

# BOMBARDIER

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## REFERENCE INSTRUCTION LETTER

<b>TO:</b> All Operators	<b>FROM:</b> Customer Support Engineering	<b>CONTROL NO:</b> RIL # BD-0023	<b>REVISION:</b> A
<b>ATTN:</b> Maintenance	<b>ORIGINATOR:</b> Patrick Bernèche	<b>PAGE:</b> 1 of 22	
<b>PHONE NO:</b> N/A	<b>PHONE NO:</b> 514-855-8647	<b>A/C MODEL:</b> Challenger 300 & 350	<b>A/C S/N:</b> 20003 & Subs
<b>FAX NO:</b> N/A	<b>FAX NO:</b> 514-855-7634	<b>ATA NO:</b> 27-11	
<b>DATE OF REQUEST:</b> 26 February 2014	<b>PUBLICATION AFFECTED:</b> N/A		
<b>TITLE:</b> Aileron Rigging Instructions (Aerodynamic) & Maintenance Check Flight.			
<b>REFERENCE:</b> /A/ FTP S100-271011 /B/ FTP CC100-271011 /C/ FTP S100-278001 /D/ FTP S100-000001 /E/ FTER BA100-800003 /F/ FTER BW100-271001			
<b>ISSUE:</b> Step by step procedure to adjust the aileron system (Aerodynamic) and instructions for maintenance check flight.			
<b>RESOLUTION:</b>			
<p><b><u>Challenger 300 &amp; 350</u></b></p> <p><b><u>Aileron Rigging Instructions (Aerodynamic)</u></b>  <b>&amp;</b>  <b><u>Maintenance check Flight.</u></b></p>			
<b>PREPARED BY:</b>		<b>APPROVAL:</b>	
<b>Print name:</b> Patrick Bernèche	<b>Print name:</b> Yann Gourgousse	<b>Issue date:</b>	
<b>Signature:</b> 	<b>Signature of</b> 	5 February 2015	
<b>Date:</b> 5 February 2015	<b>Mgr / Lead</b>		

This document can be used as Instructions for Continued Airworthiness until such time as a Temporary Revision or Manual Revision is issued by Technical Publications. The current status of open Reference Instruction Letters is published in each issue of the Customer Forum and Newsletter, and on the CIC web Site (<http://www.cic.bombardier.com/>).

## **RESOLUTION cont'd:**

**Reason for the Job:** - There are many situations where this procedure could be required. The list below provides some examples:

- If flight report show an unusual control wheel position.
- If aileron control surfaces have been removed and the previous adjustment have not been recorded. (As a first step, Contact Montreal CRC for assistance at 1-866-538-1247. They may be able to provide you with the Factory ailerons adjustment)
- If flight reports show unusual roll condition and all other possible causes have been considered and can be ignored.
- If the Amber EICAS message "AP Holding LWD or AP Holding RWD" is repetitively posted each flight. (Make sure Aircraft is post SB100-22-02)
- When a major repair was made to a wing or to a flight control and a roll tendency check is required. (Note: For this particular case, do only step 5 "Pre-flight procedures", step 6 "In flight check" and step 7 (a) & (f) "Post flight procedures" of this document.)

**Strongly recommended:** - Optional SB 100-22-02 (Modification-Automatic Flight Control System (AFCS) - Upgrade of the Flight Guidance Computer (FGC) to prevent nuisance message)

**Down time:** - A two day downtime and two to three verification flights are usually required to complete this adjustment process.

## **Ground Support equipment (GSE):**

- GSE 27C-11-06, Aileron Neutral Clamp  
NOTE: If not available, a "C" clamp & a straight edge can be used.
- GSE 27C-11-03, Control Column Test Fixture  
NOTE: If not available, it is permissible to install the inclinometer with double sided-tape.
- GSE 20-00-04, Inclinometer

**Aileron system overview:** - The aileron control system is a manual system, meaning that the pilots feel the actual surface air load. Each aileron surface has a balance gear-tab and a bent tab. The bent tab is permanently set in its position on the aileron trailing edge to keep the surface up float at high speeds to a minimum. The function of the gear-tab is to reduce the load at the control wheel. This balance gear-tab moves in the opposite sense of rotation of the aileron. The aileron trim actuator and the trim tab are only installed on the L/H aileron. The function of the aileron trim is to decrease the aerodynamic load on the control wheel during flight in order to minimize Pilot's effort. When the Flight crew operate the aileron trim switch, an electro-mechanical actuator move the small trim tab located on the inboard trailing edge of the left aileron.

**Procedure:**

**1. Aileron System Check.**

- (a) Validate the Trim Tab per AMM TASK 27-12-09-220-801. Compare the reading of the TRIM tab with the EICAS indication on the MFD. Note and report any significant differences.
- (b) Verify the Trim Tab Linkage Backlash per AMM TASK 27-12-09-720-801. Note and report any significant discrepancies.
- (c) Verify the Aileron Balance Geared-tab Linkage Backlash per AMM TASK 27-11-21-720-801. Note and report any significant discrepancies.
- (d) Do the functional test of the aileron system cable tension and autopilot cable tension per AMM TASK 27-11-00-720-801 and Task 27-11-00-720-805.
- (e) If required, do the rigging of the aileron cable per AMM TASK 27-11-00-820-801.

**2. Flap system check.**

- (a) Measure and note the left and right flap positions as per AMM TASK 27-52-21-220-801 (Rigging check of the flap control surface) and ensure the results are inside the tolerances.

	L/H FLAP	R/H FLAP	
Between the top surface of the flap and the top surface of the No. 1 upper trailing-edge panel			MAX 0.100 in.
Between the top surface of the flap and the top surface of the No. 6 upper trailing-edge panel			MAX 0.100 in.
Between the top surface of the flap and the lower surface of the No. 1 upper trailing-edge panel			MIN 0.002 in.
Between the top surface of the flap and the lower surface of the No. 6 upper trailing-edge panel			MIN 0.002 in.

	L/H FLAP	R/H FLAP	
Between the top surface of the flap trailing-edge and the top surface of the inboard fixed trailing-edge			MAX 0.120 in.
Between the bottom surface of the flap trailing-edge and the bottom surface of the inboard fixed trailing-edge			MAX 0.120 in.
Between the top surface of the flap trailing-edge and the top surface of the outboard fixed trailing-edge			MAX 0.120 in.
Between the bottom surface of the flap trailing-edge and the bottom surface of the outboard fixed trailing-edge			MAX 0.120 in.
Between the aft edge of the flap and the aft edge of the inboard fixed trailing-edge			MAX 0.120 in.
Between the aft edge of the flap and the aft edge of the outboard fixed trailing-edge			1.380 in to 1.620 in
Between the bottom surface of the flap and the bottom surface of the wedge type seal			MAX 0.060 in.

**Note:** This table is provided for Data recording only. Follow the AMM task 27-52-21-220-801 for instructions and tolerances.

### 3. Spoiler System Check.

- (a) Inspect ALL Spoiler Control Surfaces for missing stop pad. Ref: AMM Task 27-62-05-820-801 and Task 27-63-09-820-801.
- (b) Do the Rigging check of the Ground-Spoiler Control Surface. Ref: AMM task 27-63-09-220-801
- (c) Do the Rigging check of the Multi-Function Spoiler Control-Surface. Ref: AMM task 27-62-05-220-801

### 4. Aileron Aerodynamic Neutral adjustment.

- (a) Remove the aileron geared-tab fairings 551 DB and 651 DB.  
(AMM Ref task 57-60-01-000-801)
- (b) Remove the aileron control access panels 531 SB and 631 SB.  
(AMM Ref task 57-20-01-000-801)

(c) Do the **Aileron Droop neutral adjustment** as follows;

(1) Make sure the following conditions are met;

1. Rig pins P4 installed (Figure 1)
2. Install inclinometers on aileron per (Figure 2)
3. Rod R2 are disconnected from the ailerons (Figure 1)

(2) Clamp the L/H aileron to the wing tip T/E (Trailing Edge) with the GSE 27C-11-06.

**NOTE:** Secure the aileron with just enough pressure to hold it in place.

(3) Reset the inclinometer by pushing "ALT REF". Inclinometers show  $0^\circ \pm 0.05^\circ$

(4) Hold the aileron at a neutral position and remove the GSE 27C-11-06.

(5) Install and adjust rod R2 to obtain  $0.5^\circ \pm 0.25^\circ$  aileron T/E down, then torque the jam nut per AMM 20-21-00-910-801. Inclinometer show  $0.5^\circ \pm 0.25^\circ$  aileron T/E down.

(6) Safety the Rod R2 jam nut per AMM 20-50-00-400-801.

(7) Install & torque the bolts, bushing, washer and nut on rod R2 connection to the aileron. (AMM 20-21-00-910-801)

(8) Safety the bolts on Rod R2 per AMM 20-50-00-400-802.

(9) Record actual Droop neutral values:  
(i.e:  $0.58^\circ$  Trailing edge down)

L/H \_\_\_\_\_ R/H \_\_\_\_\_

(10) Remove rig pin P4.

(11) Repeat step 1 to 10 for the R/H aileron.

(d) Do the Aileron **Gear Tab neutral adjustment** as follow;

(1) Clamp the L/H aileron to the wing tip T/E with the GSE 27C-11-06.

**NOTE:** Secure the aileron with just enough pressure to hold it in place.

(2) Loosen the mounting bolts on the horn assembly (Figure 4) and position the serrated plate to position the Gear Tab. Make sure the Gear Tab is within  $\pm 0.030$ " of the aileron T/E (Figure 3).

(3) Torque the bolts on the adjustable horn assembly to 12-15 inch pound per AMM 20-21-00-910-801.

(4) Safety wire per AMM 20-50-00-400-801.

- (5) Mark a neutral reference line (Ref Figure 9)
- (6) Record actual Gear Tab neutral values (N):  
(i.e: 0.025" Trailing edge up)

L/H \_\_\_\_\_ R/H \_\_\_\_\_

- (7) Remove the GSE 27C-11-06.
- (8) Repeat step 1 to 7 for the R/H aileron.

(e) Do the **Aileron travel check** as follow;

- (1) Install inclinometer on L/H aileron per Figure 2.
- (2) Install inclinometer on the L/H gear tab approximately in middle of gear tab and perpendicular to gear tab hinge line.
- (3) Push and hold the L/H aileron to the TED position to contact primary stop.

**NOTE:** Additional load is required on the aileron to contact the primary stops.  
Apply just enough pressure to touch the stop surface.

- (4) Select "ALT REF" on both inclinometers. Clinometers read  $0 \pm 0.05^\circ$ .
- (5) Manually move the aileron to the full TEU to primary stops.

**NOTE:** Additional load is required on the aileron to contact the primary stops.  
Apply just enough pressure to touch the stop surface.

**NOTE:** Primary stop adjustment should not be re-adjusted because the aileron will keep the same travel up & down around the new aerodynamic neutral (Ref fig 6).

- (6) Aileron total travel shows  $36^\circ \pm 0.50^\circ$
- (7) The sum of both inclinometers (aileron + gear tab) should be within  $40^\circ \pm 2^\circ$
- (8) Remove both inclinometers
- (9) Repeat steps (e) (1) to (8) for the R/H aileron.
- (10) Install the aileron-control access panels 531 SB and 631 SB. Refer to AMM Task 57-20-01-400-801.
- (11) Install the aileron geared-tab fairing 551 DB and 651 DB. Refer to AMM Task 57-60-01-400-801.

\*\*\*\*\* Pre-flight procedures \*\*\*\*\*

**5. Pre-flight procedures (Pilot hand wheel marking)**

- (a) Remove the cover plate from the back of the Pilot control wheel. (See figure 5)
- (b) Install rig pin P1 in the Pilot's control wheel then re-install the cover plate. Do not install the screw located on top of the cover plate. (See figure 5)
- (c) With the cover plate installed, position the Pilot control wheel marker sticker on top and center of the Pilots control wheel and cover plate.

**NOTE:** If the sticker is not available, the use of regular masking tape is acceptable.

- (d) Mark the neutral location of the control wheels by drawing a line from the control wheel to the control wheel cover plate. (Figure 5)
- (e) Install the inclinometer on the Pilot control wheel with GSE 27C-11-03.
- (f) Set the inclinometer to zero.
- (g) Slice the decal between the control wheel and the cover plate along the joint where hand wheel rotates. Two decals should now be evident.
- (h) Remove cover plate, remove rig pin P1 from pilot's hand wheel, install cover plate and install screw located on top of cover plate.
- (i) Use inclinometer and set the control wheel to 2° CW, draw a line from control wheel to control wheel cover plate.
- (j) Use inclinometer and set the control wheel to 2° CCW, draw a line from control wheel to control wheel cover plate.

**NOTE:**

- The tape must remain installed until the aircraft has flown and the pilots are satisfied with the aircraft control characteristics.
  - The 2° marks represent the maximum value of control wheel rotation at 15000 ft, 200kts.
- (k) Remove the inclinometer and the GSE 27C-11-03.

\*\*\*\*\* (In-flight check) \*\*\*\*\*

6. Aileron Trim and Control Wheel Check. **(In flight)**

**NOTE:** The first flight is to establish the amount of aileron geared tab adjustment required and verify the aileron position for wings level flight. If any aileron adjustments are necessary, the second flight will verify that the aircraft roll properties have been brought within specifications. A ground “post flight” adjustment will be performed to mechanically rig the aileron geared tabs and/or aileron droop based on the flight results recorded at 15000 Ft, 200 Kias.

- (a) On the Cursor Control Panel (CCP), push A/ICE, ECS and HYD buttons simultaneously to display the STALL TEST PAGE on the PILOT’S MFD. (refer to Figure 7)

**NOTE:** The aileron and the rudder indications in degrees should appear next to the aileron trim tab and rudder synoptic only when the STALL TEST PAGE is displayed on the lower portion of the PILOT’S MFD.

- (b) In flight: **Pre-conditions:**

- Stabilize the aircraft at level flight 15000ft, 200KIAS +/- 1 Kt.
- The landing gear and flaps are retracted.
- Select Autopilot OFF
- Select Yaw Damper OFF
- Select the engine AUTO SYNC switch to N1, and verify the power is matched.
- Check wing fuel is balanced.
- Center the L/R EFIS inclinometers using the Rudder Trim.
- Verify that both slip/skid indicators match

- (c) In flight: **Requirements:** At 15000ft, 200 KIAS, trim the aircraft to maintain wings level flight using the Aileron trim. Allow the aircraft to stabilize.

- (d) Follow instruction from the **Record Sheet** (figure 8) and fill all columns. Make sure the following information’s are clearly recorded. Pay special attention, + or – value is very important:

- The aileron trim tab position (see figure 7),
- The rudder trim position (in degrees from the MFD)
- The aileron position from the STALL TEST PAGE.

**NOTE:** ALL measurements must be taken at 15000ft, 200KIAS. To ease the data recording in-flight, we strongly recommend using a digital camera to take clear pictures of the EICAS, STALL TEST PAGE and control wheel position and then fill the Record Sheet (Figure 8).

- (e) **Pilot hand wheel angle**, with a fine marker pen, Pilot must draw a straight line on the control wheel marker stickers when the aircraft is flying straight and level (15000ft, 200KIAS). Hand wheel angle values will be recorded on ground.

## 7. Post flight procedures

- (a) After landing, install the GSE 27C-11-03 and the inclinometers on the Pilot control wheel and take the measurement in degrees of the control wheel line that was marked by the Pilot in flight. It is important to note if the control wheel degree angle is turning clockwise (CW) or counterclockwise (CCW). Add values in the Record sheet (Fig 8). Remove the inclinometers and the GSE 27C-11-03.
  
- (b) Do the **Gear Tab adjustment** as follows (Refer to Fig 9);
  - (1) From the Record sheet (figure 8), uses the value of the **Aileron Trim Tab Position** recorded at 15000 feet, 200 KIAS and applies the results on Table 1 to determine if an adjustment is required on the LH and RH aileron Gear Tabs.
  - (2) If no Gear Tab adjustment is required, go to step 7. (c).
  - (3) If Gear Tab adjustment is required, follow the steps below;
    - a. Loosen the mounting bolts on the L/H and /or the R/H Gear Tab horn assembly and position the serrated plate at the new position per table 1.

NOTE: One serration forward equals approximately 0.040 inches tab up. (See Figure 9)

- b. Torque the bolts on the horn assembly to 12-15 inch pound per AMM 20-21-00-910-801.
- c. Safety the bolts per AMM 20-50-00-400-801.
- d. Record the Gear Tabs new values and the direction (i.e TEU or TED):

L/H \_\_\_\_\_ R/H \_\_\_\_\_

- (c) Do the **Droop adjustment** as follow;

- (1) From the flight record sheet, use the reading of the **Control Wheel Position** recorded at 15000 feet, 200 KIAS and applies the results on table 2 to find the adjustment required on the LH and RH aileron Droop.

(2) If no Droop adjustment is required, go to step 7 (d).

(3) If Droop adjustment is required, follow the steps below.

- a. Remove the aileron Geared-Tab fairings 551 DB and 651 DB. Refer to AMM task 57-60-01-000-801.
- b. Remove the aileron control access panels 531 SB and 631 SD. Refer to AMM task 57-20-01-000-801.
- c. Make sure the following conditions are met;
  - Rig pins P4 installed (Fig 1)
  - Install inclinometer on the L/H aileron (Fig 2)
  - Rod R2 is disconnected from the ailerons (Fig 1)
- d. Clamp the L/H aileron to the wing tip T/E with the GSE 27C-11-06.

**NOTE:** Secure the aileron with just enough pressure to hold it in place.

- e. Reset the inclinometers by pushing "ALT REF". Inclinometers show  $0^\circ \pm 0.05^\circ$ .
- f. Hold the aileron at neutral position and remove the GSE 27C-11-06. Install and adjust rod R2 to obtain the required amount of correction. Inclinometers show required amount of correction per table 2.

**NOTE:** - Any adjustment required per table 2 is in addition to the existing droop.  
- There is a  $\pm 0.25^\circ$  tolerance on the allowable change in droop position.

- g. Torque the jam nut per AMM 20-21-00-910-801.
- h. Safety the rod R2 jam nut per AMM 20-50-00-400-801.
- i. Install the bolts, bushing, washer and nut on rod R2 connection to the aileron. (Torque per AMM 20-21-00-910-801).
- j. Safety the bolts on rod R2 per AMM 20-50-00-400-802.
- k. Record the Droop new values and the direction (i.e TEU or TED):  
  
L/H \_\_\_\_\_ R/H \_\_\_\_\_
- l. Remove the rig pins P4.
- m. Push and hold the L/H aileron to the TED position to contact primary stop.

**NOTE:** Additional load is required on the aileron to contact the primary stops. Apply just enough pressure to touch the stop surface.

n. Reset the inclinometers by pushing "ALT REF". Inclinometers show  $0^\circ \pm 0.05^\circ$ .

o. Manually move the aileron to the full TEU to primary stops.

**NOTE:** Additional load is required on the aileron to contact the primary stops. Apply just enough pressure to touch the stop surface.

**NOTE:** Primary stop adjustment should not be re-adjusted because the aileron will keep the same travel up & down around the new aerodynamic neutral (Ref fig 6).

p. Aileron total travel shows  $36^\circ \pm 0.50^\circ$  (see Figure 6).

q. Repeat steps 7. (c) (3) for the R/H aileron.

r. Remove inclinometers.

s. Install the aileron-control access panels 531 SB and 631 SB. Refer to AMM task 57-20-01-400-801.

t. Install the aileron geared-tab fairings 551 DB and 651 DB. Refer to AMM task 57-60-01-400-801.

(d) If Droop or Gear Tab **has been** adjusted, the aircraft needs to be test flown. Repeat step 5. through step 7. until no adjustments are required.

(e) If the Droop or Gear Tab **has not been** adjusted, go to step 7 (f).

(f) - If all of the following requirements are met, aircraft can be returned to service. Record the final Droop and Gear Tab position in the logbook for future reference.

- If all of the following requirements are **not** met and aileron adjustments are at the maximum allowable values, adjustment of the flap control surfaces could be required. If possible, adjust the flap control surfaces by small increments in the way the aircraft needs. All adjustments must stay within AMM tolerances. Then, return at step 2 of this document and follow instructions.

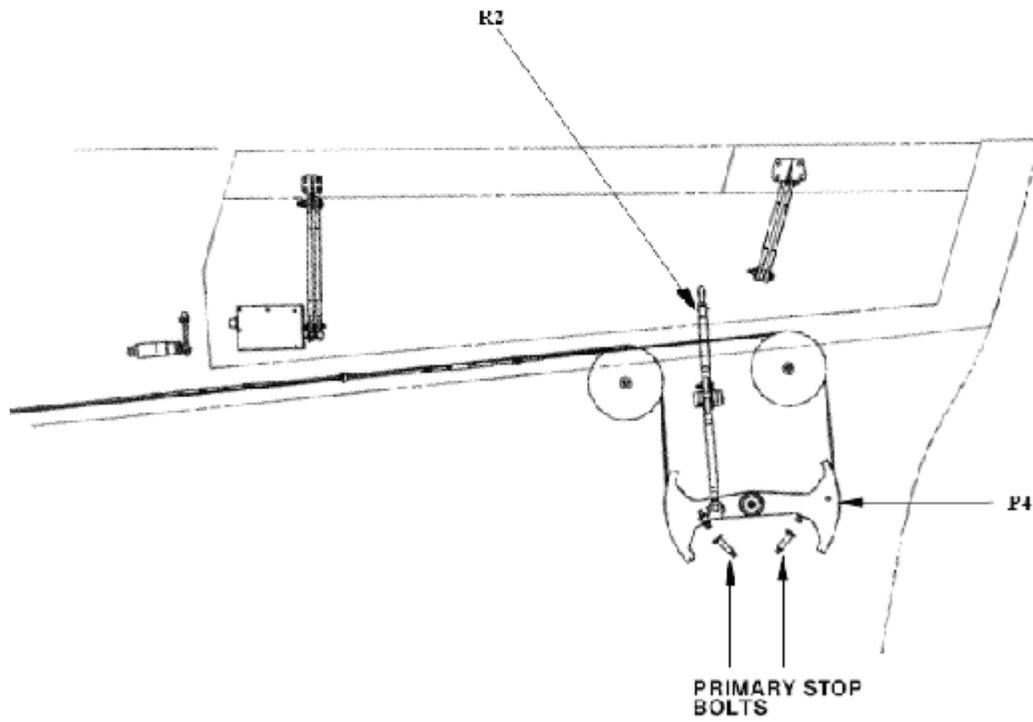
## **Requirements:**

- At 15000 feet, 200 KIAS, aileron trim values do not exceed  $\pm 0.6^\circ$ .
- At 15000 feet, 200 KIAS, control wheels are within  $2^\circ$  of level.

**Note:** After aileron trim is set to the 15000 feet, 200 KIAS value maintaining wings level flight, providing that no A/P Holding LWD or RWD messages are shown during high altitude cruise, the aircraft is acceptable in this aileron state.

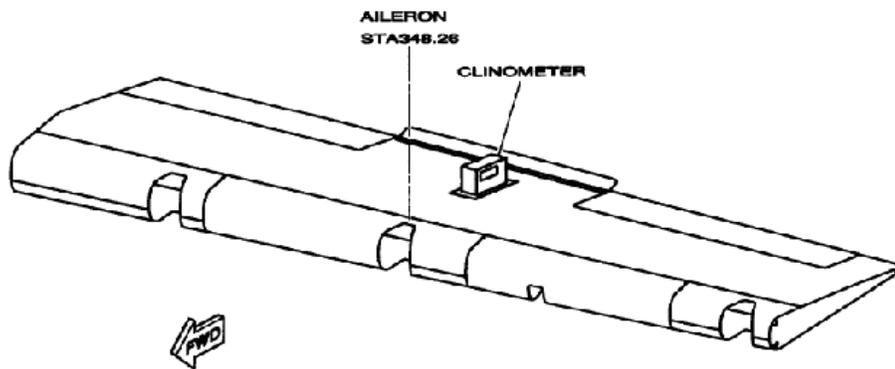
Figure 1

ROD R2, RIG PIN P4 & PRIMARY STOP LOCATION



## Figure 2

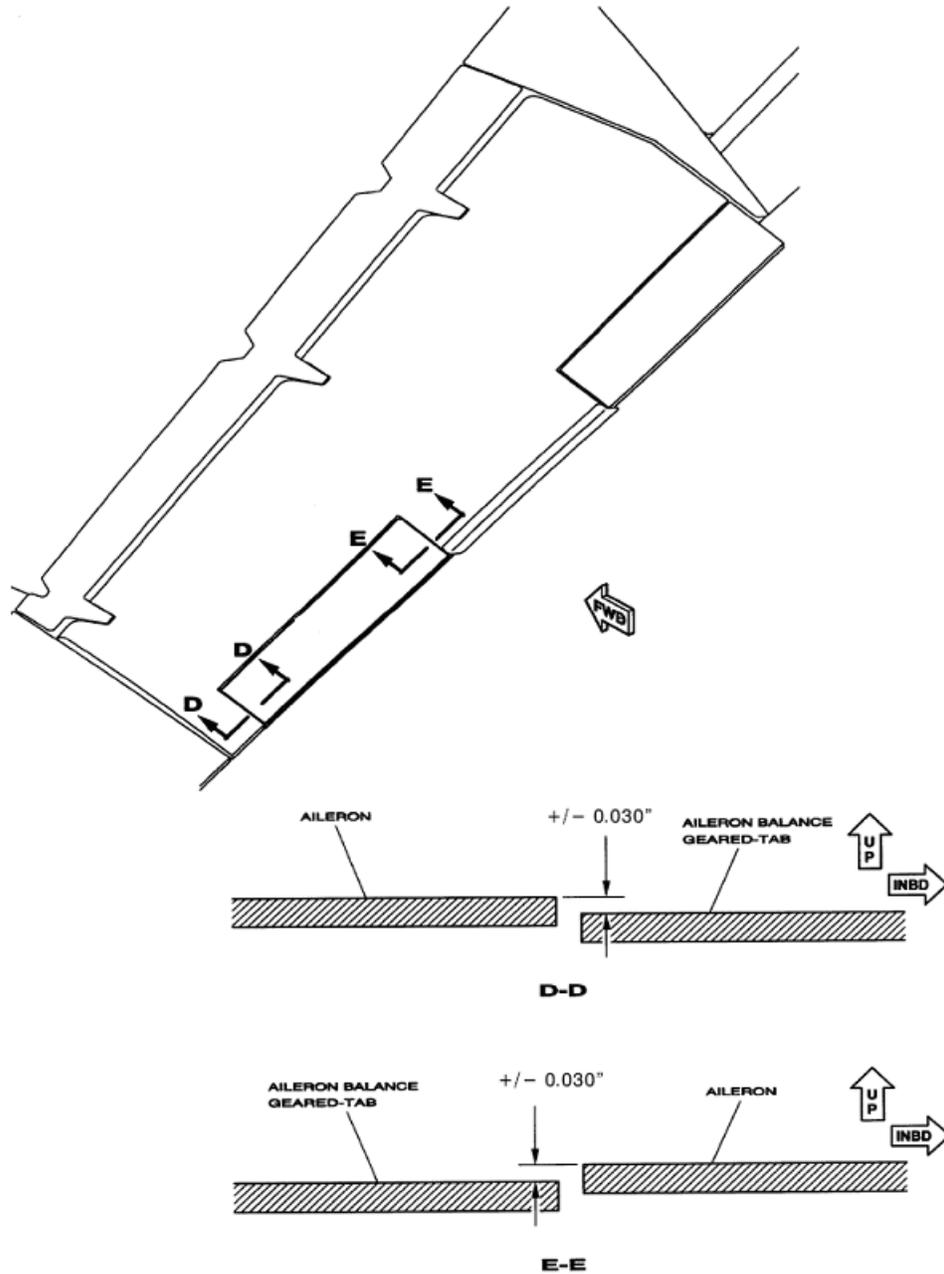
### CLINOMETER INSTALLATION



**Note:** Install clinometers on aileron approximately in the middle of the aileron and perpendicular to the aileron hinge line at 0.5 inch from trailing edge.

Figure 3

AILERON GEAR TAB ADJUSTEMENT



Note: It is permissible to have  $\pm 0.030"$  step on one side of the Geared Tab when the other side is flush with the aileron.

**Figure 4**

**GEAR BALANCED TAB**

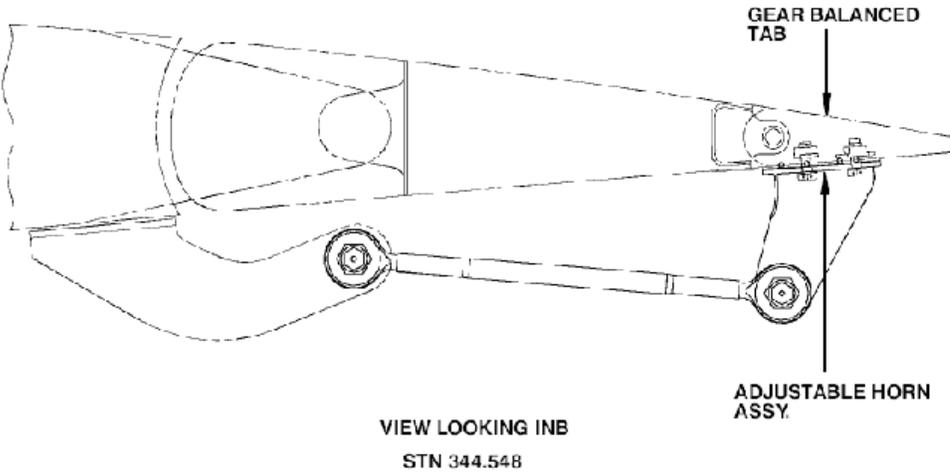


Figure 5

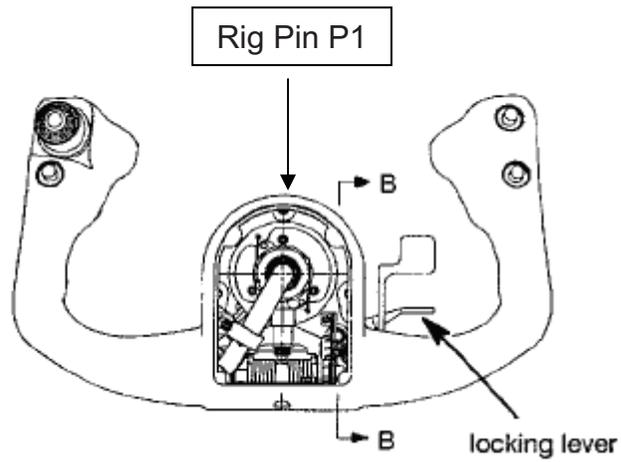
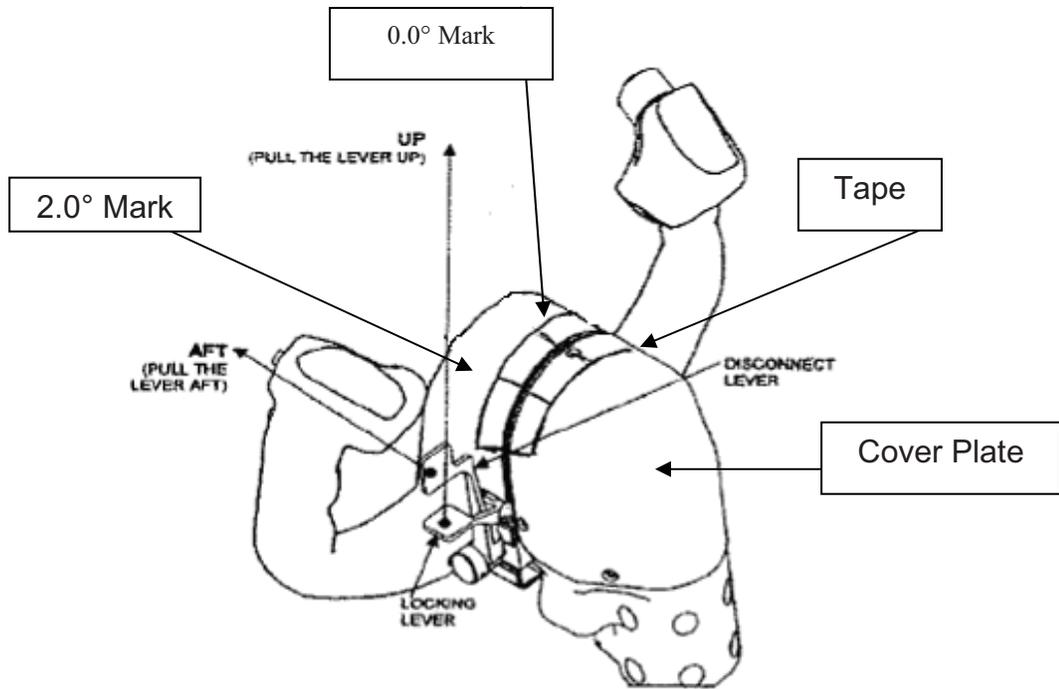


Figure 6

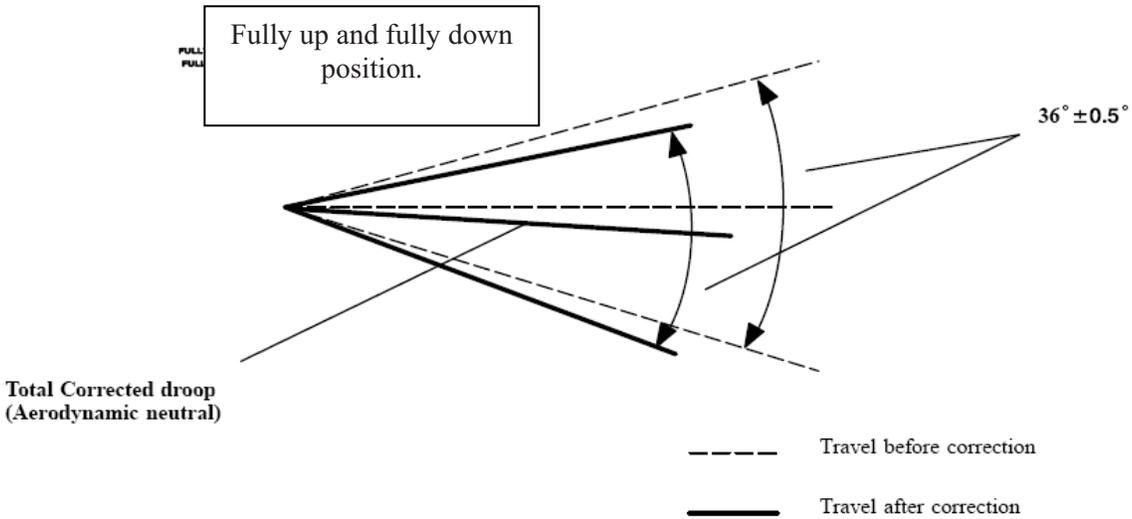
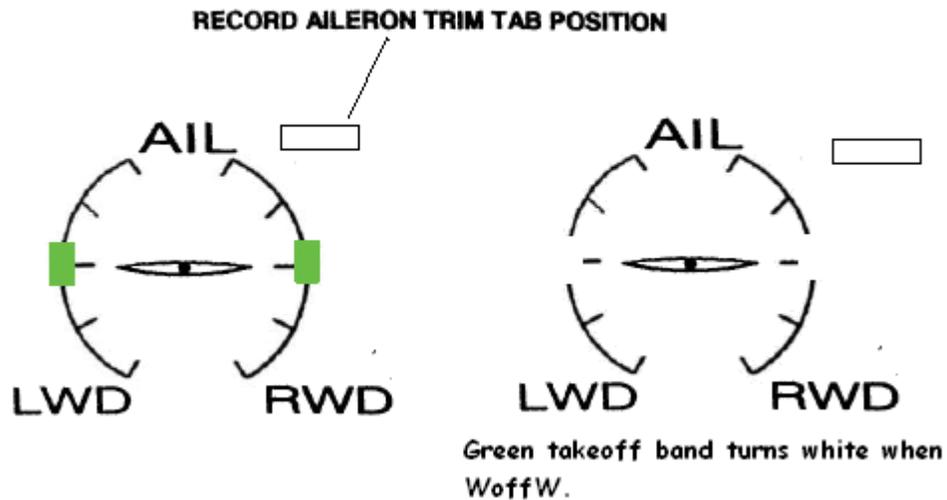


Figure 7



On the Cursor Control Panel (CCP), push A/ICE, ECS and HYD buttons simultaneously to display the STALL TEST PAGE on the PILOT'S MFD.

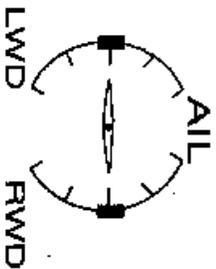
**NOTE:** The aileron and the rudder indications in degrees should appear next to the aileron trim tab and rudder synoptic only when the STALL TEST PAGE is displayed on the lower portion of the PILOT'S MFD.

**Figure 8  
(Record Sheet)**

<b>A/C:</b>		<b>Flight #:</b>			<b>Date:</b>									
ALT	IAS	Alt	LH Ail	RH Ail	Rudder	LH Elev	RH Elev	LH IB MFS	RH IB MFS	LH OB MFS	RH OB MFS	Roll Rate	HW ANGLE	
15000 FT	200 KIAS	Fuel												
		ft												
		LH _____ lbs												
		R/H _____ lbs												
		Total _____ lbs												

RECORDAILERON TRIM TAB POSITION (EICAS)

\*Use clinometer for handwheel angle (degree)



15000 FT

Aileron trim:

Rudder trim:

-- Record sheet --

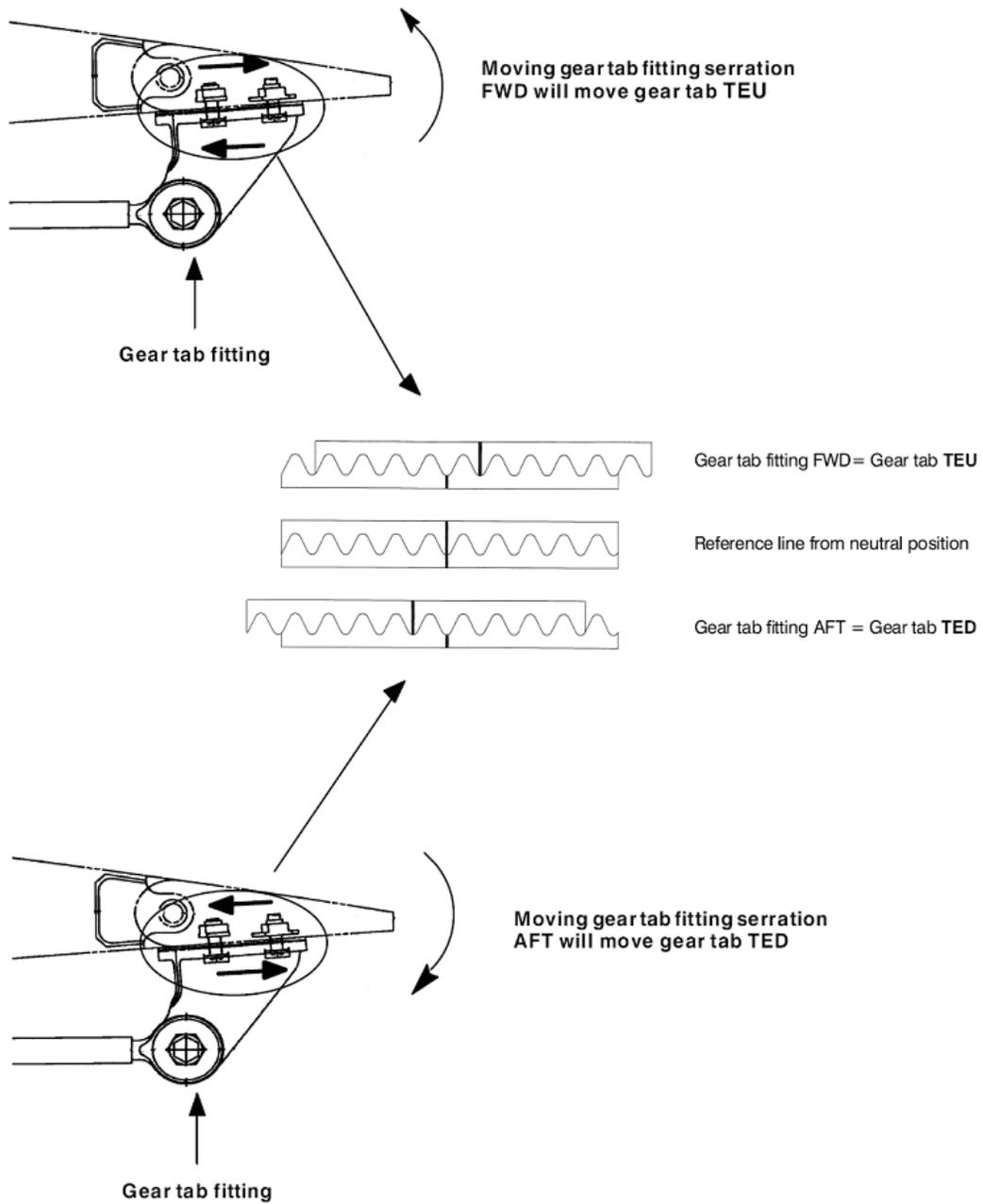
Pre-Condition	AILERON TRIM AND CONTROL WHEEL CHECK	Flight Test Requirements	Expected Results
<ul style="list-style-type: none"> <li>- Stabilize the aircraft in level flight, 10000 to 15000 ft @ 200KIAS +/- 1Kt, landing gear and flaps retracted</li> <li>- Select Auto pilot OFF</li> <li>- Select Yaw Damper OFF</li> <li>- Select the engine AUTO SYNC switch to NI, and verify engine power is matched</li> <li>- Check wing fuel is balanced</li> <li>- Select FLIGHT CONTROLS and Stall synoptic pages</li> <li>- Center the L/R EFIS inclinometer utilizing the rudder trim actuator. Verify that both slip/skid indicators match</li> </ul>		<ul style="list-style-type: none"> <li>- Using the aileron trim actuator, trim the aircraft to maintain wings level flight</li> </ul>	<ul style="list-style-type: none"> <li>- Ailerons trim tab is within +/- 0.6° from 0</li> <li>- Control wheels are within 2° of level</li> </ul>

**Note 1:** Procedure for data reading: During flight, pull up the STALL TEST PAGE on the PILOT MFD. On the CCP, push A/ICE, ECS and HYD buttons simultaneously. This shows the flight controls degree of deflection and all flight levels.

**Note 2:** After aileron trim is set maintaining wings level flight, providing that no A/P Holding LWD or RWD messages are shown during high altitude cruise, the aircraft is acceptable in this aileron state.

**Figure 9**

**GEAR TAB SERRATIONS ADJUSTMENT**



**TABLE 1**

REQUIRED TRIM TAB ANGLE	L/H GEAR TAB SERRATION (from neutral)	R/H GEAR TAB SERRATION (from neutral)
0.00° to -0.60° LWD	No Adjustment Required	No Adjustment Required
-0.61° to -1.80° LWD	1 Serration TED	No Adjustment Required
-1.81° to -3.00° LWD	1 Serration TED	1 Serration TEU
-3.01° to -4.20° LWD	2 Serrations TED	1 Serration TEU
-4.21° to -5.40° LWD	2 Serrations TED <b>(Maximum)</b>	2 Serrations TEU <b>(Maximum)</b>
0.00° to 0.60° RWD	No Adjustment Required	No Adjustment Required
0.61° to 1.80° RWD	1 Serration TEU	No Adjustment Required
1.81° to 3.00° RWD	1 Serration TEU	1 Serration TED
3.01° to 4.20° RWD	2 Serrations TEU	1 Serration TED
4.21° to 5.40° RWD	2 Serrations TEU <b>(Maximum)</b>	2 Serrations TED <b>(Maximum)</b>

**CAUTION:**

- UNDER ALL CIRCUMSTANCES NEVER EXCEED MORE THAN 1 SERRATION DIFFERENCE BETWEEN LH AND RH.
- UNDER ALL CIRCUMSTANCES NEVER EXCEED 2 SERRATIONS FROM NEUTRAL.

**NOTE:**

- To adjust TEU, move the serrations FWD, to adjust TED move the serrations AFT (see FIGURE 5.3).
- One serration forward equals approximately 0.04 inches tab up.
- At 15000 ft, 200 kias, If trim tab angle exceeds +/-5.4°, do a good inspection of the wings, flaps, spoilers and aileron control surfaces for damage or deformation. If no abnormal condition is found, send an SRPSA to Bombardier Customer Support Engineering for support.

**TABLE 2**

HANDWHEEL ANGLE	ADJUST L/H AILERON DROOP	ADJUST R/H AILERON DROOP
5.00°CCW to 4.01° CCW	1.05° TEU	1.05° TED
4.00°CCW to 3.01° CCW	0.83° TEU	0.83° TED
3.00°CCW to 2.01° CCW	0.60° TEU	0.60° TED
2.00° CCW to 2.00° CW	No adjustment required	No adjustment required
2.01° CW to 3.00° CW	0.60° TED	0.60° TEU
3.01° CW to 4.00° CW	0.83° TED	0.83° TEU
4.01° CW to 5.00° CW	1.05° TED	1.05° TEU

**CAUTION:**

- UNDER ALL CIRCUMSTANCES NEVER EXCEED A TOTAL AILERON DROOP OF 2.05° TED AND 1.05°TEU AFTER DROOP CORRECTION.

**NOTE:**

- Any adjustment required per table 2 is in addition to the existing droop.
- There is a +/- 0.25° tolerance on the allowable change in droop position.