CHAP 2 AIRFRAME SP 113 AL 4 SHEET 1 OF 12	SERVICING PROCEDURE F53 T55	BAC F53 & T55 (SA) 5A3A Section 1 2nd Edition

Aileron Flying Controls Functional Check	AFSC	TIME EST
Safety and Servicing Notes are to be complied with throughout the work detailed on this card.	43151 43171 42152 42172	

ASSOCIATED PROCEDURES
SP 45 (AF)
46 (AF)
106 (AF)
602 (AF)
603 (AF)

SPECIAL TOOLS AND EQUIPMENT

Aileron travel gauge - left (26DK/95772).
Aileron travel gauge - right (26DK/95773).
Locating pin - Quantity 3 (26DK/95127).
Auto-stabilizer neutral setting pin (26DK/95134).
Clinometer (1A/4046).
Control column setting rig (F53) (26DK/95778).
Control column setting rig (T55) (26DK/95828).
Front fuselage lateral levelling gauge (F53) (26DK/95100).
Front fuselage lateral levelling gauge (T55) (26DK/95261).
Centre fuselage longitudinal levelling gauge (26DK/95099).
Cockpit levelling gauge spigot (F53) - left (26DK/95414).
Cockpit levelling gauge spigot (F53) - right (26DK/95415).
Spring balance (0.56lbs) (1A/1275139).
Spring balance (0.10lbs) (1A/1943999).
Tyre inflation rig (4G/1050542).

43151

1. PREPARATION

1.1	Aircraft.	(i) Raise on jacks until all wheels are clear of ground. (ii) Trestle at Frame 59.

43151/42152

2. PREPARATION

2.1	Outboard leading edge.	Remove (SP 45(AF) and SP 46 (AF)).
2.2	Ground air charging/ release connexion (Access panel 63P (left)).	Remove blank.
2.3	Services, No.1 and No.2 Controls hydraulic.	Ensure hydraulic pressure released.
2.4	Hydraulic test trolleys.	(i) Prime. (ii) Bleed.

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43151/42152

2. PREPARATION (contd)

2.5	No.1 Services ground test connexions (Access panel 45P (left)).	Connect hydraulic test trolleys.
2.6	No.1 Controls ground test connexions (Access panel 45P (left)).	Connect hydraulic test trolleys.
2.7	No.2 Controls ground test connexions (Access panel 67P (left)).	Connect hydraulic test trolleys.
2.8	Hydraulic accumulators.	Check pressure (SP 602 (AF)).
2.9	Hydraulic reservoirs.	Replenish (SP 603 (AF)).
2.10	Tyre inflation rig (4G/1050542).	(i) Connect to ground air charging/release connexion. (ii) Set rig to deliver a pressure of between 16 and 18 lbf/in2.
2.11	External d.c. power supply.	(i) Connect. (ii) Set to ON.
2.12	External a.c. power supply.	(i) Connect. (ii) Set to ON.
2.13	Trim switch.	Ensure indicating neutral on cockpit gauge.
2.14	MRG Switch.	Set to OFF (See Fig.1).
2.15	Stab switch (On controller).	Set to OFF (See Fig.1).
2.16	Autopilot engage switch (On control column).	Set to OFF (See Fig.1).
2.17	Instrument master switch.	Set to ON (See Fig.1).
2.18	Autopilot master switch (On controller).	Set to On (See Fig.1).
2.19	Aileron auto-stabilizer actuator.	(i) Set to neutral using aircraft hand pump. (ii) Check neutral using setting pin (26DK/95134).

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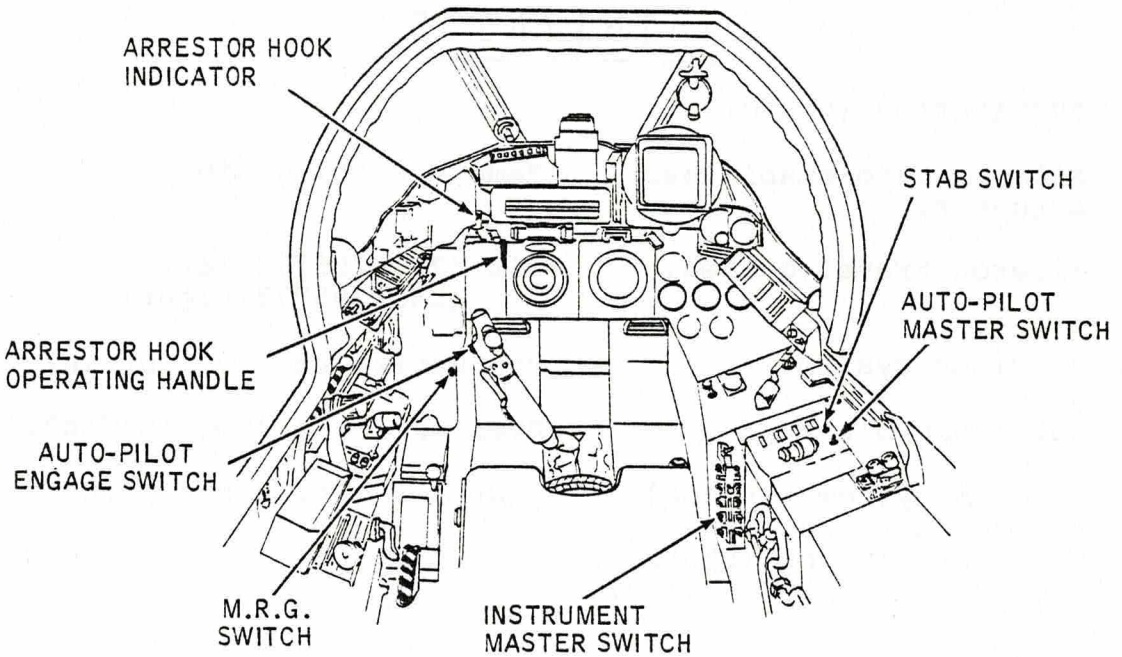
Safety and Servicing Notes are to be complied with throughout the work detailed on this card.



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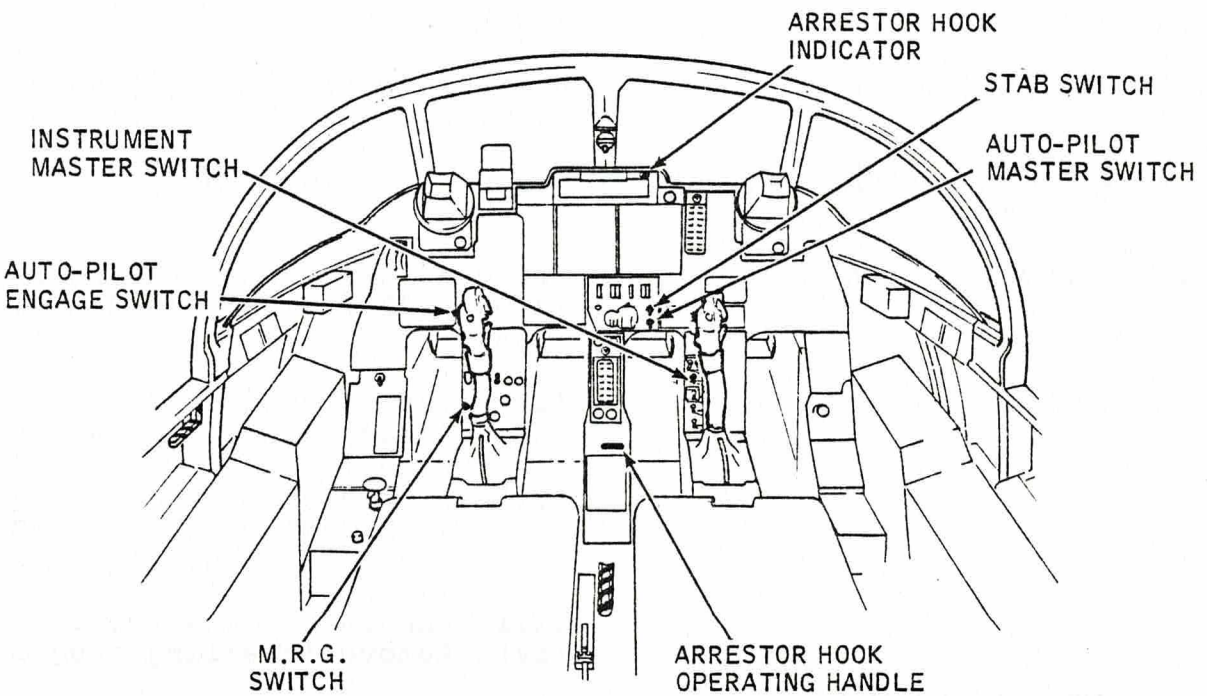

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INSTRUMENT AND AUTO-PILOT SWITCHES
FIGURE 1

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43151/42152

2. PREPARATION (Contd)

2.20	Aileron auto-stabilizer actuator.	Remove setting pin.
2.21	Aileron travel gauges.	Fit (26DK/95772-left) (26DK/95773-right).
2.22	Services system.	Pressurize to 3000 lbf/in2.
2.23	No.1 Controls system.	Pressurize to 3000 lbf/in2.
2.24	Aileron system vertical torque shaft (Access panel 26S (right)(F53), (Access panel 20S (right) (T55).	Insert locating pin (26DK/95127).
2.25	Aileron system.	Check neutral on spar 1 at cradle lever and actuator lever using locating pins (26DK/95127).
2.26	Ailerons.	Ensure neutral.
2.27	Aileron system.	Remove locating pin fitted at item 2.25.
2.28	Aileron system vertical torque shaft.	Remove locating pin.
2.29	Control column.	Fit control column setting rig (26DK/95778) (F53) and 26DK/95828) (T55).
2.30	Cockpit.	(i) Fit spigots (F53 only) (26DK/95444 - left and 26DK/95415 - right). (ii) Fit lateral levelling gauge (26DK/95100-F53 and 26DK/95261-T55) and clinometer (1A/4046). (iii) Ensure reading zero. (iv) Remove levelling gauges.
2.31	Control column.	Set to neutral using clinometer (1A/4046) on platform of control column setting rig.

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43151/42152

2. PREPARATION (Contd)

NOTE: In this Sub-item pupil's control column must be set to neutral (T55).

2.32	Services hydraulic test trolley.	Stop.
2.33	No.2 Controls system.	Pressurize to 3000 lbf/in2.

NOTE: Items 3 to 8 inclusive must be carried out on pupil's and instructor's control columns on T55 aircraft.

3. SMOOTHNESS CHECK

3.1	Control column.	Operate through full range.
3.2	Ailerons.	(i) Ensure consistent smooth movement. (ii) Ensure correct sense of movement.

4. CENTRING CHECK

4.1	Control column.	(i) Move fully to the left. (ii) Allow to return under restraint. (iii) Check final hands off position is within 2 degrees of reading obtained in sub-item 2.30 (iii). (iv) Move fully to right. (v) Repeat items (ii) and (iii).

5. FRICTION CHECK

5.1	Control column datum point (15.5 in. from column pivot).	Connect 0-10lbs spring balance (1A/1943999).
5.2	Control column.	Check force required to initiate movement to left and right does not exceed 12 oz.

Continued Overleaf

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43151/42152

6.	TRIM RANGE CHECK	
6.1	Trim switch.	Set fully to the left.
6.2	Ailerons.	Check left aileron is up 5 degrees and right aileron is down 5 degrees.
6.3	Trim indicator.	Ensure indication is correct.
6.4	Trim switch.	Set fully to the right.
6.5	Ailerons.	Check left aileron is down 5 degrees and right aileron is up 5 degrees.
6.6	Trim indicator.	Ensure indication is correct.
6.7	Trim switch.	Set to neutral.
7.	RANGE OF MOVEMENT CHECK (UNRESTRICTED - UNDERCARRIAGE DOWN)	
7.1	Control column.	Set fully to left.
7.2	Ailerons.	Check left aileron is up 19 degrees PLUS or MINUS 15 minutes and right aileron is down 19 degrees PLUS or MINUS 15 minutes.
7.3	Control column.	Set fully to right.
7.4	Ailerons.	Check left aileron is down 19 degrees PLUS or MINUS 15 minutes and right aileron is up 19 degrees PLUS or MINUS 15 minutes.
7.5	Control column.	Set to neutral position.
8.	RANGE OF MOVEMENT CHECK (RESTRICTED - UNDERCARRIAGE UP)	
8.1	Autopilot master switch.	Set to OFF (See Fig.1).
8.2	Instrument master switch.	Set to OFF (See Fig.1).
8.3	External d.c. power supply.	(i) Set to OFF. (ii) Disconnect.
8.4	External a.c. power supply.	(i) Set to OFF. (ii) Disconnect.

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43151/42152

8. RANGE OF MOVEMENT CHECK (RESTRICTED - UNDERCARRIAGE UP) (Contd)

8.5	Slave battery.	Fit.
8.6	Battery isolating switch.	Set to ON.
8.7	Services system.	Pressurize to 3000 lbf/in2.
8.8	Undercarriage.	Retract (SP 106 (AF)).

CAUTION: IN THE FOLLOWING SUB-ITEMS, FORCE MUST BE AVOIDED SINCE CONTROL RUN IS RESTRICTED AT PORT WING LEADING EDGE AND NOT BY STOPS AT CONTROL COLUMN QUADRANT.

8.9	Control column.	Set fully to left.
8.10	Ailerons.	Check left aileron is up 10 degrees PLUS OR MINUS 30 minutes and right aileron is down 10 degrees PLUS OR MINUS 30 minutes (F.53); 9 degrees PLUS OR MINUS 15 minutes (T55).
8.11	Control column.	Set fully to right.
8.12	Ailerons.	Check left aileron is down 10 degrees PLUS OR MINUS 30 minutes and right aileron is up 10 degrees PLUS OR MINUS 30 minutes (F.53); 9 degrees PLUS OR MINUS 15 minutes (T55).
8.13	Undercarriage.	Lower (SP 106 (AF)).
8.14	Control column.	(i) Move fully to left. (ii) Move fully to right. (iii) Return to neutral.
8.15	Ailerons.	Ensure movement is unrestricted and conforms to range quoted at Sub-items 7.2 to 7.4 inclusive.

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43171/42172 (INSPECTOR)

9. INDEPENDENT CHECKS

NOTE: The independent checks detailed in this item are to ensure that the undercarriage Hydel selector slide valve is correctly positioned and must be carried out personally by specialist inspectors who have not been directly concerned with the operations detailed in this servicing procedure.

9.1	Undercarriage toggle switch.	Ensure set to DOWN.
9.2	Services system.	Pressurize to 3000 lbf/in2.
9.3	Undercarriage indicator lamps (green) (F53: quantity 3, T55:quantity 6).	Ensure lit.
9.4	Undercarriage ground locks.	Fit.
9.5	Aircraft job card.	Endorse as follows: 'Certified I have personally carried out the independent checks detailed in servicing procedure BAC F53 and T55 (SA) 5A3A Section 1, SP 113 (AF).'

43151/42152

10 SPRING FEEL CHECK

10.1	Services system.	(i) Stop test trolley. (ii) Exhaust pressure.
10.2	Control column datum point (15.5 in. from column pivot).	Connect spring balance (1A/1275189).
10.3	Aileron trim.	Ensure neutral.
10.4	Control column.	Using spring balance, displace 5 degrees to left on clinometer (1A/4046).

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43151/42152

10. SPRING FEEL CHECK (Contd)

10.4	Control column.	Using spring balance, displace 5 degrees to left on clinometer (1A/4046).
10.5	Spring balance.	Ensure indicates 7 lbs, PLUS OR MINUS 1.5 lbs.
10.6	Control column.	Using spring balance, displace 15 degrees to left on clinometer (1A/4046).
10.7	Spring balance.	Ensure indicates 21 lbs, PLUS OR MINUS 2 lbs.
10.8	Control column.	(i) Permit to return to neutral. (ii) Using spring balance displace to right 5 degrees on clinometer (1A/4046).
10.9	Spring balance.	Ensure indicates 7 lbs, PLUS OR MINUS 1.5 lbs.
10.10	Control column.	Using spring balance, displace to right 15 degrees on clinometer.
10.11	Spring balance.	Ensure indicates 21 lbs, PLUS OR MINUS 2 lbs.
10.12	Control column.	(i) Permit to return to neutral. (ii) Remove clinometer.

11. AILERON PFCU's RESPONSE CHECK

11.1	No's 1 and 2 controls systems hydraulic test trolley.	(i) Stop. (ii) Exhaust pressure.
11.2	No. 1 controls system.	Pressurize to 3000 lbf/in2.

NOTE: In Sub-item 11.3 and 11.8, one stroke is defined as a movement of the control column, from neutral to one extreme position and back to neutral.

Continued Overleaf

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43151/42152

12. ACCUMULATOR CAPACITY CHECK (Contd)

12.5	No.2 Controls system hydraulic test trolley.	Stop.
12.6	Control column.	(i) Operate at rate of one stroke in 5 sec. (ii) Check that no less than 5 full strokes are available before accumulator pressure is exhausted. (iii) Set to neutral using test trolley hand pump.

43171/42172 (INSPECTOR)

13. INSPECTION STAGE

13.1	Inspect.	After component replacement or if the system has been disturbed.

43151/42152

14. COMPLETION

14.1	Battery isolating switch.	Set to OFF.
14.2	Slave battery.	Remove.
14.3	Ground equipment.	(i) Operate to lower aircraft. (ii) Remove from vicinity of aircraft.
14.4	Tyre inflation rig (4G/1050542).	(i) Disconnect at ground air charging/release connexion. (ii) Fit blank and wirelock.
14.5	Hydraulic test trolleys.	(i) Disconnect. (ii) Remove.
14.6	Hydraulic pump quick release connexions (Services and No.1 Controls), (Access panel 45P (left)).	(i) Reconnect to aircraft. (ii) Wirelock.

Continued Overleaf

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43151/42152

14.	COMPLETION (Contd)	
14.7	Hydraulic pump quick release connexions (No.2 Controls),(Access panel 67P (left)).	(i) Reconnect to aircraft. (ii) Wirelock.
14.8	Hydraulic reservoirs.	Replenish (SP 603(AF)).
14.9	Cockpit.	(i) Remove spigots (F53 ONLY) (26DK/95415-right). (ii) Remove control column setting rig (26DK/95778(F53),26DK/95828 (T55)).
14.10	Access panels.	Refit.
14.11	Outboard leading edge.	Refit (SP 45(AF) and 46(AF)).

NOTE: All wirelocking to be of 22 swg stainless steel locking wire unless otherwise stated.