

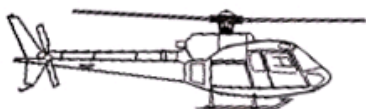


# **ATTACHMENT 3**

**AIRWORTHINESS GROUP CHAIRMAN'S FACTUAL REPORT**

**NTSB No. CEN15MA290**

**Airbus Helicopters Service Bulletin No. AS350-67.00.66 Revision 1 (31 Pages)**

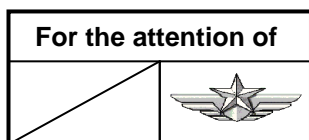


Civil version(s): B3

# SERVICE BULLETIN

**SUBJECT: ROTOR FLIGHT CONTROLS**

Functional check procedure for the tail rotor load compensator



Revision No.	Date of issue
Revision 0	2015-08-26
Revision 1	2015-10-22

**Summary:**

To insert the appended pages into the Flight Manual, pending the Flight Manual update.

**Reason for last Revision:**

The purpose of Revision 1 is:

- to specify the procedure for inserting appendices into the Flight Manual,
- to make improvements in the appended pages.

**Compliance:**

Airbus Helicopters recommends compliance with this Service Bulletin.

## 1. PLANNING INFORMATION

### 1.A. EFFECTIVITY

#### 1.A.1. Helicopters/installed equipment or parts

AS350 helicopters, version B3.

#### 1.A.2. Non-installed equipment or parts

Not applicable.

### 1.B. ASSOCIATED REQUIREMENTS

Not applicable.

### 1.C. REASON

Following the issue of Safety Information Notice No. [2944-S-29](#), Airbus Helicopters asks you to insert the appended pages into the Flight Manual, pending the Flight Manual update.

#### Revision 1

The purpose of Revision 1 is:

- to specify the procedure for inserting appendices into the Flight Manual,
- to make improvements in the appended pages.

Revision 1 affects compliance with Revision 0.

### 1.D. DESCRIPTION

Compliance with this Service Bulletin consists in inserting the appended pages into the Flight Manual, pending the Flight Manual update.

### 1.E. COMPLIANCE

#### 1.E.1. Compliance at H/C manufacturer level

Not applicable.

### 1.E.2. Compliance in service

The work on the helicopter is to be performed by the operator.

#### Helicopters/installed equipment or parts:

Upon receipt of Revision 1 of this Service Bulletin, Airbus Helicopters recommends:

- removing the pages inserted as part of compliance with Revision 0 of this Service Bulletin from the Flight Manual,
- inserting the appended pages (according to configuration) into the Flight Manual.
  - . For AS350 B3 version helicopters equipped with an ARRIEL 2B engine, insert the pages given in [Appendix 4.A.](#)
  - . For AS350 B3 version helicopters equipped with an ARRIEL 2B1 engine, insert the pages given in [Appendix 4. B.](#)
  - . For AS350 B3e helicopters (or H125 - Commercial name of AS350 B3 version helicopters equipped with an ARRIEL 2D engine), insert the pages given in [Appendix 4.C.](#) (EASA) or [Appendix 4.D.](#) (FAA/ANAC/IAC-AR).

The pages given in the Appendix are a partial update of some points of the existing pages (like a Rush Revision of the Flight Manual).

Each page given in the Appendix must be inserted (without deleting the Service Bulletin header/footer) in front of the page that contains the existing text to be modified or completed. No pages are removed from the Flight Manual.

The information which has been updated and integrated in the Appendices is detailed in:

- [Figures 1 and 2](#), for AS350 B3 version helicopters equipped with an ARRIEL 2B engine,
- [Figures 3 to 5](#), for AS350 B3 version helicopters equipped with an ARRIEL 2B1 engine,
- [Figures 6 and 7](#) (EASA) or [Figures 8 to 10](#) (FAA/ANAC/IAC-AR), for AS350 B3e version helicopters (or H125 - Commercial name of AS350 B3 version helicopters equipped with an ARRIEL 2D engine).

#### Non-installed equipment or parts:

Not applicable.

**1.F. APPROVAL**

Approval of modifications:

Not applicable.



Approval of this document:

The technical information contained in this Service Bulletin Revision 0 was approved on August 26, 2015 under the authority of EASA Design Organization Approval No. 21J.056 for helicopters of civil versions subject to an Airworthiness Certificate.

The technical information contained in this Service Bulletin Revision 1 was approved on October 22, 2015 under the authority of EASA Design Organization Approval No. 21J.056 for helicopters of civil versions subject to an Airworthiness Certificate.

**1.G. MANPOWER**

Not applicable.

**1.H. WEIGHT AND BALANCE**

Not applicable.

**1.I. POWER CONSUMPTION**

Not applicable.

**1.J. SOFTWARE UPGRADES/UPDATES**

Not applicable.

**1.K. REFERENCES**

Not applicable.

**1.L. OTHER AFFECTED PUBLICATIONS**

Airbus Helicopters will update the Flight Manual (PMV) in accordance with this Service Bulletin.

This document will be issued subsequently.

**1.M. PART INTERCHANGEABILITY OR MIXABILITY**

Not applicable.

**2. EQUIPMENT OR PARTS INFORMATION**

**2.A. EQUIPMENT OR PARTS: PRICE - AVAILABILITY - PROCUREMENT**

Not applicable.

**2.B. LOGISTIC INFORMATION**

Not applicable.

**2.C. EQUIPMENT OR PARTS REQUIRED PER HELICOPTER/COMPONENT**

Not applicable.

**2.D. EQUIPMENT OR PARTS TO BE RETURNED**

Not applicable.

**3. ACCOMPLISHMENT INSTRUCTIONS**

**3.A. GENERAL**

Not applicable.

**3.B. WORK STEPS**

Not applicable.

**3.C. COMPLIANCE CONFIRMATION**

Compliance with this document:

Record compliance with this document, with the revision number, in the helicopter documents.

**3.D. OPERATING AND MAINTENANCE INSTRUCTIONS**

Not applicable.

Before	After
<p style="text-align: right;">FLIGHT MANUAL</p> <p style="text-align: center;">4.1</p> <p>EASA Approved: 350 B3 10-11 Page 5</p>	<p style="text-align: right;">FLIGHT MANUAL</p> <p>Only the Item "Hydraulic checks", is modified as follows:</p> <div style="border: 2px solid red; padding: 5px;"> <p><b>Hydraulic checks:</b></p> <p><b>CAUTION :</b> IF NOT LOCKED, THE COLLECTIVE PITCH WILL COME UP WHEN THE ACCUMULATORS ARE DEPLETED OR WHEN THE HYDRAULIC CUTOFF SWITCH IS SET TO "OFF".</p> <p><b>Accumulator check:</b></p> <ul style="list-style-type: none"> <li>- Collective pitch - - - - - Checked correctly locked.</li> <li>- "HYD TEST" (TEST HYDR) pushbutton - Depress on center console. R</li> <li>- Warning panel - - - - - Check "HYDR" light blinks. R</li> <li>- Collective and cyclic controls - - - - - Hands on.</li> <li>- Move the cyclic control 2 or 3 times on each axis (+/- 10% of travel) and check for accumulator hydraulic assistance on pitch and roll (no control loads). <b>Check that forces are felt on the pedals.</b></li> <li>- "HYD TEST" (TEST HYDR) pushbutton - Set back in up position. R</li> <li>- Warning panel - - - - - Check "HYDR" light goes off. R</li> </ul> <p><b>Hydraulic pressure isolation check:</b></p> <ul style="list-style-type: none"> <li>- Collective pitch - - - - - Checked correctly locked.</li> <li>- Hydraulic cut-off switch - - - - - Set to OFF on collective pitch.</li> <li>- Warning panel - - - - - Check "HYDR" light on. R</li> <li>- Check that forces are felt immediately and that cyclic can be displaced in pitch and roll with normal feedback force. <b>Low pedals force should remain low (yaw load compensator effect).</b></li> <li>- Hydraulic cut-off switch - - - - - Set to ON. R</li> <li>- Warning panel - - - - - Check "HYDR" light goes off in 3 to 4 sec. Maintenance action must be performed prior to flight if this time is 1 second or less (at least one of the accumulators may be defective). R</li> </ul> <p>- Starting selector - - - - - FLL (VUL)</p> <ul style="list-style-type: none"> <li>- "HORN" (KLAX) push-button - - - - - Engaged R</li> <li>- "HORN" (KLAX) warning light - - - - - OFF R</li> <li>- Check that NR is in the green range of the indicator, near the lower limit.</li> <li>- Lower the switch guard on the starting selector.</li> <li>- "FIRE TEST" (TEST FEU) push-button - - - - - Engaged</li> <li>- "ENG FIRE" (FEU MOT) warning light - ON R</li> <li>- Check that audio Gong warning sounds.</li> <li>- Check -</li> <li>- Electrical system voltage and current.</li> <li>- Engine oil pressure.</li> </ul> </div> <p style="text-align: center;">4.1</p> <p>Approved 350 B3 10-11 Page 5</p>
<p style="text-align: right;">FLIGHT MANUAL</p> <p>9 APPROACH AND LANDING</p> <p>9.1 Approach</p> <p>- Final approach should be made into the wind at a low rate of descent and recommended airspeed of 65 kt (120 km/h).</p> <p>9.2 Landing</p> <p><b>CAUTION :</b> HEATING * AND DEMISTING ARE PROHIBITED BEYOND MAXIMUM CONTINUOUS POWER RATING (Ng/ta).</p> <p>From hover, reduce collective pitch very gradually until initial touch-down is made, then cancel collective pitch completely.</p> <p><b>CAUTION :</b> WHEN LANDING ON A SLOPE, RETURN THE CYCLIC CONTROL STICK TO NEUTRAL BEFORE SETTING FULL LOW COLLECTIVE PITCH.</p> <p>10 AFTER LANDING</p> <p>Engine and Rotor shutdown</p> <ul style="list-style-type: none"> <li>- Put the engine selector to IDLE position. R</li> <li>- Wait 30 seconds with Ng &lt; 75%.</li> <li>- Switch off all unnecessary systems.</li> <li>- Position the start selector on OFF.</li> <li>- Switch off the generator.</li> <li>- Fully apply the rotor brake when NR is equal to or less than :       <ul style="list-style-type: none"> <li>- 140 rpm normal Ng.</li> <li>- 120 rpm maximum NR (in high wind conditions).</li> </ul> </li> <li>- When the rotors are completely stopped : press the "HYD TEST"(TEST HYDR) R push-button for 1 to 2 sec., then release, in order to :       <ul style="list-style-type: none"> <li>- discharge the hydraulic accumulators.</li> <li>- re-centrally the yaw pedals if necessary.</li> </ul> </li> </ul> <p><b>VENO flight report:</b></p> <ul style="list-style-type: none"> <li>- On engine shutdown, the lower VENO screen displays the FLIGHT REPORT :</li> <li>- Engine start number.</li> <li>- Operating time (counted from Ng &gt; 60% until Ng &lt; 50%).</li> <li>- Number of gas generator cycles performed during the flight and total number of cycles.</li> <li>- Number of Free turbine cycles performed during the flight and total number of cycles.</li> <li>- Check that the partial cycles figure is not zero and that it is displayed in white.</li> <li>- Check any FAILURE or OVERLIMIT DETECTED message.</li> <li>- GPS navigation system (if fitted) - - - - - OFF.</li> <li>- Battery - - - - - OFF.</li> </ul> <p>11 TURNAROUND CHECK (TA)</p> <ul style="list-style-type: none"> <li>- Check MGB, TGB and engine fluid levels.</li> <li>- Check that there is no flow from the engine platform drain.</li> <li>- Visual check of the main and tail rotor blade slats.</li> <li>- Check that all loads are securely tied down, baggage compartment doors and cowlings are correctly locked.</li> </ul> <p>* Optional</p> <p>EASA Approved: 350 B3 10-11 Page 8</p>	<p style="text-align: right;">FLIGHT MANUAL</p> <p>Only the Item "When the rotors are completely stopped" paragraph 10 AFTER LANDING, is modified as follows:</p> <div style="border: 2px solid red; padding: 5px;"> <p>- When the rotors are completely stopped:</p> <p><b>Yaw load compensator check:</b></p> <ul style="list-style-type: none"> <li>- Check that right pedal moves forward without pilot input, or right pedal can be moved forward with low force.</li> <li>- Press the "HYD TEST" (TEST HYDR) push-button for 1 to 2 sec., then release.</li> <li>- Check that pedals can be re-centered and remain centered.</li> </ul> <p><b>NOTE :</b> Yaw load compensator maintenance action is required if, before activation of "HYD TEST" (TEST HYDR) push-button, the right pedal cannot be moved forward with low force.</p> <p>The "HYD TEST" (TEST HYDR) discharges the yaw load compensator. In order to repeat the check, it is necessary to re-pressurize the hydraulic system.</p> </div> <p style="text-align: center;">4.1</p> <p>Approved 350 B3 10-11 Page 8</p>

Figure 1 - ARIEL 2B



Before	After
<p style="text-align: right;">FLIGHT MANUAL</p> <p>Replace all the Hydraulic checks by: R</p> <div style="border: 1px solid red; padding: 5px;"> <p>HYDRAULIC CHECKS:</p> <ul style="list-style-type: none"> <li>- Servo distributors seizure checks:</li> <li>  - "SERVO TEST" pushbutton - - - - - PRESS; "SERVO" light comes on. R</li> <li>- Yaw servo hydraulic check:</li> <li>  - Yaw servo hydraulic switch (collective grip) - - - - - OFF, yaw pedals loads should remain low (yaw load compensator effect). R</li> <li>  Check "HYDZ" light flashes. R</li> <li>  - "ACCU" pushbutton - - - - - PRESS, check that loads are felt on the yaw pedals. R</li> <li>  - "ACCU" pushbutton - - - - - RESET in OFF position. R</li> <li>  - Yaw servo hydraulic switch (collective grip) - - - - - ON, check no loads are felt on yaw pedals. R</li> <li>  Check "HYDZ" light goes off. R</li> </ul> </div> <p>The rest of the basic flight manual procedure remains applicable. R</p> <p>5 <u>PERFORMANCE DATA</u> R</p> <p>The performance data specified in the basic flight manual and in the flight manual supplements remain applicable. R</p> <p style="text-align: right;"><b>SUP.23</b></p> <p>Approved 350 B3 14-48 Page 4</p>	<p style="text-align: right;">FLIGHT MANUAL</p> <p>Only the Item "Hydraulic checks", is modified as follows:</p> <div style="border: 1px solid red; padding: 5px;"> <p>Hydraulic checks:</p> <ul style="list-style-type: none"> <li>- Servo distributors seizure check:</li> <li>  - "SERVO TEST" pushbutton - - - PRESS; "SERVO" light comes on. R</li> </ul> </div> <p style="text-align: right;"><b>SUP.23</b> Page 4</p>

Figure 2 - ARRIEL 2B


Before	After
<p>FLIGHT MANUAL AS 350 B3 Arriel 2B1</p> <p><b>4.3 START UP</b></p> <p><b>4.3.1 ENGINE PRESTART CHECK</b></p> <ul style="list-style-type: none"> <li>- Seats and control pedals.....ADJUST and SECURE.</li> <li>- Seat belts.....FASTEN.</li> </ul> <p style="text-align: center;"><b>NOTE</b></p> <p>Copilot seat belts shall be fastened in all cases.</p> <ol style="list-style-type: none"> <li>1. Rotor brake.....RELEASE, fully forward.</li> <li>2. Fuel shut-off lever.....FORWARD, plastic guard condition.</li> <li>3. Twist grip.....IDLE position.</li> <li><b>4. Hydraulic pressure switch.....ON</b></li> <li>5. [MASTER SW] or [EMER SW].....CHECK UP position</li> <li>6. Engine starting selector.....OFF.</li> <li>7. [EXT PWR BATT] or [BAT/EPU] [DCT/BAT] (if fitted) [GEN] or [GENE].....ON.</li> <li>8. Lighting circuits 1 and 2 test.....PERFORM (if night flight intended).</li> <li>9. ICS and GPS nav. system.....ON.</li> <li>10. Electrical mirror (if fitted).....SET to avoid dazzling (night flight).</li> <li>11. [W/LT TEST] or [W/LT TST].....PERFORM.</li> <li>12. [FIRE TEST] or [FIRE TST].....PERFORM, CHECK- </li> <li>13. [HYD TEST] or [ACCU TST].....ON position for 2 sec., then OFF.</li> </ol> <p>4 - 6 <span style="float: right;">APPROVED REVISION 8</span></p>	<p>FLIGHT MANUAL AS 350 B3 Arriel 2B1</p> <p style="text-align: center;">Only the item 4 is modified as follows:</p> <p style="text-align: center;"><b>4. Hydraulic cut-off switch (collective pitch).....ON</b></p> <p>4 - 6 <span style="float: right;">APPROVED</span></p>

Figure 3 - ARRIEL 2B1

Before	After
<p style="text-align: right;">FLIGHT MANUAL AS 350 B3 Arriel 2B1</p> <p>4.3.3 RUN-UP CHECK</p> <div style="border: 1px solid red; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;"><b>CAUTION</b></p> <p>If not locked, the collective pitch will come up when the accumulators are depleted or when the hydraulic cut-off switch on the collective is set to OFF.</p> </div> <p>1. Hydraulic checks:</p> <ul style="list-style-type: none"> <li>• Accumulators check:           <ul style="list-style-type: none"> <li>- Collective pitch ..... CHECK correctly locked.</li> <li>- [HYD TEST] or [ACCU TST] ..... ON.</li> <li>- CWP ..... CHECK <b>HYDR</b> flashes.</li> <li>- Collective / cyclic controls ..... HANDS on.</li> <li>- Move the cyclic control 2 or 3 times on each axis (+/- 10% of travel) and check for accumulator hydraulic assistance on pitch and roll (no control loads). Check that forces are felt on the pedals.</li> <li>- [HYD TEST] or [ACCU TST] ..... RESET to OFF position.</li> <li>- CWP ..... CHECK <b>HYDR</b></li> </ul> </li> </ul> <p style="text-align: right;">APPROVED REVISION 8</p> <p style="text-align: right;">4 - 9</p>	<p style="text-align: right;">FLIGHT MANUAL AS 350 B3 Arriel 2B1</p> <p>Only the item 1 is modified as follows:</p> <p>1. Hydraulic checks:</p> <div style="border: 1px solid red; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;"><b>CAUTION</b></p> <p>If not locked, the collective pitch lever will move up when the accumulators are depleted or when the hydraulic cut-off switch on the collective is set to OFF.</p> </div> <ul style="list-style-type: none"> <li>• Accumulator checks:           <ul style="list-style-type: none"> <li>- Collective pitch ..... CHECK correctly locked.</li> <li>- [HYD TEST] or [ACCU TST] ..... ON.</li> <li>- CWP ..... CHECK <b>HYDR</b> flashes.</li> <li style="margin-left: 20px;">(HYDR steady PRE MOD 07-3317)</li> <li>- Collective / cyclic controls ..... HANDS on.</li> <li>- Move the cyclic control 2 or 3 times on each axis (+/- 10% of travel) and check for accumulator hydraulic assistance on pitch and roll (no control loads).</li> <li>- [HYD TEST] or [ACCU TST] ..... RESET to OFF position.</li> <li>- CWP ..... CHECK <b>HYDR</b></li> </ul> </li> <li>• Hydraulic cut-off test:           <ul style="list-style-type: none"> <li>- Collective pitch ..... CHECK correctly locked.</li> <li>- Hydraulic cut-off switch (collective pitch) ..... OFF.</li> <li>- CWP ..... CHECK <b>HYDR</b></li> <li>- Check that loads are felt immediately and that cyclic stick can be moved in pitch and roll with normal feedback loads.</li> <li>- Hydraulic cut-off switch (collective pitch) ..... ON.</li> <li>- CWP ..... CHECK <b>HYDR</b> after 3 to 4 sec. Maintenance action must be performed prior to flight if this time is reduced to 1 sec. (at least one of the accumulators is faulty).</li> </ul> </li> </ul> <p style="text-align: right;">APPROVED</p> <p style="text-align: right;">4 - 9</p>
<p style="text-align: right;">FLIGHT MANUAL AS 350 B3 Arriel 2B1</p> <div style="border: 1px solid red; padding: 5px; margin-bottom: 10px;"> <ul style="list-style-type: none"> <li>• Hydraulic pressure isolation check:           <ul style="list-style-type: none"> <li>- Collective pitch ..... CHECK correctly locked.</li> <li>- Hydraulic cutoff switch ..... SET to OFF.</li> <li>- CWP ..... CHECK <b>HYDR</b></li> <li>- Check that loads are felt immediately and that cyclic can be moved in pitch and roll with normal feedback loads. Yaw pedals force should stay low (yaw loads compensator effect).</li> <li>- Hydraulic cutoff switch ..... SET to ON.</li> <li>- CWP ..... CHECK <b>HYDR</b> after 3 to 4 sec. Maintenance action must be performed prior to flight if this time is reduced to 1 sec. (at least one of the accumulators is faulty).</li> </ul> </li> <li>• When minimum engine oil temperature is reached (Refer to SECTION 2 §2.4.4):</li> </ul> </div> <ol style="list-style-type: none"> <li>2. Twist grip ..... FLIGHT position.</li> <li>• When NR ≥ 340 rpm:       <ul style="list-style-type: none"> <li>3. [HORN] ..... ON <b>HORN</b></li> <li style="margin-left: 20px;">CHECK audio warning:           <ul style="list-style-type: none"> <li>• ON for NR ≤ 360 rpm.</li> <li>• OFF for NR &gt; 360 rpm.</li> </ul> </li> <li>4. NR indication ..... CHECK in lower green range.</li> <li>5. [FIRE/TEST] or [FIRE/TST] ..... PERFORM, CHECK:           <ul style="list-style-type: none"> <li>• FIRE → Gong sounds.</li> </ul> </li> <li>6. Parameter checks ..... No warning light illuminated, Electrical system voltage and current, Engine oil pressure.</li> </ul></li></ol> <p style="text-align: right;">4 - 10</p> <p style="text-align: right;">APPROVED REVISION 8</p>	<p style="text-align: right;">FLIGHT MANUAL AS 350 B3 Arriel 2B1</p> <p>Only the item 1 is modified as follows:</p> <p>1. Hydraulic checks:</p> <div style="border: 1px solid red; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;"><b>CAUTION</b></p> <p>If not locked, the collective pitch lever will move up when the accumulators are depleted or when the hydraulic cut-off switch on the collective is set to OFF.</p> </div> <ul style="list-style-type: none"> <li>• Accumulator checks:           <ul style="list-style-type: none"> <li>- Collective pitch ..... CHECK correctly locked.</li> <li>- [HYD TEST] or [ACCU TST] ..... ON.</li> <li>- CWP ..... CHECK <b>HYDR</b> flashes.</li> <li style="margin-left: 20px;">(HYDR steady PRE MOD 07-3317)</li> <li>- Collective / cyclic controls ..... HANDS on.</li> <li>- Move the cyclic control 2 or 3 times on each axis (+/- 10% of travel) and check for accumulator hydraulic assistance on pitch and roll (no control loads).</li> <li>- [HYD TEST] or [ACCU TST] ..... RESET to OFF position.</li> <li>- CWP ..... CHECK <b>HYDR</b></li> </ul> </li> <li>• Hydraulic cut-off test:           <ul style="list-style-type: none"> <li>- Collective pitch ..... CHECK correctly locked.</li> <li>- Hydraulic cut-off switch (collective pitch) ..... OFF.</li> <li>- CWP ..... CHECK <b>HYDR</b></li> <li>- Check that loads are felt immediately and that cyclic stick can be moved in pitch and roll with normal feedback loads.</li> <li>- Hydraulic cut-off switch (collective pitch) ..... ON.</li> <li>- CWP ..... CHECK <b>HYDR</b> after 3 to 4 sec. Maintenance action must be performed prior to flight if this time is reduced to 1 sec. (at least one of the accumulators is faulty).</li> </ul> </li> </ul> <p style="text-align: right;">APPROVED</p> <p style="text-align: right;">4 - 9</p>

Figure 4 - ARRIEL 2B1

Before	After
<p>FLIGHT MANUAL AS 350 B3 Arriel 2B1</p> <ul style="list-style-type: none"> <li>When rotor is stopped:</li> </ul> <p>10. GPS navigation system ..... OFF.</p> <p>11. [HYD TEST] or [ACCU TST] ..... ON position for 2 sec., re-align pedals if necessary.</p> <p>12. [A/COL LT] ..... OFF.</p> <ul style="list-style-type: none"> <li><b>BEFORE LEAVING HELICOPTER</b></li> </ul> <p>13. VEMD ..... CHECK for Flight Report page data:</p> <ul style="list-style-type: none"> <li>Operating time (counted from Ng &gt; 60 % after start, to Ng &lt; 50 % at engine shutdown).</li> <li>Ng and Nf cycles ..... CHECK (indicated in white characters and above 0).</li> <li>Advisory messages: <b>FAILURE DETECTED</b> or <b>OVERLIMIT DETECTED</b>.</li> </ul> <p>14. [DCT/BAT] (if fitted), [EXT PWR BATT] or [BAT/EPU] ..... OFF.</p> <p>15. Pitot, static ports, air intake and exhaust covers, blade socks as required.</p> <p><b>4.9 MISCELLANEOUS PROCEDURES AND DATA</b></p> <p><b>4.9.1. TANK CAPACITIES</b></p> <ul style="list-style-type: none"> <li><b>Maximum capacity</b> 540 liters (142.7 US gal) (427 kg) (941 lb).</li> </ul> <p>4 - 14</p> <p style="text-align: right;">APPROVED REVISION 8</p>	<p>FLIGHT MANUAL AS 350 B3 Arriel 2B1</p> <p>Only the item 11 [HYD TEST] or [ACCU TST] is modified as follows:</p> <p>11. Yaw load compensator check:</p> <ul style="list-style-type: none"> <li>Right pedal moves forward without pilot input, or right pedal can be moved forward with low force ..... CHECK.</li> <li>[HYD TEST] or [ACCU TST] ..... ON for 2 sec., then OFF.</li> <li>Pedals can be re-centered and remain centered ..... CHECK.</li> </ul> <p style="text-align: center;">NOTE</p> <p>Yaw load compensator maintenance action is required if, before activation of [HYD TEST] or [ACCU TST] pushbutton, the right pedal cannot be moved forward with low force.</p> <p>The [HYD TEST] or [ACCU TST] discharges the yaw load compensator. In order to repeat the check, it is necessary to re-pressurize the hydraulic system.</p> <p>4 - 14</p> <p style="text-align: right;">APPROVED</p>

Before	After
<p>FLIGHT MANUAL AS 350 B3 Arriel 2B1</p> <ul style="list-style-type: none"> <li><b>RUN UP CHECK</b> (paragraph 4.3.3 of the basic flight manual):</li> </ul> <p>Replace item 2 by the following:</p> <p>2. Hydraulic checks:</p> <ul style="list-style-type: none"> <li>Servo distributors seizure check: <ul style="list-style-type: none"> <li>[SERVO TEST] or [SERVO TST] ..... PRESS: <b>SERVO</b>.</li> </ul> </li> <li>Yaw servo hydraulic check: <ul style="list-style-type: none"> <li>Yaw servo hydraulic switch (collective grip) ..... OFF, yaw pedal loads should remain low (yaw load compensator effect). Check <b>HYD2</b> flashes.</li> <li>[HYD TEST] or [ACCU TST] ..... ON, check that loads are felt on the yaw pedals.</li> <li>[HYD TEST] or [ACCU TST] ..... RESET in OFF position.</li> <li>Yaw servo hydraulic switch (collective grip) ..... ON, check no loads are felt on yaw pedals. Check <b>HYD2</b>.</li> </ul> </li> </ul> <p>The rest of the basic flight manual procedure remains applicable.</p> <p><b>5 PERFORMANCE</b></p> <p>The performance data specified in the basic flight manual and in the flight manual supplements remain applicable.</p> <p>APPROVED REVISION 9</p> <p style="text-align: right;">9 - 23 - 9</p>	<p>FLIGHT MANUAL AS 350 B3 Arriel 2B1</p> <p>Only the item 2 is modified as follows:</p> <p>2. Hydraulic checks:</p> <ul style="list-style-type: none"> <li>Servo distributors seizure check: <ul style="list-style-type: none"> <li>[SERVO TEST] or [SERVO TST] ..... PRESS: <b>SERVO</b>.</li> </ul> </li> </ul> <p>APPROVED</p> <p style="text-align: right;">9 - 23 - 9</p>

Figure 5 - ARRIEL 2B1

Before	After
<p style="text-align: center;">FLIGHT MANUAL</p> <p style="text-align: center;"><b>SECTION 4.3</b> <b>START UP</b></p> <p><b>1 ENGINE PRESTART CHECK</b></p> <ul style="list-style-type: none"> <li>- Seats and control pedals.....ADJUST and SECURE.</li> <li>- Seat belts.....FASTEN.</li> </ul> <p style="text-align: center;"><b>NOTE</b> Copilot seat belts shall be fastened in all cases.</p> <ol style="list-style-type: none"> <li>1. Rotor brake.....RELEASE, fully forward.</li> <li>2. Fuel shut-off lever.....FORWARD, plastic guard condition.</li> <li>3. Twist grip.....IDLE position.</li> <li>4. Hydraulic pressure switch.....ON</li> <li>5. Engine starting selector.....OFF.</li> <li>6. [BATT].....ON.</li> <li>7. Instrument lighting system.....OFF/DAY/NIGHT (as required) <b>INST LIGHT</b></li> <li>8. ICS.....ON.</li> <li>9. [COM1/NAV1].....ON.</li> <li>10. Electric mirror (if installed).....SET to avoid dazzling (night flight).</li> <li>11. [W/LT TST].....PERFORM. Check TRQ indicates 100 % for 2 sec., then 0.</li> <li>12. [FIRE TST].....PERFORM, CHECK <b>ENG FIRE</b></li> <li>13. [ACCU TST].....ON position for 2 sec. then OFF.</li> </ol> <p style="text-align: right;">APPROVED 350 B3e <b>4.3</b> 14-44 Page 1</p>	<p style="text-align: center;">FLIGHT MANUAL</p> <p style="text-align: center;">Only the item 4 is modified as follows:</p> <div style="border: 1px solid red; padding: 5px; margin: 10px auto; width: fit-content;"> <p>4. Hydraulic cut-off switch (collective pitch).....ON</p> </div> <p style="text-align: right;">APPROVED 350 B3e <b>4.3</b> [A] Page 1</p>
<p style="text-align: center;">FLIGHT MANUAL</p> <p><b>3 RUN-UP CHECK</b></p> <div style="border: 1px solid red; padding: 5px; margin: 10px auto; width: fit-content;"> <p style="text-align: center;"><b>CAUTION</b></p> <p>If not locked, the collective pitch lever will move up when the accumulators are depleted or when the hydraulic cut-off switch on the collective is set to off.</p> </div> <p>1. Hydraulic checks:</p> <ul style="list-style-type: none"> <li>- Accumulator checks: <ul style="list-style-type: none"> <li>- Collective pitch.....CHECK correctly locked.</li> <li>- [ACCU TST].....ON.</li> <li>- CWP.....CHECK <b>HYDR</b> flashes.</li> <li>- Collective / cyclic controls.....HANDS on.</li> <li>- Move the cyclic control 2 or 3 times on each axis (+/- 10% of travel) and check for accumulator hydraulic assistance on pitch and roll (no control loads). Check that forces are felt on the pedals.</li> <li>- [ACCU TST].....RESET to OFF position.</li> <li>- CWP.....CHECK <b>HYDR</b></li> </ul> </li> <li>- Hydraulic pressure isolation check: <ul style="list-style-type: none"> <li>- Collective pitch.....CHECK correctly locked.</li> <li>- Hydraulic cut-off switch.....SET to OFF</li> <li>- CWP.....CHECK <b>HYDR</b></li> <li>- Check that loads are felt immediately and that cyclic can be moved in pitch and roll with normal feedback loads. Yaw pedals loads should stay low (yaw load compensator effect).</li> <li>- Hydraulic cut-off switch.....SET to ON</li> <li>- CWP.....CHECK <b>HYDR</b> after 3 to 4 sec. Maintenance action must be performed prior to flight if this time is reduced to 1 sec. (at least one of the accumulators is faulty).</li> </ul> </li> </ul> <p style="text-align: right;">APPROVED 350 B3e <b>4.3</b> 14-44 Page 4</p>	<p style="text-align: center;">FLIGHT MANUAL</p> <p style="text-align: center;">Only the item 1 is modified as follows:</p> <p>1. Hydraulic checks:</p> <div style="border: 1px solid red; padding: 5px; margin: 10px auto; width: fit-content;"> <p style="text-align: center;"><b>CAUTION</b></p> <p>If not locked, the collective pitch lever will move up when the accumulators are depleted or when the hydraulic cut-off switch on the collective pitch is set to off.</p> </div> <ul style="list-style-type: none"> <li>• Accumulator checks: <ul style="list-style-type: none"> <li>- Collective pitch.....CHECK correctly locked</li> <li>- [ACCU TST].....ON</li> <li>- CWP.....CHECK <b>HYDR</b> flashes</li> <li>- Collective / cyclic controls.....HANDS on</li> <li>- Move the cyclic stick 2 or 3 times on each axis (± 10% of total travel) and check for accumulator hydraulic assistance on pitch and roll (no control loads)</li> <li>- [ACCU TST].....RESET to OFF position</li> <li>- CWP.....CHECK <b>HYDR</b></li> </ul> </li> <li>• Hydraulic cut-off test: <ul style="list-style-type: none"> <li>- Collective pitch.....CHECK correctly locked</li> <li>- Hydraulic cut-off switch (collective pitch).....OFF</li> <li>- CWP.....CHECK <b>HYDR</b></li> <li>- Check that loads are felt immediately and that cyclic stick can be moved in pitch and roll with normal feedback loads</li> <li>- Hydraulic cut-off switch (collective pitch).....ON</li> <li>- CWP.....CHECK <b>HYDR</b> after 3 to 4 sec. Maintenance action must be performed prior to flight if this time is reduced to 1 sec. (at least one of the accumulators is faulty)</li> </ul> </li> </ul> <p style="text-align: right;">APPROVED 350 B3e <b>4.3</b> [A] Page 4</p>

Figure 6 - ARRIEL 2D (EASA)

Before	After
<p style="text-align: center;">FLIGHT MANUAL</p> <p style="text-align: center;"><b>SECTION 4.6</b> <b>ENGINE AND ROTOR SHUTDOWN</b></p> <p><b>1 ENGINE AND ROTOR SHUTDOWN</b></p> <ol style="list-style-type: none"> <li>1. Cyclic stick ..... NEUTRAL.</li> <li>2. Collective pitch ..... LOCK.</li> <li>3. Twist grip ..... IDLE position.</li> <li>4. Engine oil cooling ..... WAIT for 30 sec.</li> <li>5. [PITOT],[HORN], landing light ..... OFF.</li> <li>6. Non-required systems, [AVIONIC] or [AVIONICS]* ..... OFF.</li> <li>7. Engine starting selector ..... OFF position.</li> <li>8. [GENE] ..... OFF.</li> </ol> <p>At NR ≤ 170 rpm (for high wind conditions) or NR ≤ 140 rpm (normal conditions).</p> <ol style="list-style-type: none"> <li>9. Rotor brake ..... APPLY.                     <ul style="list-style-type: none"> <li>- When rotor is stopped:</li> </ul> </li> <li>10. [ACOL LT] or [ACOLT] ..... OFF</li> <li>11. [ACCU TST] ..... ON for 2 sec., re-align pedals if necessary.</li> </ol> <p>- BEFORE LEAVING HELICOPTER</p> <ol style="list-style-type: none"> <li>12. VEMD ..... CHECK of Flight Report page data:                     <ul style="list-style-type: none"> <li>- Operating time (counted from N1 &gt; 60 % after start, to N1 &lt; 50 % at engine shutdown),</li> <li>- Usage counter,</li> <li>- N1 and N2 cycles ..... CHECK (Indicated in white characters and above 0).</li> <li>- Advisory messages: <b>FAILURE DETECTED</b> or <b>OVERLIMIT DETECTED</b>.</li> </ul> </li> <li>13. [DCT/BAT], [BAT/EPU] or [BATT] ..... OFF.</li> <li>14. Pitot, static ports, air intake and exhaust covers, blade socks as required.</li> </ol> <p>(*) Post MOD 07-4280</p> <p style="text-align: right;">APPROVED                      350 B3e                      <b>4.6</b> 14-44                      Page 1</p>	<p style="text-align: center;">FLIGHT MANUAL</p> <p style="text-align: center;">Only the item 11 is modified as follows:</p> <div style="border: 2px solid red; padding: 5px;"> <p><b>11. Yaw load compensator check:</b></p> <ul style="list-style-type: none"> <li>- Right pedal moves forward without pilot input, or right pedal can be moved forward with low force ..... CHECK.</li> <li>- [ACCU TST] ..... ON for 2 sec., then OFF.</li> <li>- Pedals can be re-centered and remain centered ..... CHECK.</li> </ul> <p style="text-align: center;"><b>NOTE</b></p> <p>Yaw load compensator maintenance action is required if, before activation of [ACCU TST] pushbutton, the right pedal cannot be moved forward with low force.</p> <p>The [ACCU TST] discharges the yaw load compensator. In order to repeat the check, it is necessary to re-pressurize the hydraulic system.</p> </div> <p style="text-align: right;">APPROVED                      350 B3e                      <b>4.6</b> A                      Page 1</p>
<p style="text-align: center;">FLIGHT MANUAL</p> <p style="text-align: center;">- RUN-UP CHECK (SECTION 4.3 § 3 of the basic flight manual): Replace item 1 by the following:</p> <div style="border: 2px solid red; padding: 5px;"> <p><b>1. Hydraulic checks:</b></p> <ul style="list-style-type: none"> <li>- Servo distributors seizure check:                             <ul style="list-style-type: none"> <li>• [SERVO TST] ..... PRESS: <b>SERVO</b></li> </ul> </li> <li>- Yaw servo hydraulic check:                             <ul style="list-style-type: none"> <li>• Yaw servo hydraulic switch (collective grip) ..... OFF yaw pedal loads should remain low (yaw load compensator effect). Check <b>HYD2</b> flashes (Post MOD 07-4622).</li> <li>• [ACCU TST] ..... ON, check that loads are felt on the yaw pedals.</li> <li>• [ACCU TST] ..... RESET in OFF position.</li> <li>• Yaw servo hydraulic switch (collective grip) ..... ON, check no loads are felt on yaw pedals. Check <b>HYD2</b> (Post MOD 07-4622).</li> </ul> </li> </ul> <p>The rest of the basic flight manual procedure remains applicable.</p> </div> <p><b>5 PERFORMANCE DATA</b></p> <p>The performance data specified in the basic flight manual and in the flight manual supplements remain applicable.</p> <p style="text-align: right;">APPROVED                      350 B3e                      <b>SUP.23</b> 14-44                      Page 8</p>	<p style="text-align: center;">FLIGHT MANUAL</p> <p style="text-align: center;">Only the item 1 is modified as follows:</p> <div style="border: 2px solid red; padding: 5px;"> <p><b>1. Hydraulic checks:</b></p> <ul style="list-style-type: none"> <li>- Servo distributors seizure check:                             <ul style="list-style-type: none"> <li>• [SERVO TST] ..... PRESS: <b>SERVO</b></li> </ul> </li> </ul> </div> <p style="text-align: right;">APPROVED                      350 B3e                      <b>SUP.23</b> A                      Page 8</p>

Figure 7 - ARRIEL 2D (EASA)

Before	After
<p>FLIGHT MANUAL AS 350 B3e</p> <p><b>4.3 START UP</b></p> <p><b>4.3.1 ENGINE PRESTART CHECK</b></p> <ul style="list-style-type: none"> <li>- Seats and control pedals..... ADJUST and SECURE.</li> <li>- Seat belts..... FASTEN.</li> </ul> <p style="text-align: center;"><b>NOTE</b></p> <p>Copilot seat belts shall be fastened in all cases.</p> <ol style="list-style-type: none"> <li>1. Rotor brake..... RELEASE, fully forward.</li> <li>2. Fuel shut-off lever..... FORWARD, plastic guard condition.</li> <li>3. Twist grip..... IDLE position.</li> <li>4. Hydraulic pressure switch..... ON</li> <li>5. Engine starting selector..... OFF.</li> <li>6. [BATT]..... ON.</li> <li>7. Instrument lighting system..... OFF/DAY/NIGHT (as required, if night flight intended). <span style="background-color: black; color: white; padding: 2px;">INST LIGHT</span></li> <li>8. ICS..... ON.</li> <li>9. [COM1/NAV1]..... ON.</li> <li>10. Electric mirror (if installed)..... SET to avoid dazzling (night flight).</li> <li>11. [W/LT TST]..... PERFORM. Check TRQ indicates 100 % for 2 sec., then 0.</li> <li>12. [FIRE TST]..... PERFORM, CHECK: <span style="background-color: black; color: red; padding: 2px;">ENG FIRE</span></li> <li>13. [ACCU TST]..... CHECK OFF position (Pre MOD 07-5606).</li> </ol> <p>[ACCU TST]..... ON position for 2 sec. then OFF (Post MOD 07-5606).</p> <p>4 - 6      Post MOD 07-4280 and Post MOD 07-4654      EASA APPROVED REVISION 4</p>	<p>FLIGHT MANUAL AS 350 B3e</p> <p>Only the item 4 is modified as follows:</p> <div style="border: 2px solid red; padding: 5px; display: inline-block;"> <p>4. Hydraulic cut-off switch (collective pitch)..... ON</p> </div> <p>4 - 6      <span style="border: 1px solid black; padding: 2px;">B   G   K</span>      APPROVED</p>

Figure 8 - ARRIEL 2D (FAA/ANAC/IAC-AR)

Before	After
<p style="text-align: right;">FLIGHT MANUAL AS 350 B3e</p> <p>4.3.3 RUN-UP CHECK</p> <div style="border: 2px solid red; padding: 5px; margin: 10px 0;"> <p style="text-align: center;"><b>CAUTION</b></p> <p>If not locked, the collective pitch lever will move up when the accumulators are depleted or when the hydraulic cut-off switch on the collective is set to OFF.</p> </div> <p>1. Hydraulic checks:</p> <ul style="list-style-type: none"> <li>• <b>Accumulator checks:</b> <ul style="list-style-type: none"> <li>- Collective pitch ..... CHECK correctly locked.</li> <li>- [ACCU TST] ..... ON.</li> <li>- CWP ..... CHECK <b>HYDR</b> flashes.</li> <li>- Collective / cyclic controls ..... HANDS on.</li> <li>- Move the cyclic control 2 or 3 times on each axis (+/- 10% of total travel) and check for accumulator hydraulic assistance on pitch and roll (no control loads). <span style="border: 1px solid red; padding: 2px;">Check that forces are felt on the pedals.</span></li> <li>- [ACCU TST] ..... RESET to OFF position.</li> <li>- CWP ..... CHECK <b>HYDR</b>.</li> </ul> </li> </ul> <p style="text-align: right;">EASA APPROVED REVISION 2      Post MOD 07-5606      4 - 9</p>	<p style="text-align: right;">FLIGHT MANUAL AS 350 B3e</p> <p>Only the item 1 is modified as follows:</p> <p>1. Hydraulic checks:</p> <div style="border: 2px solid red; padding: 5px; margin: 10px 0;"> <p style="text-align: center;"><b>CAUTION</b></p> <p>If not locked, the collective pitch lever will move up when the accumulators are depleted or when the hydraulic cut-off switch on the collective is set to OFF.</p> </div> <ul style="list-style-type: none"> <li>• <b>Accumulator checks:</b> <ul style="list-style-type: none"> <li>- Collective pitch ..... CHECK correctly locked.</li> <li>- [ACCU TST] ..... ON.</li> <li>- CWP ..... CHECK <b>HYDR</b> flashes.</li> <li>- Collective / cyclic controls ..... HANDS on.</li> <li>- Move the cyclic control 2 or 3 times on each axis (+/- 10% of total travel) and check for accumulator hydraulic assistance on pitch and roll (no control loads). <span style="border: 1px solid red; padding: 2px;">Check that forces are felt on the pedals.</span></li> <li>- [ACCU TST] ..... RESET to OFF position.</li> <li>- CWP ..... CHECK <b>HYDR</b>.</li> </ul> </li> <li>• <b>Hydraulic cut-off test:</b> <ul style="list-style-type: none"> <li>- Collective pitch ..... CHECK correctly locked.</li> <li>- Hydraulic cut-off switch (collective pitch) ..... OFF.</li> <li>- CWP ..... CHECK <b>HYDR</b>.</li> <li>- Check that loads are felt immediately and that cyclic stick can be moved in pitch and roll with normal feedback loads.</li> <li>- Hydraulic cut-off switch (collective pitch) ..... ON.</li> <li>- CWP ..... CHECK <b>HYDR</b> after 3 to 4 sec. Maintenance action must be performed prior to flight if this time is reduced to 1 sec. (at least one of the accumulators is faulty).</li> </ul> </li> </ul> <p style="text-align: right;">APPROVED      <b>B   G   E</b>      4 - 9</p>
<p style="text-align: right;">FLIGHT MANUAL AS 350 B3e</p> <div style="border: 2px solid red; padding: 5px; margin: 10px 0;"> <ul style="list-style-type: none"> <li>• <b>Hydraulic pressure isolation check:</b> <ul style="list-style-type: none"> <li>- Collective pitch ..... CHECK correctly locked.</li> <li>- Hydraulic cutoff switch ..... <span style="border: 1px solid red; padding: 2px;">SET TO OFF</span></li> <li>- CWP ..... CHECK <b>HYDR</b>.</li> <li>- Check that loads are felt immediately and that cyclic can be moved in pitch and roll with normal feedback loads. <span style="border: 1px solid red; padding: 2px;">Yaw pedals loads should stay low (yaw load compensator effect)</span></li> <li>- Hydraulic cutoff switch ..... <span style="border: 1px solid red; padding: 2px;">SET TO ON</span></li> <li>- CWP ..... CHECK <b>HYDR</b> after 3 to 4 sec. Maintenance action must be performed prior to flight if this time is reduced to 1 sec. (at least one of the accumulators is faulty).</li> </ul> </li> </ul> </div> <ul style="list-style-type: none"> <li>• When minimum engine oil temperature is reached (Refer to SECTION 2 §2.4.5).</li> <li>2. Twist grp ..... FLIGHT position.</li> <li>• When NR &gt; 340 rpm.</li> <li>3. [HORN] ..... ON. <b>HORN</b> CHECK audio warning: ON for NR &lt; 360 rpm. OFF for NR &gt; 360 rpm.</li> <li>4. NR indication ..... CHECK in lower green range.</li> <li>5. [FIRE TST] ..... PERFORM, CHECK: <b>ENG FIRE</b> → Gong sounds.</li> <li>6. Parameter checks ..... No warning light illuminated. Electrical system voltage and current. Engine oil pressure.</li> </ul> <p style="text-align: right;">4 - 10      Post MOD 07-5606      EASA APPROVED REVISION 2</p>	<p style="text-align: right;">FLIGHT MANUAL AS 350 B3e</p> <p>Only the item 1 is modified as follows:</p> <p>1. Hydraulic checks:</p> <div style="border: 2px solid red; padding: 5px; margin: 10px 0;"> <p style="text-align: center;"><b>CAUTION</b></p> <p>If not locked, the collective pitch lever will move up when the accumulators are depleted or when the hydraulic cut-off switch on the collective is set to OFF.</p> </div> <ul style="list-style-type: none"> <li>• <b>Accumulator checks:</b> <ul style="list-style-type: none"> <li>- Collective pitch ..... CHECK correctly locked.</li> <li>- [ACCU TST] ..... ON.</li> <li>- CWP ..... CHECK <b>HYDR</b> flashes.</li> <li>- Collective / cyclic controls ..... HANDS on.</li> <li>- Move the cyclic control 2 or 3 times on each axis (+/- 10% of total travel) and check for accumulator hydraulic assistance on pitch and roll (no control loads).</li> <li>- [ACCU TST] ..... RESET to OFF position.</li> <li>- CWP ..... CHECK <b>HYDR</b>.</li> </ul> </li> <li>• <b>Hydraulic cut-off test:</b> <ul style="list-style-type: none"> <li>- Collective pitch ..... CHECK correctly locked.</li> <li>- Hydraulic cut-off switch (collective pitch) ..... <span style="border: 1px solid red; padding: 2px;">OFF</span></li> <li>- CWP ..... CHECK <b>HYDR</b>.</li> <li>- Check that loads are felt immediately and that cyclic stick can be moved in pitch and roll with normal feedback loads. <span style="border: 1px solid red; padding: 2px;">Check that forces are felt on the pedals.</span></li> <li>- Hydraulic cut-off switch (collective pitch) ..... <span style="border: 1px solid red; padding: 2px;">ON</span></li> <li>- CWP ..... CHECK <b>HYDR</b> after 3 to 4 sec. Maintenance action must be performed prior to flight if this time is reduced to 1 sec. (at least one of the accumulators is faulty).</li> </ul> </li> </ul> <p style="text-align: right;">APPROVED      <b>B   G   E</b>      4 - 9</p>

Figure 9 - ARIEL 2D (FAA/ANAC/IAC-AR)



Before	After
<p>FLIGHT MANUAL AS 350 B3e</p> <p><b>4.8 ENGINE AND ROTOR SHUTDOWN</b></p> <ol style="list-style-type: none"> <li>1. Cyclic stick.....NEUTRAL.</li> <li>2. Collective pitch.....LOCK.</li> <li>3. Twist grip.....IDLE position.</li> <li>4. Engine oil cooling.....WAIT for 30 sec.</li> <li>5. [PITOT], [HORN], landing light.....OFF.</li> <li>6. Non-required systems, [AVIONIC] or [AVIONICS]*.....OFF.</li> <li>7. Engine starting selector.....OFF position.</li> <li>8. [GENE].....OFF.</li> </ol> <p>At NR ≤ 170 rpm (for high wind conditions) or NR ≤ 140 rpm (normal conditions).</p> <ol style="list-style-type: none"> <li>9. Rotor brake.....APPLY.</li> </ol> <ul style="list-style-type: none"> <li>• When rotor is stopped:</li> </ul> <ol style="list-style-type: none"> <li>10. [ANGOL TST] or [ANGOL]*.....OFF.</li> <li>11. [ACCU TST].....ON for 2 sec., re-align pedals if necessary.</li> </ol> <ul style="list-style-type: none"> <li>• <b>BEFORE LEAVING HELICOPTER</b></li> </ul> <ol style="list-style-type: none"> <li>12. VEMD.....CHECK of Flight Report page data:             <ul style="list-style-type: none"> <li>• Operating time (counted from N1 &gt; 60 % after start, to N1 &lt; 50 % at engine shutdown).</li> <li>• Usage counter.</li> <li>• N1 and N2 cycles.....CHECK (Indicated in white characters and above 0).</li> <li>• Advisory messages: <b>FAILURE DETECTED</b> or <b>OVERLIMIT DETECTED</b>.</li> </ul> </li> <li>13. [DCT/BAT], [BAT/EPU] or [BATT]*.....OFF.</li> <li>14. Pitot, static ports, air intake and exhaust covers, blade socks as required.</li> </ol> <p>(*) Post MOD 07-4280</p> <p>4 - 14                      Post MOD 07-5696                      EASA APPROVED REVISION 4</p>	<p>FLIGHT MANUAL AS 350 B3e</p> <p>Only the item 11 [ACCU TST] is modified as follows:</p> <div style="border: 2px solid red; padding: 5px;"> <p>11. Yaw load compensator check:</p> <ul style="list-style-type: none"> <li>- Right pedal moves forward without pilot input, or right pedal can be moved forward with low force.....CHECK.</li> <li>- [ACCU TST].....ON for 2 sec., then OFF.</li> <li>- Pedals can be re-centered and remain centered.....CHECK.</li> </ul> <p style="text-align: center;">NOTE</p> <p>Yaw load compensator maintenance action is required if, before activation of [ACCU TST] pushbutton, the right pedal cannot be moved forward with low force.</p> <p>The [ACCU TST] discharges the yaw load compensator. In order to repeat the check, it is necessary to re-pressurize the hydraulic system.</p> </div> <p>4 - 14                      <span style="border: 1px solid black; padding: 2px;">B   G   K</span>                      APPROVED</p>
<p style="text-align: center;">FLIGHT MANUAL AS 350 B3e</p> <p>• <b>RUN UP CHECK</b> (para. 4.3.3 of the basic flight manual): Replace item 1 by the following:</p> <div style="border: 2px solid red; padding: 5px;"> <p>1. Hydraulic checks:</p> <ul style="list-style-type: none"> <li>• Servo distributors seizure check:               <ul style="list-style-type: none"> <li>- [SERVO TST].....PRESS: <b>SERVO</b>.</li> </ul> </li> <li>• Yaw servo hydraulic check:               <ul style="list-style-type: none"> <li>- Yaw servo hydraulic switch (collective grip).....OFF, yaw pedal loads should remain low (yaw load compensator effect). Check <b>HYD2</b> flashes.</li> <li>- [ACCU TST].....ON, check that loads are felt on the yaw pedals.</li> <li>- [ACCU TST].....RESET in OFF position.</li> </ul> </li> <li>Yaw servo hydraulic switch (collective grip).....ON, check no loads are felt on yaw pedals. Check <b>HYD2</b>.</li> </ul> </div> <p>The rest of the basic flight manual procedure remains applicable.</p> <p><b>5 PERFORMANCE</b></p> <p>The performance data specified in the basic flight manual and in the flight manual supplements remain applicable.</p> <p>APPROVED REVISION 2                      Post MOD 07-4622                      SUP.23-9</p>	<p style="text-align: center;">FLIGHT MANUAL AS 350 B3e</p> <p>Only the item 1 is modified as follows:</p> <div style="border: 2px solid red; padding: 5px;"> <p>1. Hydraulic checks:</p> <ul style="list-style-type: none"> <li>• Servo distributors seizure check:               <ul style="list-style-type: none"> <li>- [SERVO TST].....PRESS: <b>SERVO</b>.</li> </ul> </li> </ul> </div> <p>APPROVED                      <span style="border: 1px solid black; padding: 2px;">B   G   K</span>                      SUP.23-9</p>

Figure 10 - ARRIEL 2D (FAA/ANAC/IAC-AR)

**4. APPENDIX**
**4.A. FLIGHT MANUAL - ARRIEL 2B**

FLIGHT MANUAL

Only the Item " Hydraulic checks ", is modified as follows:

- Hydraulic checks:

**CAUTION** : IF NOT LOCKED, THE COLLECTIVE PITCH WILL COME UP WHEN THE ACCUMULATORS ARE DEPLETED OR WHEN THE HYDRAULIC CUTOFF SWITCH IS SET TO "OFF".

Accumulator check:

- . Collective pitch - - - - - Checked correctly locked.
- . "HYD TEST" (TEST HYDR) pushbutton - Depress on center console.
- . Warning panel- - - - - Check "HYDR" light blinks ("HYDR" steady POST MOD 07-3317)
- . Collective and cyclic controls - - - Hands on.
- . Move the cyclic control 2 or 3 times on each axes (+/- 10% of travel) and check for accumulator hydraulic assistance on pitch and roll (no control loads).
- . "HYD TEST" (TEST HYDR) pushbutton - Set back in up position.
- . Warning panel- - - - - Check "HYDR" light goes off.

Hydraulic pressure isolation check:

- . Collective pitch - - - - - Checked correctly locked.
- . Hydraulic cut-off switch - - - - - Set to OFF on collective pitch.
- . Warning panel- - - - - Check "HYDR" light on.
- . Check that forces are felt immediately and that cyclic can be displaced in pitch and roll with normal feedback force.
- . Hydraulic cut-off switch - - - - - Set to ON.
- . Warning panel - - - - - Check "HYDR" light goes off in 3 to 4 sec. Maintenance action must be performed prior to flight if this time is 1 second or less (at least one of the accumulators may be defective).

Approved

350 B3

**4.1**  
 Page 5

4.A. FLIGHT MANUAL - ARRIEL 2B (continued)

FLIGHT MANUAL

Only the Item "When the rotors are completely stopped" paragraph 10 AFTER LANDING, is modified as follows:

- When the rotors are completely stopped:

Yaw load compensator check:

- . Check that right pedal moves forward without pilot input, or right pedal can be moved forward with low force.
- . Press the "HYD TEST" (TEST HYDR) push-button for 1 to 2 sec., then release.
- . Check that pedals can be re-centered and remain centered.

NOTE : Yaw load compensator maintenance action is required if, before activation of "HYD TEST" (TEST HYDR) push-button, the right pedal cannot be moved forward with low force.

The "HYD TEST" (TEST HYDR) discharges the yaw load compensator. In order to repeat the check, it is necessary to re-pressurize the hydraulic system.

Approved

350 B3

**4.1**  
Page 8

4.A. FLIGHT MANUAL - ARRIEL 2B (continued)

FLIGHT MANUAL

Only the Item "Hydraulic checks", is modified as follows:

Hydraulic checks:

- Servo distributors seizure check:

. "SERVO TEST" pushbutton - - - PRESS; "SERVO" light comes on.

Approved

350 B3

**SUP.23**  
Page 4

**4.B. FLIGHT MANUAL - ARRIEL 2B1**

**FLIGHT MANUAL**  
**AS 350 B3 Arriel 2B1**

Only the item 4 is modified as follows:

4. Hydraulic cut-off switch (collective pitch)..... ON.

4 - 6

**APPROVED**

**4.B. FLIGHT MANUAL - ARRIEL 2B1 (continued)**

FLIGHT MANUAL  
AS 350 B3 Arriel 2B1

Only the item 1 is modified as follows:

1. Hydraulic checks:

**CAUTION**

If not locked, the collective pitch lever will move up when the accumulators are depleted or when the hydraulic cut-off switch on the collective is set to OFF.

• Accumulator checks:

- Collective pitch ..... CHECK correctly locked.
- [HYD TEST] or [ACCU TST] ..... ON.
- CWP ..... CHECK **HYDR** flashes.  
(**HYDR** steady PRE MOD 07-3317)
- Collective / cyclic controls ..... HANDS on.
- Move the cyclic control 2 or 3 times on each axis (+/- 10% of travel) and check for accumulator hydraulic assistance on pitch and roll (no control loads).
- [HYD TEST] or [ACCU TST] ..... RESET to OFF position.
- CWP ..... CHECK **HYDR**.

• Hydraulic cut-off test:

- Collective pitch ..... CHECK correctly locked.
- Hydraulic cut-off switch (collective pitch) ..... OFF.
- CWP ..... CHECK **HYDR**.
- Check that loads are felt immediately and that cyclic stick can be moved in pitch and roll with normal feedback loads.
- Hydraulic cut-off switch (collective pitch) ..... ON.
- CWP ..... CHECK **HYDR** after 3 to 4 sec.  
Maintenance action must be performed prior to flight if this time is reduced to 1 sec. (at least one of the accumulators is faulty).

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**4.B. FLIGHT MANUAL - ARRIEL 2B1 (continued)**

**FLIGHT MANUAL**  
**AS 350 B3 Arriel 2B1**

Only the item 11 [HYD TEST] or [ACCU TST] is modified as follows:

11. Yaw load compensator check:

- Right pedal moves forward without pilot input, or right pedal can be moved forward with low force ..... CHECK.
- [HYD TEST] or [ACCU TST] ..... ON for 2 sec., then OFF.
- Pedals can be re-centered and remain centered ..... CHECK.

**NOTE**

Yaw load compensator maintenance action is required if, before activation of [HYD TEST] or [ACCU TST] pushbutton, the right pedal cannot be moved forward with low force.

The [HYD TEST] or [ACCU TST] discharges the yaw load compensator. In order to repeat the check, it is necessary to re-pressurize the hydraulic system.

4.B. FLIGHT MANUAL - ARRIEL 2B1 (continued)

FLIGHT MANUAL  
AS 350 B3 Arriel 2B1

Only the item 2 is modified as follows:

2. Hydraulic checks:

- Servo distributors seizure check:

- [SERVO TEST] or  
[SERVO TST].....PRESS: **SERVO** .

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9-23-9



4.C. FLIGHT MANUAL - ARRIEL 2D - EASA

FLIGHT MANUAL

Only the item 4 is modified as follows:

4. Hydraulic cut-off switch (collective pitch) ..... ON

APPROVED

350 B3e

**A**

**4.3**

Page 1

**4.C. FLIGHT MANUAL - ARRIEL 2D - EASA (continued)**

FLIGHT MANUAL

Only the item 1 is modified as follows:

## 1. Hydraulic checks:

**CAUTION**

If not locked, the collective pitch lever will move up when the accumulators are depleted or when the hydraulic cut-off switch on the collective pitch is set to off.

 • Accumulator checks:

- **Collective pitch** ..... **CHECK correctly locked**
- **[ACCU TST]** ..... **ON**
- **CWP** ..... **CHECK **HYDR** flashes**
- **Collective / cyclic controls** ..... **HANDS on**
- Move the cyclic stick 2 or 3 times on each axis ( $\pm 10\%$  of total travel) and check for accumulator hydraulic assistance on pitch and roll (no control loads).
- **[ACCU TST]** ..... **RESET to OFF position**
- **CWP** ..... **CHECK **HYDR****

 • Hydraulic cut-off test:

- **Collective pitch** ..... **CHECK correctly locked**
- **Hydraulic cut-off switch (collective pitch)** ..... **OFF**
- **CWP** ..... **CHECK **HYDR****
- Check that loads are felt immediately and that cyclic stick can be moved in pitch and roll with normal feedback loads.
- **Hydraulic cut-off switch (collective pitch)** ..... **ON**
- **CWP** ..... **CHECK **HYDR** after 3 to 4 sec.**

Maintenance action must be performed prior to flight if this time is reduced to 1 sec. (at least one of the accumulators is faulty)

APPROVED

350 B3e

A

**4.3**

Page 4

4.C. FLIGHT MANUAL - ARRIEL 2D - EASA (continued)

FLIGHT MANUAL

Only the tem 11 is modified as follows:

11. Yaw load compensator check:

- Right pedal moves forward without pilot input, or right pedal can be moved forward with low force .....CHECK.
- [ACCU TST] .....ON for 2 sec., then OFF.
- Pedals can be re-centered and remain centered.....CHECK.

**NOTE**

Yaw load compensator maintenance action is required if, before activation of [ACCU TST] pushbutton, the right pedal cannot be moved forward with low force.

The [ACCU TST] discharges the yaw load compensator. In order to repeat the check, it is necessary to re-pressurize the hydraulic system.

APPROVED

350 B3e

A

**4.6**

Page 1

4.C. FLIGHT MANUAL - ARRIEL 2D - EASA (continued)

FLIGHT MANUAL

Only the item 1 is modified as follows:

1. Hydraulic checks:

- Servo distributors seizure check:

- [SERVO TST].....PRESS: **SERVO**

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350 B3e

A

**SUP.23**

Page 8

4.D. FLIGHT MANUAL - ARRIEL 2D - FAA/ANAC/IAC-AR

FLIGHT MANUAL  
AS 350 B3e

Only the item 4 is modified as follows:

4. Hydraulic cut-off switch (collective pitch)..... ON

4 - 6

**B G K**

APPROVED

**4.D. FLIGHT MANUAL - ARRIEL 2D - FAA/ANAC/IAC-AR (continued)**

FLIGHT MANUAL  
AS 350 B3e

Only the item 1 is modified as follows:

1. Hydraulic checks:

**CAUTION**

If not locked, the collective pitch lever will move up when the accumulators are depleted or when the hydraulic cut-off switch on the collective is set to OFF.

• Accumulator checks:

- Collective pitch ..... CHECK correctly locked.
- [ACCU TST] ..... ON.
- CWP ..... CHECK **HYDR** flashes.
- Collective / cyclic controls ..... HANDS on.
- Move the cyclic control 2 or 3 times on each axis (+/- 10% of total travel) and check for accumulator hydraulic assistance on pitch and roll (no control loads).
- [ACCU TST] ..... RESET to OFF position.
- CWP ..... CHECK **HYDR**.

• Hydraulic cut-off test:

- Collective pitch ..... CHECK correctly locked.
- Hydraulic cut-off switch (collective pitch) ..... OFF.
- CWP ..... CHECK **HYDR**.
- Check that loads are felt immediately and that cyclic stick can be moved in pitch and roll with normal feedback loads.
- Hydraulic cut-off switch (collective pitch) ..... ON.
- CWP ..... CHECK **HYDR** after 3 to 4 sec.  
Maintenance action must be performed prior to flight if this time is reduced to 1 sec. (at least one of the accumulators is faulty).

APPROVED

B | G | K

4 - 9

4.D. FLIGHT MANUAL - ARRIEL 2D - FAA/ANAC/IAC-AR (continued)

**FLIGHT MANUAL**  
AS 350 B3e

Only the item 11 [ACCU TST] is modified as follows:

11. Yaw load compensator check:

- Right pedal moves forward without pilot input, or right pedal can be moved forward with low force ..... CHECK.
- [ACCU TST] ..... ON for 2 sec., then OFF.
- Pedals can be re-centered and remain centered ..... CHECK.

**NOTE**

Yaw load compensator maintenance action is required if, before activation of [ACCU TST] pushbutton, the right pedal cannot be moved forward with low force.

The [ACCU TST] discharges the yaw load compensator. In order to repeat the check, it is necessary to re-pressurize the hydraulic system.

4 - 14

**B G K**

**APPROVED**

4.D. FLIGHT MANUAL - ARRIEL 2D - FAA/ANAC/IAC-AR (continued)

FLIGHT MANUAL  
AS 350 B3e

Only the item 1 is modified as follows:

1. Hydraulic checks:

- Servo distributors seizure check:
  - [SERVO TST] .....PRESS: **SERVO** .

APPROVED

B | G | K

SUP.23-9