



# MAINTENANCE PROGRAM

## PILATUS PORTER PC6

### Appendix – HAWKER BATTERY ROUTINE CAPACITY INSPECTION

#### HAWKER BATTERY ROUTINE CAPACITY INSPECTION SHEET OF PILATUS PORTER PC6

- Each Listed Inspection Item is to be performed in accordance with the Hawker document F2602-0032 (24-32-35) Sealed Lead Acid Battery PN 9750W0538 (40Ah Battery only).
- This Battery never needs Electrolyte Replenishment

Reg. Mark : PK - Date :

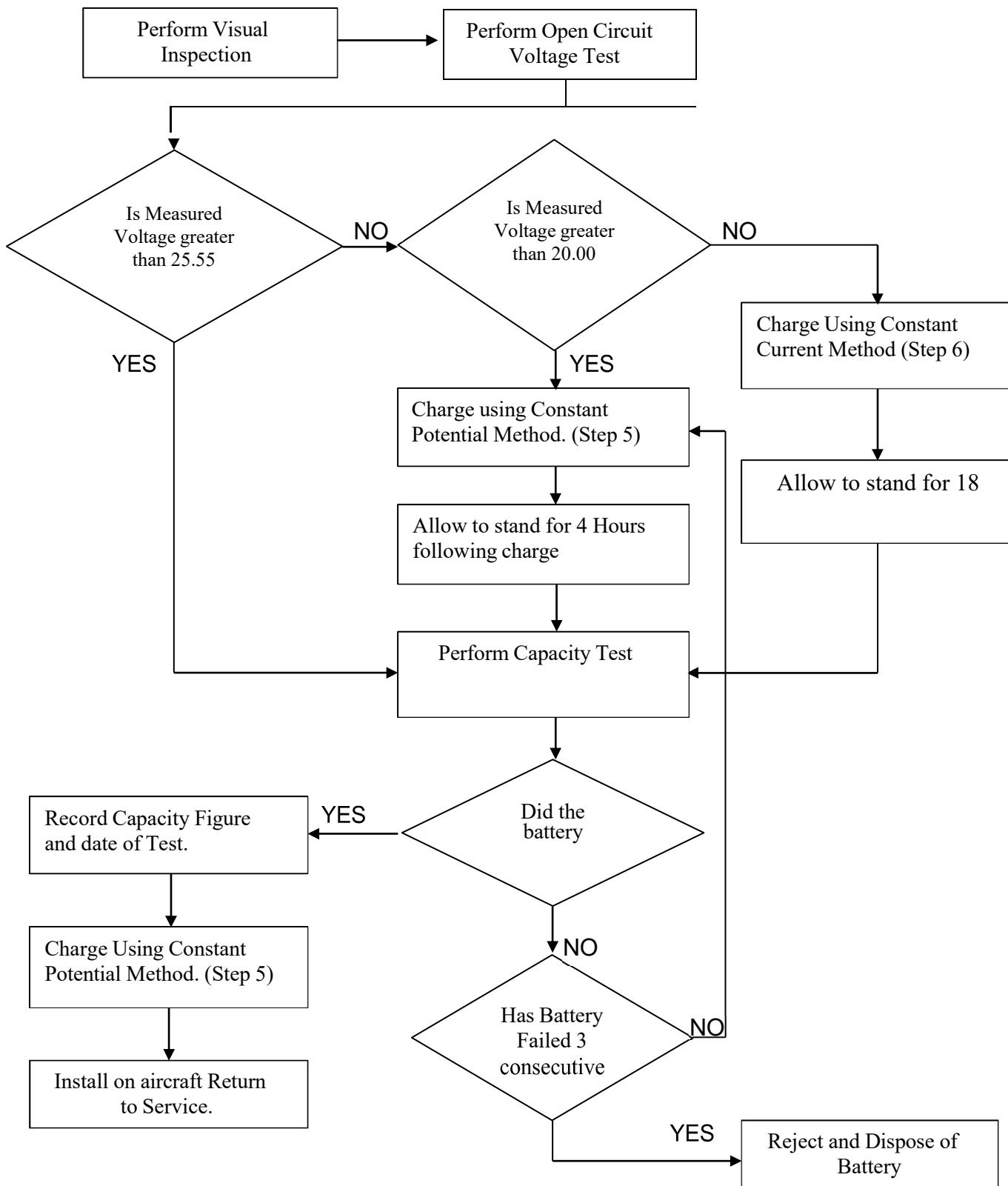
MSN : Station :

TSN / CSN : WO No. :

NO	TASK	SIGNATURE	
		SIGN	STAMP
1	<p><b><u>Visual Inspection</u></b></p> <p><b><u>WARNING</u></b></p> <p>Battery short circuit current may exceed 2600 amperes. All tools must be insulated. Care must be taken with all items of metal to include clothing items such as buckles, zippers and key chains, jewelry such as rings and necklaces. Failure to heed this warning could result in serious injury or loss of life.</p> <p>Visually inspect the exterior of the battery casing for obvious signs of damage (cracks dents, corrosion). Examine the battery terminals and the thermistor connector for signs of damage, corrosion and water or dirt ingress. Clean as necessary.</p>		
2	<p><b><u>Open Circuit Voltage Test.</u></b></p> <p>Note: This test can be performed on the aircraft provided the following conditions are met.</p> <p>Battery Open Circuit Voltage (OCV) checks shall be performed only after the battery has been removed from any connected load or charging source for at least 2 hours at + / - 23degrees C. If this cannot be achieved remove battery to another location off the aircraft to perform this test.</p> <p>Measure the battery's Voltage from the battery J1 DC Power Connector Between POS (+) and NEG (-) terminals using a digital voltmeter. No Loads or any other connections should be applied to the battery during this test.</p> <p><b>Record the battery OCV _____ Volts</b></p> <p><b><u>IMPORTANT</u></b></p> <p>Batteries indicating less than 25.5 Volts must not be installed on aircraft.</p>		

**Test Procedure Figure 103**

Figure 103 shows the flowchart used to determine the battery's remaining capacity during PERIODIC INSPECTION or SCHEDULED battery checks ONLY.





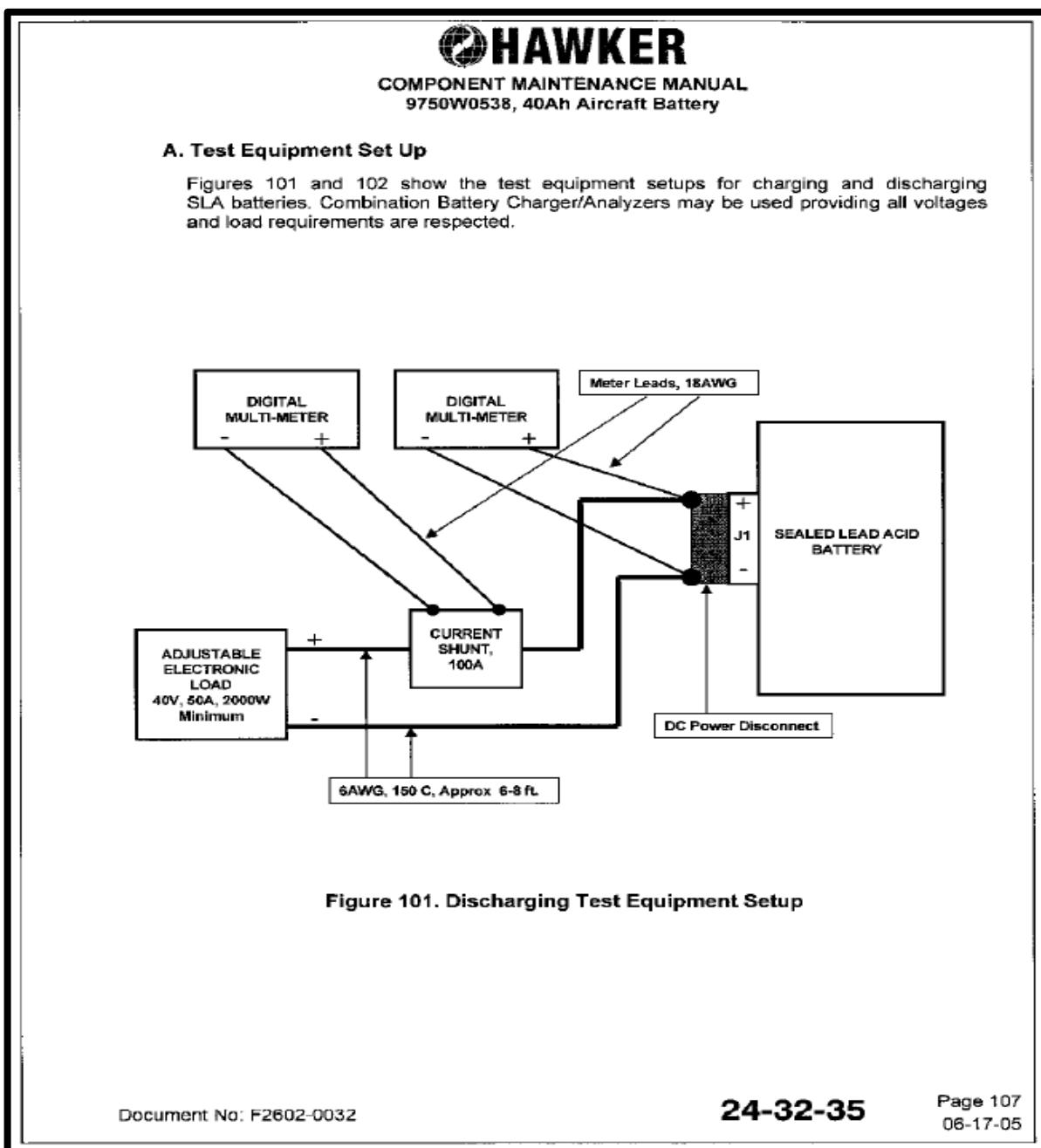
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3	<p>Is the Measured Voltage Greater than <b>25.55</b> VDC? <b>YES / NO</b></p> <p>If Yes Proceed to Perform Capacity Test. (Step 4)</p> <p>If Measured Voltage is between <b>25.55</b> and <b>20.00</b> VDC Charge Battery Using <u>CONSTANT POTENTIAL METHOD</u>. (Step 5) <b>YES / NO</b></p> <p>If Measured Voltage is less than 20.00 VDC Charge Battery using <u>CONSTANT CURRENT METHOD</u>. (Step 6) <b>YES / NO</b></p>		
4	<p><b><u>CAPACITY CHECK TEST. (OFF WING)</u></b></p> <p>Note: To ensure accurate battery capacity readings when the battery is removed from the aircraft allow the battery to stabilize at 23 Degree C +/- 5.</p> <p>The Capacity Test accurately determines the continued serviceability of the battery and its ability to retain charge.</p> <p>Ensure that the battery has been fully charged and allow it to stand with no further charging or discharging activity for at least the minimum required time period as outlined in Figure 103. (4 Hours or 18 hours as appropriate).</p> <p>Set the electronic load to zero amperes. After the required standing time verify the ambient temperature is at 23 Degree C +/- 5.</p> <p>Connect up the battery to the Test Set Up shown in figure 101, Discharge Equipment Test Set Up.</p> <p>Load the battery to 40 amperes using the electronic in a CONSTANT CURRENT MODE. Simultaneously begin timing the discharge cycle using a stop watch or another clock.</p> <p>Allow the battery to discharge until the measured terminal voltage drops to 18 VDC, then terminate the discharge test.</p> <p><b>Record the amount of time. _____ Minutes.</b></p> <p>If equal or greater than 54 Minutes then Remaining capacity if greater than 90 Percent, Next inspection due in Six months / 1500 Hrs</p>		

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5	<p><b><u>CAPACITY CHECK TEST. (OFF WING)</u></b></p> <p>If greater than 48 Minutes but less than 54 Minutes Remaining Capacity is between 90 and 81 Percent. <b>Next inspection due in three months</b></p> <p><b>If 48 Minutes or less Reject the Battery it has failed the Capacity test.</b></p>		





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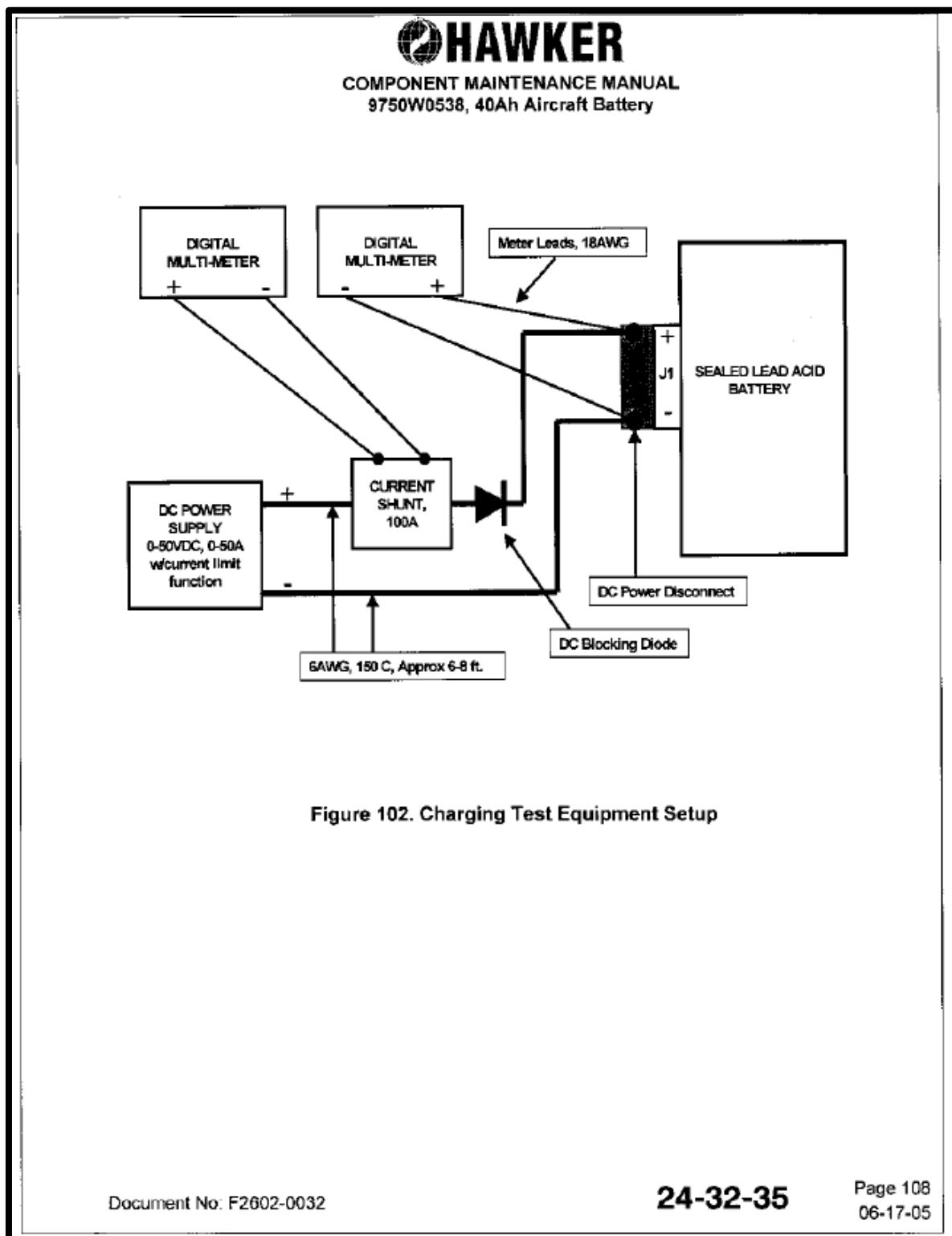
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NO	TASK	SIGNATURE	
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6	<p><b><u>Charging using CONSTANT POTENTIAL METHOD. (OFF WING)</u></b></p> <p>Constant Potential Charging Method is the preferred method of charging the battery and is used for normal recharging of batteries that have NOT been subjected to deep discharge (an OCV less than 18 VDC).</p> <p>Prior to connecting the battery, ensure that the power supply is OFF, set up the equipment as shown in Figure 102, Charging Test Equipment Set up.</p> <p>Turn on the DC Power Supply. Set the power supply's current limit to the value shown in Table 103 that corresponds to the desired charge time. Set the power supply's output voltage to 29.0 +/- 0.3 VDC.</p> <p>Connect the battery to the Test Set Up and turn the power supply on. Charge the battery until the charge current drops below 0.5 amperes.</p> <p>*Alternatively, the battery may be charged for a fixed period of time that is dependent on current limit set point of the power supply as indicated in Table 103 Below (e.g.10 Amperes for 8 Hours duration).</p> <p>When the charge current drops below 0.5 amperes, *or the minimum charge time specified below has been satisfied, remove the battery from the test set up. Allow it to stand with no further charging or discharging activity for at least 4 hours before conducting any further tests.</p>		

\*Table 103. Current Limit Minimum Charge Time

Current Limit Set Point	Minimum Time Required
40 amperes and above	< 5 Hours
20 amperes	7 Hours
10 amperes	8 Hours



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7	<p><b><u>Charging using CONSTANT POTENTIAL METHOD. (OFF WING)</u></b></p> <p><b><u>Second Charge</u></b> Only Required if Open Voltage Measured was Between 25.55 VDC and 20.00 VDC. See Figure 103 Flowchart.</p> <p>If not applicable identify the columns N/A.</p> <p>Constant Potential Charging Method is the preferred method of charging the battery and is used for normal recharging of batteries that have NOT been subjected to deep discharge (an OCV less than 18 VDC).</p> <p>Prior to connecting the battery, ensure that the power supply is OFF, set up the equipment as shown in Figure 102, Charging Test Equipment Set up.</p> <p>Turn on the DC Power Supply. Set the power supply's current limit to the value shown in Table 103 that corresponds to the desired charge time. Set the power supply's output voltage to 29.0 +/- 0.3 VDC.</p> <p>Connect the battery to the Test Set Up and turn the power supply on. Charge the battery until the charge current drops below 0.5 amperes.</p> <p>*Alternatively, the battery may be charged for a fixed period of time that is dependent on current limit set point of the power supply as indicated in Table 103 Below (e.g.10 Amperes for 8 Hours duration).</p> <p>When the charge current drops below 0.5 amperes, *or the minimum charge time specified below has been satisfied, remove the battery from the test set up. Allow it to stand with no further charging or discharging activity for at least 4 hours before conducting any further tests.</p>		



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8	<p><b>ONLY If during Open Voltage Circuit Test the Voltage measured is less than 20.00VDC then perform the following procedure.</b></p> <p><b>Charging using CONSTANT CURRENT METHOD (OFF WING)</b></p> <p>Constant current charging is NOT the preferred charging method of charging the battery and is generally only used for charging batteries that have been subject to deep discharge (OCV less than 20.00).</p> <p>Prior to connecting the battery, ensure that the power supply is OFF, set up the equipment as shown in Figure 102, Charging Test Equipment Set up.</p> <p><b>Record the Battery OCV _____ Volts. (Test reading).</b></p> <p>Turn on the DC power supply.</p> <p>Set the power supply's current limit to 3.8 +/- 0.5 amperes Set the power supply's output voltage to 40.0 +/- VDC</p> <p>Turn the power supply off.</p> <p>Connect the battery to the Test Set Up and turn the power supply on. Charge the battery at 3.8 amperes for 30 Minutes.</p> <p>After 30 Minutes with the battery still charging, measure the battery terminal voltage (charge-on voltage), compare the reading with the 'Test reading' that was performed just prior to the Constant Current Charging sequence.</p> <p><b>Record the charge – on Voltage _____ Volts</b></p>		
9	<p>This step determines if the battery has sulphated to the point of being unrecoverable if the on-charge voltage is greater than 29.0 VDC, and the voltage at the start was less than or equal to 22.5 VDC.</p> <p>STOP the charge and reject the battery.</p> <p><b>BATTERY REJECTED?</b>      <b>YES / NO</b></p>		
10	<p>If the answer to 7 above is NO then charge the battery for 13 Hours.</p> <p>During the constant – current charge, the battery terminal voltage may rise as high as 35 VDC, before the voltage will stabilize at approx. 31 VDC. This occurrence is normal and will not degrade the battery.</p>		



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11	After 13 hours remove the battery from the Test Set Up. Allow it to stand with no further charging or discharging activity for at least 18 hours, before conducting further tests.		
12	Make the appropriate entry in the Inspection Work Package/ additional worksheet, that Main Battery Capacity check has been performed.  Attach a serviceable label with date of capacity check and store in accordance with Hawker document F2602-0032 (24-32-35) Sealed Lead Acid Battery PN 9750W0538 procedures, until returned to service.		

PERSONNEL PARTICIPATING IN THIS INSPECTION			
NAME	POSITION	SIGNATURE	LICENSE NUMBER

### RETURN TO SERVICE

The work recorded above has been carried out in accordance with the requirements of the Civil Aviation Safety Regulation for the time being in force and in that respect the aircraft is consider fit for Release to Service.

Name : \_\_\_\_\_ Stamp : \_\_\_\_\_

Signature : \_\_\_\_\_ Place/Date : \_\_\_\_\_