

Project No: **BDHRN002**Job Card No **0152**

Notif.No.: 10049201

Activity: **1006**

Rev No: 20000622

Model.: F900EX

Sheet 1 of 1

A/C Regn: **D-AHRN**

Serial No.: 096

Type: F900EX

Starting Phase: Functions

Starting Work Centre: MTX AVIO DEPT

Job Description: **OPC Irs 1 Battery (I12fp)**

ETOPS A/C: No

RVSM A/C: No

Warranty: -

ATA: 24

Work Center	
MTX AVIO DEPT	

**Zone: 200****Access Required for this task:**

210A

## Corrective Action

0001	<b>Task carried out in accordance with the attached Customer Card that quotes the Operator code detailed below.</b>					  Order: 80069296 Operation: 0010 Phase: Functions - scheduling activity Work Center: MTX AVIO DEPT
	Accomplished		Inspected			
	Pers. No.	Date	Pers. No.	Date		
	Stamp		Stamp			

Completed & Confirmed on SAP IAW MOE 2.13.

**Defect Card Raised**

## Components Removed/Installed

	Part Number	Part Name	S/N	Location	Comm. Off/On
OFF					
ON					
OFF					
ON					
OFF					
ON					
OFF					
ON					

Occurance Report Raised? **YES** ☐

Operations Above &amp; Notifications Completed IAW MOE 2.13.

OEM Code: 24-32-09-710-802-02

Operator Code: 24-32-09-710-802-02

Form No: JA-SAP-MTX-002

Printed by: ADAMOVIC G



Printed: 03.09.2012

13:34:17

Print No: 1

Operator: **HERON AVIATION**

Work Card No.: **24.220**

Serial No.: **096**

Model: **FALCON 900EX**

Reg No.: **D-AHRN**

Workorder No.: \_\_\_\_\_

Due At	Date	A/C HRS	AFL	APH			
Accomplished	<b>27-JAN-2013</b>						

TECHNICIAN SIGNATURE: \_\_\_\_\_ KIND OF CERTIFICATE & NO.: \_\_\_\_\_

INSPECTED BY: \_\_\_\_\_ KIND OF CERTIFICATE & NO.: \_\_\_\_\_

243852	<input type="checkbox"/> NO. 1 IRS STANDBY BATTERY	GENERIC NO REF
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REASON REMOVED: (CHECK ONE)	<input type="checkbox"/> TIME EXPIRED	<input type="checkbox"/> FAILURE	<input type="checkbox"/> WORN	<input type="checkbox"/> LOANER	<input type="checkbox"/> SCHEDULING CONV	<input type="checkbox"/> MOD/UPGRADE	<input type="checkbox"/> SERVICE	<input type="checkbox"/> ENGINE CHANGE	<input type="checkbox"/> TIRE CHANGE	<input type="checkbox"/> SWAP/TRBLE SHOOT	<input type="checkbox"/> DAMAGED	<input type="checkbox"/> UNKNOWN
--------------------------------	---------------------------------------	----------------------------------	-------------------------------	---------------------------------	--	--------------------------------------	----------------------------------	--	--------------------------------------	---	----------------------------------	----------------------------------

*If removed P/N & S/N information is incorrect please provide details below.*

REMOVED P/N	100-0540-02		S/N	1701		LABOR-HRS	
INSTALLED P/N			S/N			PART COST\$	
INSTALLED TSN	MOS		INSTALLED TSO	MOS		TIME SINCE REPAIR	MOS
	HRS			HRS			HRS
	LDGS			LDGS		WARRANTY TIME REMAINING	LDGS
						TECH:	INSP:

REMARKS : \_\_\_\_\_

Note: INITIAL THE SERVICE TASKS BELOW WHICH WERE ACCOMPLISHED DURING CHANGE. IF TASKS WERE NOT ACCOMPLISHED, RECORD TIME ACCRUED SINCE TASK WAS LAST ACCOMPLISHED OR CHECK CONTINUE TIME (CT).

TECH	INSP	LABOR-HRS HRS.MINS	TIME ACCRUED	CONTINUE TIME
------	------	-----------------------	-----------------	------------------

24-32-09-610-801-02 SERVICE NO. 1 IRS STANDBY BATTERY (SAFT NICKEL-CADMIUM BATTERY ONLY)

☐

REMARKS : \_\_\_\_\_

AMM 24-32-09-610-801

>24-32-09-710-802-02 OPERATIONAL TEST NO. 1 IRS STANDBY BATTERY (SECURAPLANE XL245 TYPE BATTERY)

☐

REMARKS : \_\_\_\_\_

AMM 24-32-09-710-802 .

24-32-09-960-802-02 DISCARD NO. 1 IRS STANDBY BATTERY (SECURAPLANE XL245 TYPE BATTERY)

☐

REMARKS : \_\_\_\_\_

AMM 24-32-09-960-802,GEN LEVEL TEST SWITCH AT LEAST EVERY 90 DAYS.  
ERIC NO REF

Operator: **HERON AVIATION**Work Card No.: **24.220**Serial No.: **096**Model: **FALCON 900EX**Reg No.: **D-AHRN**

Workorder No.: \_\_\_\_\_

**ACCESS PANEL SUMMARIES****210A LH UPPER DOORS DOOR**

24-32-09-710-802-02 OPERATIONAL TEST NO. 1 IRS STANDBY BATTERY (SECURAPLANE XL245 TYPE BATTERY)

**AREA SUMMARIES****F2 NOSE CONE**

243852 NO. 1 IRS STANDBY BATTERY

24-32-09-710-802-02 OPERATIONAL TEST NO. 1 IRS STANDBY BATTERY (SECURAPLANE XL245 TYPE BATTERY)

24-32-09-960-802-02 DISCARD NO. 1 IRS STANDBY BATTERY (SECURAPLANE XL245 TYPE BATTERY)

**SOURCE SUMMARIES****956 MPD 05-20-24 PAGE NO.:PAGE 5/6 REF: 24-30 DC GENERATION DATE: MAR 09/2012 2**

24-32-09-610-801-02 SERVICE NO. 1 IRS STANDBY BATTERY (SAFT NICKEL-CADMIUM BATTERY ONLY)

24-32-09-710-802-02 OPERATIONAL TEST NO. 1 IRS STANDBY BATTERY (SECURAPLANE XL245 TYPE BATTERY)

**956 MPD 05-20-24 PAGE NO.:PAGE 6/6 REF: 24-30 DC GENERATION DATE: MAR 09/2012 2**

24-32-09-960-802-02 DISCARD NO. 1 IRS STANDBY BATTERY (SECURAPLANE XL245 TYPE BATTERY)

## FALCON 900EX AIRCRAFT MAINTENANCE MANUAL

### TASK 24-32-09-610-801

## SERVICING OF "SAFT" NICKEL-CADMIUM STAND-BY BATTERIES

**WARNING:** SERIOUS PERSONNEL INJURIES CAN RESULT FROM LACK OF ATTENTION AND CARE WHEN HANDLING AND MAINTAINING NICKEL-CADMIUM BATTERIES.  
 REMOVE RINGS, BRACELETS AND METAL WRIST WATCHES: ACCIDENTAL CONTACT OF SUCH METAL OBJECTS WITH OPPOSED POLARITY TERMINALS CAN MELT METAL AND SEVERELY BURN THE SKIN.  
 THE TOOLS USED FOR BATTERY MAINTENANCE MUST BE COATED WITH INSULATING TAPE.  
 A METAL TOOL FALLING ON THE BATTERY CAN CAUSE A SHORT-CIRCUIT.

**CAUTION:** HANDLE BATTERY CAREFULLY. THE BATTERIES CONTAIN NICKEL-CADMIUM WHICH IS DANGEROUS TO HEALTH.

### 1. OVERVIEW OF THE JOB

Operation codes:

- 24-32-09-610-801-01 stand-by horizon battery (**4FG**)
- 24-32-09-610-801-02 IRS 1 battery (**L12FP**)
- 24-32-09-610-801-03 IRS 2 battery (**R12FP**)
- 24-32-09-610-801-04 EID battery (**82FV**)
- 24-32-09-610-801-05 IRS 3 battery (**32FP**)

Perform this procedure to check the SAFT (Ni-Cd) 20VR4D and 20VRED series battery.

**NOTE 1:** For SAFT 20VR4D series battery with 20VRED series pack, P/N:

- 135687 Amdt H,
- 783543 Amdt D,
- 785229 Amdt E,

follow the discharging/charging instructions applicable to 20VRED batteries.

**NOTE 2:** If the results obtained during the following tests are not satisfactory, repeat the tests. If the results are still unsatisfactory, replace the battery pack (Refer to **TASK 24-32-09-960-801**).

**NOTE 3:** Perform the tests at an ambient temperature of  $23 \pm 5$  °C ( $73 \pm 9$  °F).

### 2. LOGISTICS

#### A. References

##### Reference

- **24-32-09-900-801**
- **24-32-09-960-801**

##### Designation

REMOVAL / INSTALLATION OF THE STAND-BY BATTERIES  
 REPLACEMENT OF "SAFT" NICKEL-CADMIUM STAND-BY  
 BATTERY PACKS

#### B. Tools and Ground Support Equipment

##### Reference

- **F7XC202000008**

##### Designation

TOOL BOX

##### Quantity

1

## FALCON 900EX AIRCRAFT MAINTENANCE MANUAL

- **TO-24-623** DC VOLTMETER (ACCURACY BETTER THAN 1%)
- **TO-24-622** DISCHARGE BENCH (Constant current 0-2 A)
- **TO-24-621** DC POWER SUPPLY (0-40 V DC, 0-2 A)

### C. Energy

- ELECTRICAL

### D. Miscellaneous

- SAFETY GLOVES
- PROTECTIVE GOGGLES
- PROTECTIVE APRON

## 3. PRELIMINARY STEPS

Refer to **fig. 1**

- A. Remove the applicable battery ( Refer to **TASK 24-32-09-900-801**, paragraph "Removal").
- B. If the battery is equipped with circuit breakers, check that these are engaged.
- C. First discharging
  - (1) Connect a voltmeter and a discharge bench to the power terminals (see table in paragraph "Check of Capacity").
  - (2) Discharge the battery:
    - For 20VR4D series battery at 4 A down to 20 V.
    - For 20VRED series battery at 4.5 A down to 20 V.

**NOTE:** The discharged battery voltage is measured at the power terminals
  - (3) Disconnect the discharge bench from the power terminals.

## 4. CHECK OF CAPACITY

- A. See tables below

**Table 1: SAFT 20VR4D series battery with 20VR4D series battery pack**

P/N	Rated capacity (C)	Battery charge constant current (I <sub>ch</sub> = 0.1C)	POWER TERMINAL			
			DISCHARGE		CHARGE	
			Positive	Negative	Positive	Negative
131835	4 Ah	0.4 A	A	B	C	B
135687						
783543						
785229			E			

Effectivity: SAFT (NI-CD) BATTERY  
Rev. Date: MAR 09/2012  
**24-32-09-610-801**

## FALCON 900EX AIRCRAFT MAINTENANCE MANUAL

**Table 2: SAFT 20VR4D series battery with 20VRED series battery pack**

P/N	Amdt	Rated capacity (C)	Battery charge constant current (I <sub>ch</sub> =0.1C)	POWER TERMINAL			
				DISCHARGE		CHARGE	
				Positive	Negative	Positive	Negative
135687	H	4.5 Ah	0.45 A	A	B	C	B
783543	D						
785229	E			E			

**Table 3: SAFT 20VRED series battery**

P/N	Rated capacity (C)	Battery charge constant current (I <sub>ch</sub> =0.1C)	POWER TERMINAL			
			DISCHARGE		CHARGE	
			Positive	Negative	Positive	Negative
804747	4.5 Ah	0.45 A	A	B	C	B
804748						
804749			E			

### B. Constant current charging

**CAUTION:** IF THE BATTERY IS CHARGED FOR MORE THAN 16 HOURS, THE LIFE OF THE CELLS DECREASES.

- (1) Charge the battery for 14 to 16 hours at a constant current (see tables).  
At the end of the charging, the voltage measured should be less than 31 V.
- (2) Disconnect the DC power supply and the voltmeter from the power terminals.
- (3) Wait 4 hours after the end of the charging.
- (4) Measure the voltage between the two half-batteries.  
The voltage difference between the two half-batteries should be less than 1 V.

### C. Check of operational capability

- (1) Connect a voltmeter and a discharge bench to the power terminals (see tables).  
**NOTE:** The discharged battery voltage is obtained at the power terminals
- (2) Discharge the battery:  
This discharging should be take at least 3 hours.
  - For 20VR4D series battery at 0.8 A down to 20 V.
  - For 20VRED series battery at 0.9 A down to 20 V.
- (3) Disconnect the discharge bench from the power terminals.

## **FALCON 900EX AIRCRAFT MAINTENANCE MANUAL**

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D. Constant voltage charging

- (1) Connect a DC power supply to the power terminals (see tables).

**CAUTION:** IF THE BATTERY IS CHARGED FOR MORE THAN 16 HOURS, THE LIFE OF THE CELLS DECREASES.

- (2) Charge the battery for 16 hours at 28.5VDC.

E. Constant current discharging

- (1) Connect a voltmeter and a discharge bench to the power terminals (see tables).

**NOTE:** The voltage is obtained at the power terminals

- (2) Discharge the battery at 5A (constant current) down to 20V.

This discharging must take 25 minutes at least.

- (3) Disconnect the discharge bench from the power terminals.

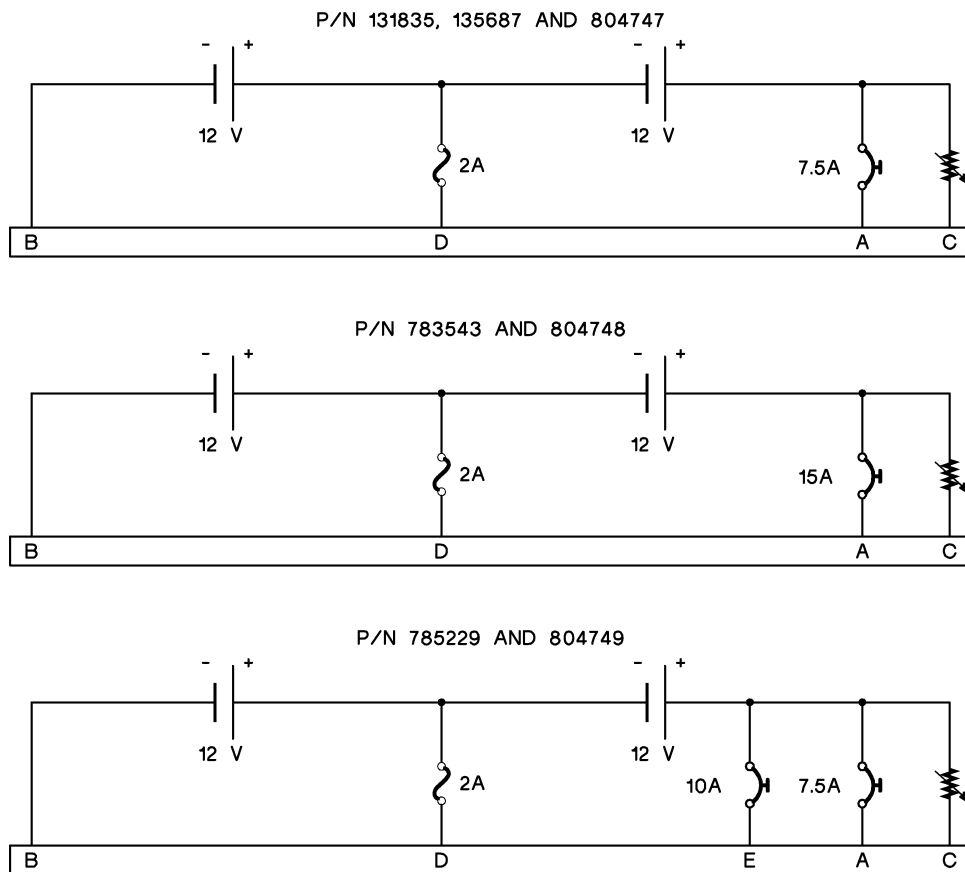
### **5. FINAL STEPS**

Refer to **fig. 1**

**CAUTION:** IF THE BATTERY IS CHARGED FOR MORE THAN 16 HOURS, THE LIFE OF THE CELLS DECREASES.

- A. Charge the battery for 14 to 16 hours at a constant current (see paragraph "Check of Capacity").
- B. Disconnect the DC power supply and the voltmeter from the power terminals.
- C. If the battery is equipped with circuit breakers, disengage them.
- D. Install the battery on the aircraft ( (Refer to **TASK 24-32-09-900-801**), paragraph "Installation").
- E. If the battery is equipped with circuit breakers, engage them.
- F. Perform an operational test of the battery ( (Refer to **TASK 24-32-09-900-801**), para. "Final steps").

## FALCON 900EX AIRCRAFT MAINTENANCE MANUAL



**Figure 1: STAND-BY BATTERY CONNECTION**



## FALCON 900EX AIRCRAFT MAINTENANCE MANUAL

### TASK 24-32-09-710-802 OPERATIONAL TEST OF "SECURAPLANE" XL245 TYPE STAND-BY BATTERIES

#### 1. OVERVIEW OF THE JOB

Operation codes:

- 24-32-09-710-802-01                      stand-by horizon battery (**4FG**)
- 24-32-09-710-802-02                      IRS 1 battery (**L12FP**)
- 24-32-09-710-802-03                      IRS 2 battery (**R12FP**)
- 24-32-09-710-802-04                      EID battery (**82FV**)
- 24-32-09-710-802-05                      IRS 3 battery (**32FP**)

#### 2. LOGISTICS

##### A. References

**Reference**

- **24-00-00-860-801**

**Designation**

ENERGIZATION / DE-ENERGIZATION OF THE AIRCRAFT

##### B. Energy

- ELECTRICAL

##### C. Access

**Reference**

- **210A**
- **113FZ**
- **113HZ**
- **PAX**

**Designation**

NOSE CONE  
COCKPIT FLOOR  
COCKPIT FLOOR  
PASSENGER DOOR

#### 3. PRELIMINARY STEPS

Refer to **fig. 1**

A. Open nose cone (**210A**) to gain access to the relevant avionics battery:

- IRS 1 battery (**L12FP**),
- IRS 2 battery (**R12FP**),
- EID battery (**82FV**),
- IRS 3 battery (**32FP**).

B. Remove the following floor panel to gain access to stand-by horizon battery (**4FG**):

- for A/C < 21 without SB F900EX-58 : floor panel (**113FZ**),
- for A/C ≥ 21 or A/C with SB F900EX-58 : floor panel (**113HZ**).

#### 4. OPERATIONAL TEST OF SECURAPLANE BATTERY (**4FG**), (**L12FP**), (**R12FP**), (**82FV**), (**32FP**)

Refer to **fig. 1**

Effectivity: A/C WITH M3203

Rev. Date: JUN 10/2011

**24-32-09-710-802**

page 1 / 6

## FALCON 900EX AIRCRAFT MAINTENANCE MANUAL

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**CAUTION:** THE BATTERY TEST MUST BE PERFORMED AT TEMPERATURE BETWEEN 20°C (68°F) AND 55°C (131°F).

**NOTE:** Make sure that the aircraft has not been energized for the two hours preceding the test. The longer the rest after charging, the more accurate the test. The optimum resting time before testing is between 8 and 24 hours.

- A. Press "ENERGY LEVEL TEST SWITCH" pushbutton (1).
- B. After 5 seconds:
  - (1) If green "BATTERY OK" indicator light (4) illuminates, go to paragraph "Final Steps".
  - (2) If red "BATTERY LOW" indicator light (3) illuminates:
    - (a) Connect the electrical ground power unit (Refer to **TASK 24-00-00-860-801**, paragraph "Connection of the Electrical Ground Power Unit").
    - (b) Energize the aircraft systems (Refer to **TASK 24-00-00-860-801**, paragraph "Energization with the Electrical Ground Power Unit").
    - (c) If green "CHARGER ON" indicator light (5) is illuminated:
      - 1 allow SECURAPLANE battery to be charged for 90 minutes,
      - 2 de-energize the aircraft systems (Refer to **TASK 24-00-00-860-801**, paragraph "De-energization with the Electrical Ground Power Unit"),
      - 3 leave SECURAPLANE battery at rest for 2 hours with the aircraft systems not energized,
      - 4 press again "ENERGY LEVEL TEST SWITCH" pushbutton (1) and, after 5 seconds:
        - a if green "BATTERY OK" indicator light (4) illuminates, then disconnect the electrical ground power unit (Refer to **TASK 24-00-00-860-801**, paragraph "Disconnection of the Electrical Ground Power Unit") and go to paragraph "Final Steps".
  - (d) If green "CHARGER ON" indicator light (5) is not illuminated:
    - 1 disengage and then engage circuit breaker (2),
    - 2 if green "CHARGER ON" indicator light (5) is illuminated, perform steps (2.2.B.3.a) through (2.2.B.3.d),
    - 3 if green "CHARGER ON" indicator light (5) remains extinguished:
      - a De-energize the aircraft systems (Refer to **TASK 24-00-00-860-801**, paragraph "De-energization with the Electrical Ground Power Unit"),
      - b Disconnect the electrical cable from SECURAPLANE battery,
      - c Energize the aircraft systems (Refer to **TASK 24-00-00-860-801**, paragraph "Energization with the Electrical Ground Power Unit").

Make sure that 28 V DC is present on pin C of the aircraft connector.

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**Effectivity:** A/C WITH M3203  
**Rev. Date:** JUN 10/2011  
**24-32-09-710-802**

## FALCON 900EX AIRCRAFT MAINTENANCE MANUAL

**CAUTION:** THE OLD BATTERY PACK MUST NOT BE DISPOSED OF IN A FIRE.

- d If the 28 V DC is not present on pin C of the aircraft connector, perform a troubleshoot on aircraft.
  - e If the 28 V DC is present on pin C of the aircraft connector, replace SECURAPLANE battery (Refer to [TASK 24-32-09-900-801](#)).
- NOTE:** Discard the old battery as per regulations relating to lead/acid batteries.
- f De-energize the aircraft systems (Refer to [TASK 24-00-00-860-801](#), paragraph "De-energization with the Electrical Ground Power Unit").
  - g Disconnect the electrical ground power unit (Refer to [TASK 24-00-00-860-801](#), paragraph "Disconnection of the Electrical Ground Power Unit").
  - h Connect the electrical cable to SECURAPLANE battery.

(e) Test (**fig. 2**)

Depending on the battery(ies) removed:

- 1 IRS 1 battery ([L12FP](#)):
  - Gain access to cockpit.
  - On overhead panel, press "AHS1" pushbutton ([L13FP](#)).
  - LH voltmeter ([L1PJ](#)) indicate the IRS 1 battery ([L12FP](#)) voltage ("BAT" green range).
- 2 IRS 2 battery ([R12FP](#)):
  - Gain access to cockpit.
  - On overhead panel, press "AHS2" pushbutton ([R13FP](#)).
  - RH voltmeter ([R1PJ](#)) indicate the IRS 2 battery ([R12FP](#)) voltage ("BAT" green range).
- 3 EID battery ([82FV](#)):
  - Gain access to cockpit.
  - On overhead panel, press "EIED" pushbutton ([83FV](#)).
  - LH voltmeter ([L1PJ](#)) indicate the EIED battery ([82FV](#)) voltage ("BAT" green range).
- 4 IRS 3 battery ([32FP](#)):
  - Gain access to cockpit.
  - On overhead panel, press "AHS3" pushbutton ([33FP](#)).
  - RH voltmeter ([R1PJ](#)) indicate the IRS 3 battery ([32FP](#)) voltage ("BAT" green range).
- 5 Stand-by horizon battery ([4FG](#)):
  - Gain access to cockpit.
  - On overhead panel, press "HRZN" pushbutton ([7FG](#)).
  - LH voltmeter ([L1PJ](#)) indicate the stand-by horizon battery ([4FG](#)) voltage ("BAT" green range).

### 5. FINAL STEPS

Refer to **fig. 1**

- A. As applicable, install the following floor panel:
- for A/C < 21 without SB F900EX-58 : floor panel ([113FZ](#)),
  - for A/C ≥ 21 or A/C with SB F900EX-58 : floor panel ([113HZ](#)).

## **FALCON 900EX AIRCRAFT MAINTENANCE MANUAL**

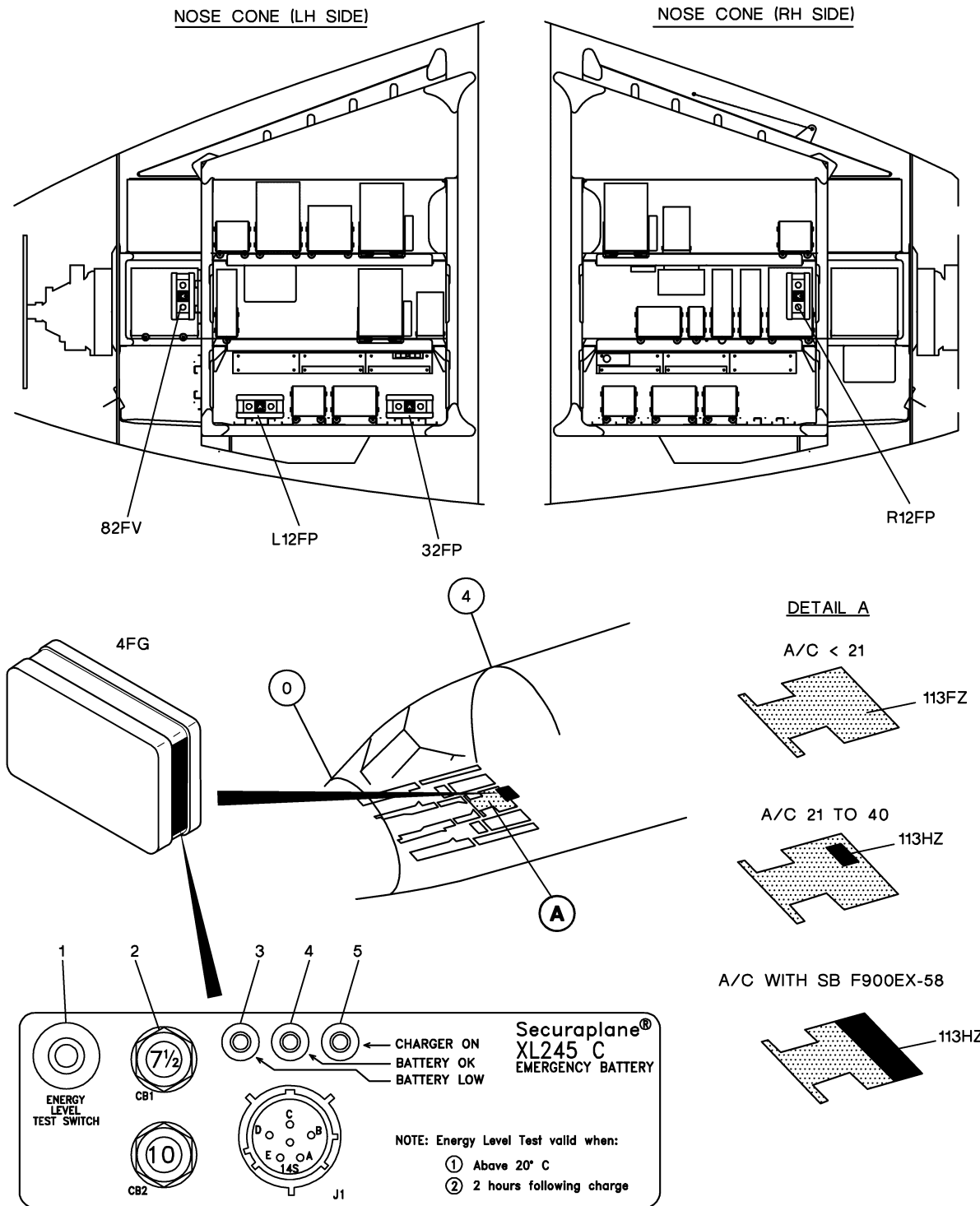
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**CAUTION:** BEFORE CLOSING THE NOSE CONE, FOLLOW THE INSTRUCTIONS OF THE INSTRUCTION PLATE ATTACHED TO THE CHASSIS OR TO FRAME 0 DEPENDING ON THE AIRCRAFT.

WHEN CLOSING THE NOSE CONE, RETARD ITS DOWNWARD MOVEMENT BEFORE IT REACHES THE BOTTOM STOP.

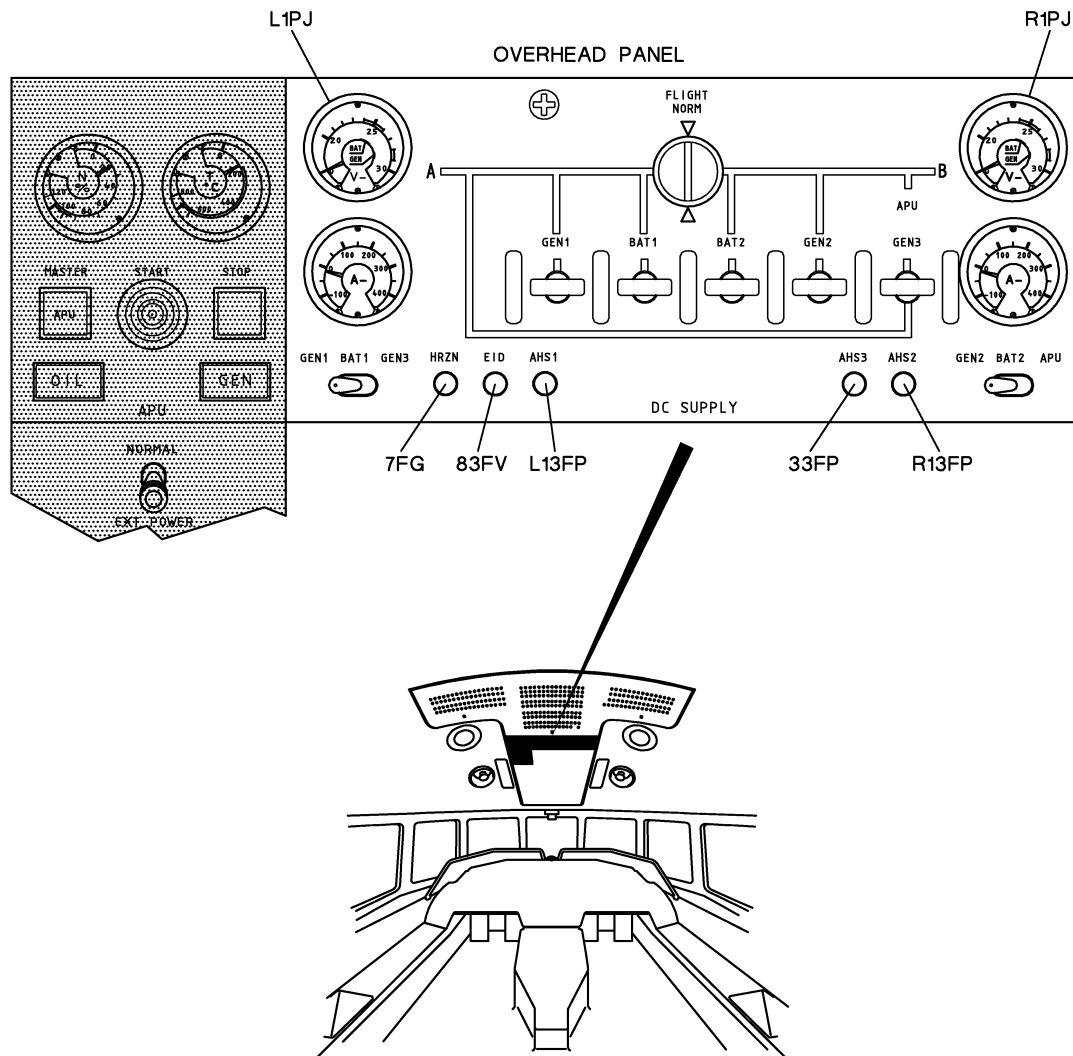
- B. If applicable, close nose cone (**210A**).

## FALCON 900EX AIRCRAFT MAINTENANCE MANUAL



**Figure 1: Location of Stand-by Horizon and Avionics Batteries**

## FALCON 900EX AIRCRAFT MAINTENANCE MANUAL



**Figure 2: Location of cockpit controls**

## FALCON 900EX AIRCRAFT MAINTENANCE MANUAL

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### TASK 24-32-09-960-802

## DISCARD OF "SECURAPLANE" XL245 STAND-BY BATTERIES

### 1. OVERVIEW OF THE JOB

Operation codes:

- 24-32-09-960-802-01 stand-by horizon battery (**4FG**)
- 24-32-09-960-802-02 IRS 1 battery (**L12FP**)
- 24-32-09-960-802-03 IRS 2 battery (**R12FP**)
- 24-32-09-960-802-04 EID battery (**82FV**)
- **24-32-09-960-802-05** IRS 3 battery (**32FP**)

This task consists of the discard of the Securaplane XL245 series (lead/acid) batteries.

For Removal/Installation of the batteries, refer to the AMM (Refer to **TASK 24-32-09-900-801**).

### 2. LOGISTICS

#### A. References

##### Reference

- **24-32-09-900-801**

##### Designation

REMOVAL / INSTALLATION OF THE STAND-BY BATTERIES