake selector.	Set to OUT and IN repeatedly. Ensure full travel of airbrakes between each selection.
3.4	Autostabilizers.	(i) Instrument master switch ON. (ii) PCU master switch ON. (iii) PCU Auto Stab ON. (iv) Select Height Mode on PCU. (v) Engage Autopilot switch on stick. (vi) Operate VCS repeatedly until rear system accumulator is fully discharged.
3.5	Tank auxiliary air.	Decrease auxiliary air pressure and increase vacuum to maintain the fluid level between the two marks until -14 in. Hg is achieved and no bubbles are apparent in sight glass.

4. FRONT SERVICES ACCUMULATOR OPERATION

4.1	Tank.	Raise fluid level.

NOTE: Sub-items 4.3 and 4.4 must be carried out in rapid succession to discharge front Servicing Accumulator.

4.2	Flap selector.	Set to DOWN and UP repeatedly ensuring full movement of flap between each selection.

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4. FRONT SERVICES ACCUMULATOR OPERATION (contd)

4.3	Canopy selector.	Set to OPEN and CLOSED repeatedly, ensuring full movement of canopy between each selection until front services accumulator is fully discharged.
4.4	Tank auxiliary air control valve and vacuum pump.	Decrease auxiliary air pressure and increase vacuum to maintain the fluid level between the two marks until -14 in. Hg is achieved and no bubbles are apparent in sight glass.

5. BRAKE SYSTEM ACCUMULATOR OPERATION

NOTE: Sub-items 5.1 to 5.5 must be carried out in rapid succession.

5.1	Ground test rig.	Disengage clutch.
5.2	Tank vacuum release valve.	Open.
5.3	Tank auxiliary air inlet valve.	Close.
5.4	Tank auxiliary air release valve.	Open.
5.5	Tank auxiliary air control valve.	Turn fully counter-clockwise.
5.6	Brake lever.	Operate to discharge wheel brake accumulator.
5.7	Tank auxiliary air release valve.	Close.
5.8	Tank auxiliary air inlet valve.	Open.

NOTE: Sub-items 5.9, 5.10 and 5.11 must be carried out in rapid succession.

5.9	Tank auxiliary air control valve.	Turn clockwise to obtain 10 to 15 lbf/in^2 to cause fluid to rise.

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5. BRAKE SYSTEM ACCUMULATOR OPERATION (contd)

5.10	Tank vacuum release valve.	Close.
5.11	Ground test rig.	Engage clutch. Set to 2500 rev/min.

NOTE: Repeat Sub-items 5.1 to 5.11 until fluid in sight glass remains clear of air bubbles at -14 in. Hg.

6. FEEL SIMULATOR ACCUMULATOR OPERATION

NOTE: Sub-items 6.1 to 6.4 must be carried out in rapid succession.

6.1	Ground test rig.	Disengage clutch.
6.2	Tank vacuum release.	Open.
6.3	Tank auxiliary air inlet valve.	Close.
6.4	Tank auxiliary air release valve.	Open.
6.5	Tank auxiliary air control valve.	Turn fully counter-clockwise.
6.6	Accumulators (services system).	Discharge hydraulically.
6.7	Aircraft hand-pump.	Operate to give 1000 lbf/in^2 on wheel brake gauge.
6.8	Feel selector.	Operate to discharge feel system accumulator.
6.9	Tank auxiliary air pressure inlet valve.	Open.

NOTE: Sub-items 6.10, 6.11 and 6.12 must be carried out in rapid succession.

6.10	Tank auxiliary air control valve.	Turn clockwise until fluid in the sight glass begins to rise (approximately 10 to 15 lbf/in^2 air pressure will cause the fluid level to rise).

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6. FEEL SIMULATOR ACCUMULATOR OPERATION (contd)

6.11 Tank vacuum release valve.	Close when the fluid level is just rising to the upper mark.
6.12 Ground test rig.	When the fluid level reaches the upper mark on the sight glass engage clutch and set to run at 2500 rev/min.
6.13 Tank auxiliary air control valve.	Adjust to maintain fluid level mid-way between the upper and lower marks on the sight glass.
6.14 Tank vacuum on/off valve.	Turn on.
6.15 Tank vacuum pump.	Operate until the fluid rises.
6.16 Auxiliary air pressure control valve.	Turn counter-clockwise until the fluid reaches the mid-way position between the markers on the sight glass.

7. COMPLETION

7.1 Tank.	Raise fluid to upper mark.

NOTE: Sub-items 7.2, 7.3, 7.4 and 7.5 must be carried out in rapid succession.

7.2 Tank auxiliary air inlet valve.	Close.
7.3 Ground test rig.	Disengage clutch.
7.4 Tank vacuum release	Open.
7.5 Tank auxiliary air release valve.	Open.
7.6 Hydraulic inlet hose to tank.	Disconnect from aircraft.

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8. COMPLETION

8.1	External d.c. power supply.	(i) Set to OFF. (ii) Disconnect.

NOTE: If any aeration is apparent in Items 3, 4, 5 and 6 then the system accumulator must be suspect and changed. Carry out SP 151 (AF) after replacement.