

CHAP 2 AIRFRAME SP 121 AL 4 SHEET 1 OF 10	SERVICING PROCEDURE F53 T55	BAC F53 & T55 (SA) 5A3A Section 1 2nd Edition	
Tailplane PFCU - Calibrated Leak Check		AFSC	TIME EST
Safety and Servicing Notes are to be complied with throughout the work detailed on this card.		43151 42152	
		43171 42172	
		43250	
SPECIAL TOOLS AND EQUIPMENT			ASSOCIATED PROCEDURES
Walkway (26DK/95055).			SP 5(P)
Tyre inflation rig (4G/1050542).			6(P)
Retraction rig (EF5-88-367).			114(AF)
Setting pin (CH/91192).			602(AF)
Auto-stabilizer setting pin (CHA/455/148).			603(AF)
Locating pin (26DK/95127).			152(AF)
Tailplane incidence gauge (26DK/95864 - left).			142(AF)
Pitot/Static test set (6C/1042139).			
<u>43151 / 42152</u>			
1. PREPARATION			
1.1 Arrestor hook safety bar (26DK/1439551). Remove from aircraft.			
1.2 Arrestor hook. Release from stowed position and lower onto two hard rubber mats prepositioned on ground (Using retraction rig (EF5-88-367)).			
1.3 Arrestor hook operating handle. Reset to unoperated position (Ball catch engaged).			
<u>43151</u>			
2. PREPARATION			
2.1 Bolster. Remove.			
2.2 Drain channels. Remove.			
2.3 Access panels 93 & 103. Remove.			
<u>43250</u>			
3. PREPARATION			
3.1 No.1 Reheat jet pipe. Remove (SP 5(P)).			
			Continued Overleaf
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CHAP	2	AIRFRAME	SERVICING PROCEDURE	BAC F53 & T55 (SA)
SP	121	AL 4	F53 T55	5A3A Section 1
SHEET	2	OF 10		2nd Edition

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

43151/42152

#### 4. PREPARATION

- |      |                                                                  |                                                                                                                                                              |
|------|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.1  | Walkway (26DK/95055).                                            | Fit.                                                                                                                                                         |
| 4.2  | Heat shields and tailplane motor protective cover.               | Remove.                                                                                                                                                      |
| 4.3  | Ground air charging/release connexion (Access panel 63P (left)). | Remove blank.                                                                                                                                                |
| 4.4  | Services system hydraulic pressure.                              | Release pressure by operating brake lever.                                                                                                                   |
| 4.5  | Hydraulic test trolleys.                                         | (i) Prime.<br>(ii) Bleed.                                                                                                                                    |
| 4.6  | No.1 Services ground test connexions (Access panel 45P (left)).  | Connect hydraulic test trolleys.                                                                                                                             |
| 4.7  | No.1 Controls ground test connexions (Access panel 45P (left)).  | Connect hydraulic test trolleys.                                                                                                                             |
| 4.8  | No.2 Controls ground test connexions (Access panel 67P (left)).  | Connect hydraulic test trolleys.                                                                                                                             |
| 4.9  | Hydraulic reservoirs.                                            | Replenish (SP 603(AF)).                                                                                                                                      |
| 4.10 | Hydraulic accumulators.                                          | Check pressures (SP 602(AF)).                                                                                                                                |
| 4.11 | Tyre inflation rig (4G/1050542).                                 | (i) Connect to ground air charging/release connexion (Access panel 63P (left)).<br>(ii) Set to deliver a pressure of between 16 and 18 lbf/in <sup>2</sup> . |
| 4.12 | External d.c. power supply.                                      | (i) Connect.<br>(ii) Switch to ON.                                                                                                                           |
| 4.13 | External a.c. power supply.                                      | (i) Connect.<br>(ii) Switch to ON.                                                                                                                           |
| 4.14 | MRG switch.                                                      | Set to OFF (See Fig.1).                                                                                                                                      |
| 4.15 | STAB switch (On controller).                                     | Set to OFF (See Fig.1).                                                                                                                                      |

Continued

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CHAP 2 AIRFRAME	SERVICING PROCEDURE	BAC F53 & T55 (SA)
SP 121 AL 4	F53 T55	5A3A Section 1
SHEET 3 OF 10		2nd Edition

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

43151/42152

4. PREPARATION (Contd)
- 4.16 Autopilot engage switch (On control column). Set to OFF (See Fig.1).
- 4.17 Instrument master switch. Set to ON (See Fig.1).
- 4.18 Autopilot master switch. Set to ON (See Fig.1).
- 4.19 Tailplane auto-stabilizer actuator.
  - (i) Set to neutral using aircraft hand pump.
  - (ii) Check neutral using setting pin (CHA/455/148).
- 4.20 Tailplane auto-stabilizer actuator. Remove setting pin.
- 4.21 Tailplane incidence gauge (26DK/95864-left). Fit.
- 4.22 Undercarriage. Ensure ground locks fitted.
- 4.23 Pitot/Static test set. Connect.
- 4.24 Services system. Pressurize to 3000 lbf/in2.
- 4.25 Pitot/static system. Pressurize to equivalent of 250 Kt.
- 4.26 No.1 Controls system. Pressurize to 3000 lbf/in2.
- 4.27 Feel selector. Ensure set to ON.
- 4.28 Tailplane trim. Trim to neutral (On incidence gauge).
- 4.29 Tailplane control system vertical torque shaft (Access panels: 26S - Right - F53 20S - Right - T55). Fit locating pin (26DK/95127).
- 4.30 Tailplane PFCU. Fit locating pin (CH/91192).
- 4.31 Tailplane. Ensure NEUTRAL.
- 4.32 Tailplane PFCU. Remove locating pin.
- 4.33 Tailplane control system vertical torque shaft. Remove locating pin.
- 4.34 Pitot/Static system. Release pressure.

Continued Overleaf

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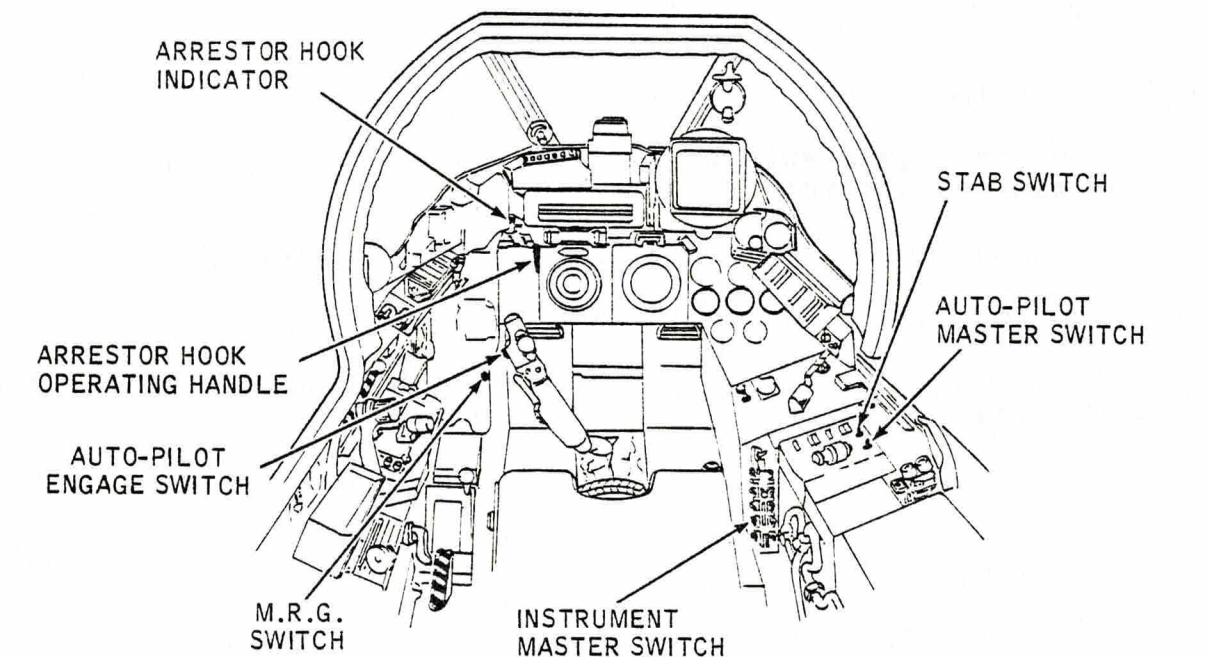


CHAP 2 AIRFRAME  
SP 121 AL 4  
SHEET 4 OF 10

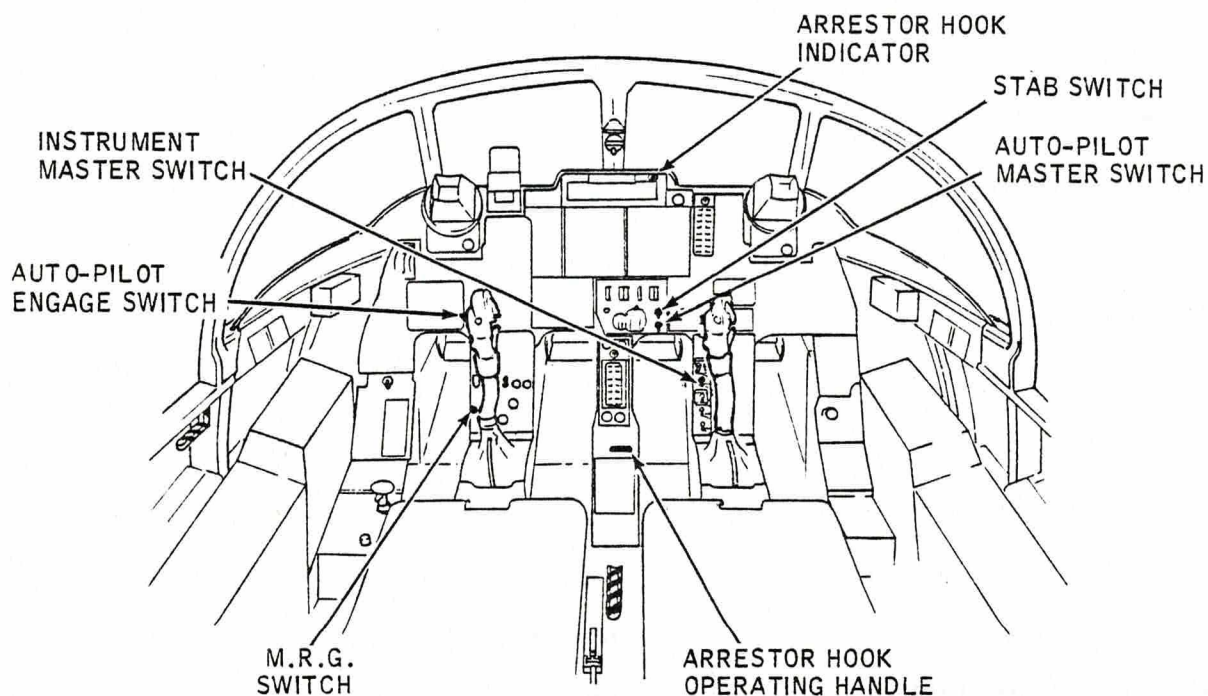
SERVICING PROCEDURE  
F53 T55

BAC F53 & T55 (SA)  
5A3A Section 1  
2nd Edition

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MK.53



MK.55

INSTRUMENT AND AUTO-PILOT SWITCHES  
FIGURE 1

Continued

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CHAP 2	AIRFRAME	SERVICING PROCEDURE	BAC F53 & T55 (SA)
SP 121	AL 4	F53 T55	5A3A Section 1
SHEET 5	OF 10		2nd Edition

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

43151/42152

#### 4. PREPARATION (Contd)

- |                                                                              |                                                                                                           |
|------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| 4.35 Autopilot master switch.                                                | Set to OFF (See Fig.1).                                                                                   |
| 4.36 Instrument master switch.                                               | Set to OFF (See Fig.1).                                                                                   |
| 4.37 External d.c. power supply.                                             | Set to OFF.                                                                                               |
| 4.38 External a.c. power supply.                                             | Set to OFF.                                                                                               |
| 4.39 Services and No.1 Controls hydraulic test trolleys.                     | Stop.                                                                                                     |
| 4.40 Rear services system accumulator.                                       | Exhaust pressure by selecting Feel ON and OFF.                                                            |
| 4.41 No.1 Controls system.                                                   | Exhaust pressure by operating tailplane control.                                                          |
| 4.42 Tailplane PFCU.                                                         | Fit locating pin (CH 91192) using No.1 Controls test trolley hand pump to neutralize tailplane.           |
| 4.43 No.1 Controls system exhaust connexion (Motor to left side diaphragm).  | (i) Disconnect.<br>(ii) Blank aircraft open end.<br>(iii) Fit slave pipe and route overboard (See Fig.2). |
| 4.44 No.2 Controls system exhaust connexion (Motor to right side diaphragm). | (i) Disconnect.<br>(ii) Blank aircraft open end.<br>(iii) Fit slave pipe and route overboard (See Fig.2). |
| 4.45 No.1 Controls drain connexion to motor.                                 | (i) Disconnect.<br>(ii) Blank aircraft open end.<br>(iii) Fit slave pipe and route overboard (See Fig.3). |
| 4.46 No.2 Controls system drain connexion to motor.                          | (i) Disconnect.<br>(ii) Blank aircraft open end.<br>(iii) Fit slave pipe and route overboard (See Fig.3). |
5. TESTING
- 5.1 No.1 Controls system. Pressurize to 3000 lbf/in<sup>2</sup>.

Continued Overleaf

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CHAP 2 AIRFRAME	SERVICING PROCEDURE	BAC F53 & T55 (SA)
SP 121 AL 4	F53 T55	5A3A Section 1
SHEET 6 OF 10		2nd Edition

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

43151/42152

## 5. TESTING (Contd)

- 5.2 No.1 Controls system exhaust slave pipe and No.1 Controls system drain slave pipe.
- (i) Position together in suitable container.
  - (ii) Measure quantity of fluid collected in 1 min.period.
  - (iii) Dispose of fluid collected.
  - (iv) Repeat items (i) and (ii).

NOTE: If quantity of fluid collected individually exceeds 600cc the motor valve leakage rate is in excess of the permissible maximum and the tailplane PFCU must be replaced.

- 5.3 No.1 Controls system test trolley.
- (i) Stop test trolley.
  - (ii) Exhaust pressure by operating rudder only.

- 5.4 No.2 Controls system. Pressurize to 3000 lbf/in2.

- 5.5 No.2 Controls system exhaust slave pipe and No.2 Controls system drain slave pipe.
- (i) Position together in suitable container.
  - (ii) Measure quantity of fluid collected in 1 min.period.
  - (iii) Dispose of fluid collected.
  - (iv) Repeat Items (i) and (ii).

NOTE: If quantity of fluid collected individually exceeds 600cc the motor valve leakage rate is in excess of the permissible maximum and the tailplane must be replaced.

- 5.6 No.2 Control system.
- (i) Stop test trolley.
  - (ii) Exhaust pressure by operating rudder only.

## 6. GENERAL

- 6.1 Nos.1 and 2 Controls systems exhaust slave pipes. Remove.

- 6.2 Nos.1 and 2 Controls systems drain slave pipes. Remove.

- 6.3 Nos 1 and 2 Controls systems drain connexions.
- (i) Remove blank.
  - (ii) Connect to motor.
  - (iii) Tighten and wirelock.

- 6.4 Nos 1 and 2 Controls systems exhaust connexions.
- (i) Remove blank from aircraft end.
  - (ii) Connect to motor
  - (iii) Tighten and wirelock.

Continued

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CHAP 2 AIRFRAME  
SP 121 AL 4  
SHEET 7 OF 10

SERVICING PROCEDURE

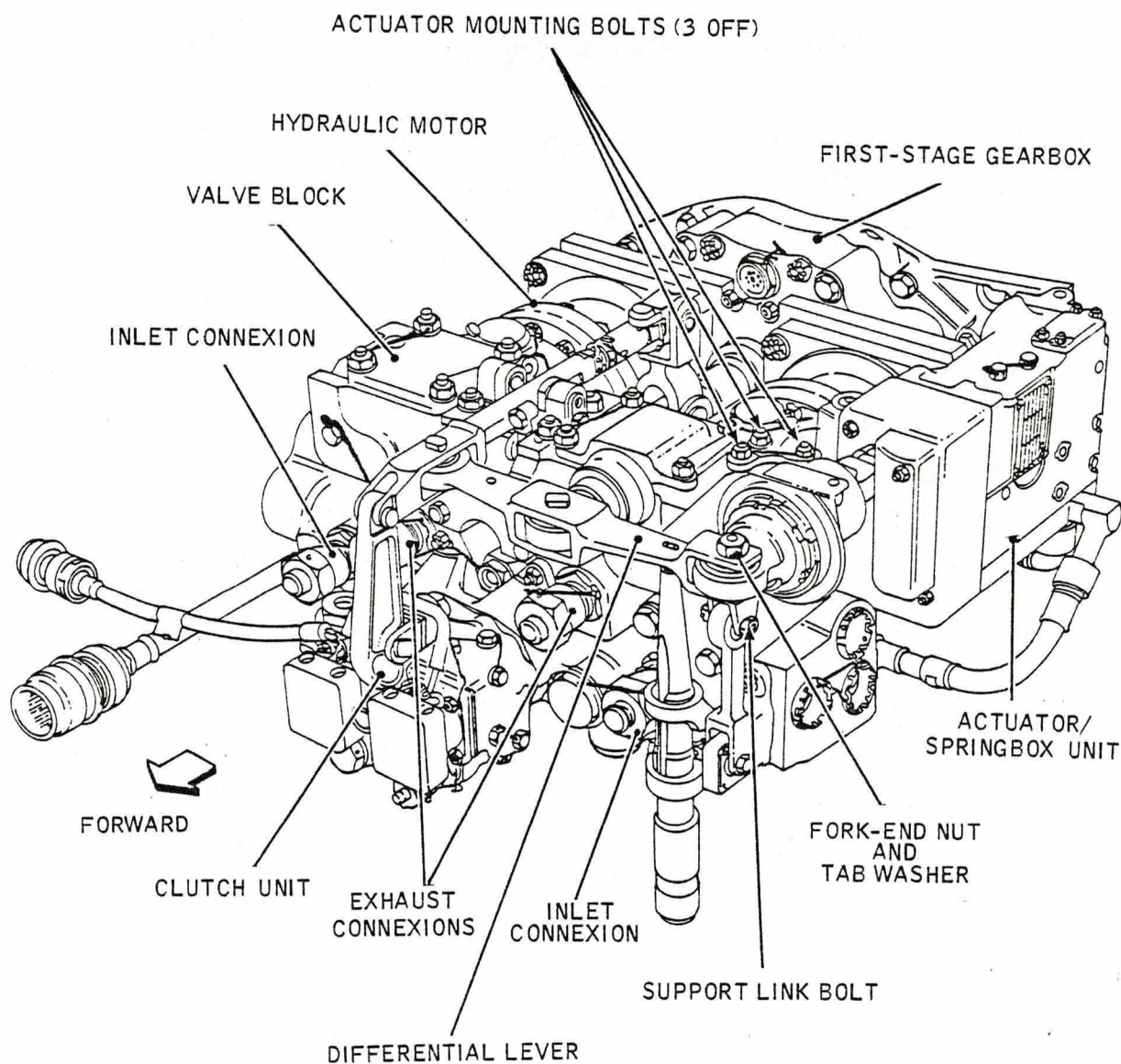
F53

T55

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TORQUE CONVERTER TYPE 455T - PROTECTION COVER REMOVED  
FIGURE 2

Continued Overleaf

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INCORPORATED AS NECESSARY IN MAINTENANCE CERTIFICATION DOCUMENTS



CHAP 2 AIRFRAME

SP 121 AL 4

SHEET 8 OF 10

SERVICING PROCEDURE

F53

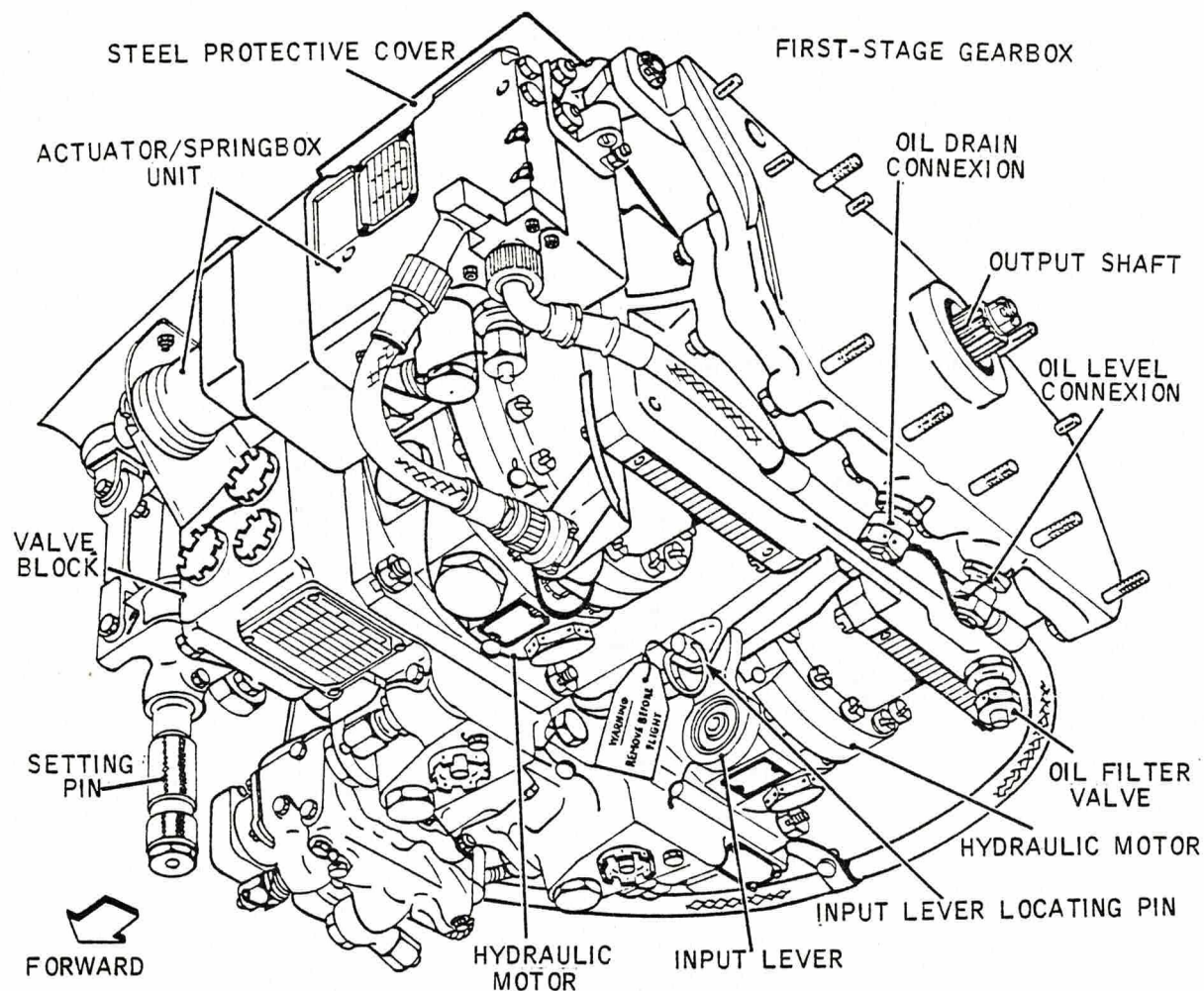
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TORQUE CONVERTER TYPE 455T - UNDERSIDE VIEW  
FIGURE 3

Continued

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CHAP 2	AIRFRAME	SERVICING PROCEDURE	BAC F53 & T55 (SA)
SP 121	AL 4	F53 T55	5A3A Section 1
SHEET 9	OF 10		2nd Edition

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

43151/42152

6. GENERAL (Contd)

- 6.5 Tailplane PFCU. Remove locating pin (CH/91192).
- 6.6 Nos. 1 and 2 Controls systems. Bleed (SP 152(AF)).
- 6.7 Tailplane flying control system. Test (SP 114(AF)).

43171/42172 (INSPECTOR)

7. INSPECTION STAGE

- 7.1 Inspect installation. Independent check of:  
(i) Assembly and locking.  
(ii) Function.

43151/42152

8. COMPLETION

- 8.1 Walkway. Remove.
- 8.2 Tailplane motor protective cover. Refit.
- 8.3 Tailplane motor heat shields. Refit.
- 8.4 Bolster. Refit.
- 8.5 Drain channels. Refit.
- 8.6 Access panels 93 and 103. Refit.
- 8.7 External d.c. power supply. Disconnect.
- 8.8 External a.c. power supply. Disconnect.
- 8.9 Pitot/Static test set. Disconnect.
- 8.10 Tyre inflation rig (4G/1050542).  
(i) Disconnect at ground air charging/release connexion.  
(ii) Fit blank and wirelock.
- 8.11 Hydraulic test trolleys.  
(i) Disconnect.  
(ii) Remove.

Continued Overleaf

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CHAP 2 AIRFRAME  
SP 121 AL 4  
SHEET 10 OF 10

SERVICING PROCEDURE  
F53 T55

BAC F53 & T55 (SA)  
5A3A Section 1  
2nd Edition

Safety and Servicing Notes are to be complied with  
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43151/42152

8. COMPLETION (Contd)

8.12 Hydraulic pump quick release connexions (i) Reconnect to aircraft.  
(Services & No.1 Controls), (ii) Wirelock.  
(Access panel 45P(left)).

8.13 Hydraulic pump quick release connexions (i) Reconnect to aircraft.  
(No.2 Controls), (ii) Wirelock.  
(Access panel 67P (left)).

8.14 Hydraulic reservoirs. Replenish (SP 603(AF)).

8.15 Access panels. Refit.

43250

9. COMPLETION

9.1 No.1 reheat jet pipe. Refit (SP 6(P)).

43151/42152

10. COMPLETION

10.1 Arrestor hook. Reset (SP 142(AF)).

NOTE: All wirelocking to be of 22 SWG stainless steel unless  
otherwise stated.



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