

**FAA-APPROVED**

**AIRPLANE FLIGHT MANUAL SUPPLEMENT**

**For**

**EIS Back-up Battery System (EBBS) Panel**

**With**

**Existing Dual EIS and Back-up Battery Pack**

Registration No. \_\_\_\_\_

Serial No. \_\_\_\_\_

This supplement must be attached to the FAA approved Airplane Flight Manual when the EIS Back-up Battery System Panel has been installed per FAA STC SA04586CH.

The information contained herein supplement or supersedes the basic Airplane Flight Manual only in those areas listed. For limitations, procedures, and performance information not contained in this supplement, consult the basic Airplane Flight Manual.

FAA APPROVED: \_\_\_\_\_ *for*  
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### ***Log Of Revisions***

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## Section 1: General

This Airplane Flight Manual Supplement contains the necessary information required for the operation of the Electroair Electronic Ignition System (EIS) Back-up Battery System (EBBS) Panel, Part # EA-26000-12 and EA-26000-24.

The EBBS Panel, presented in Figure 1, is designed for use with dual EIS, STC# SA02987CH or SA03286CH, and TCW Technologies Integrated Back-up Battery System (IBBS), STC# SA04400NY. Each of these STCs incorporate a separate AFMS for the prerequisite systems. Specifically, 4-cylinder EIS (SA02897CH) document number AFMS EIS-41000, 6-cylinder EIS (SA03286CH) document number AFMS EIS-61000, and TCW Integrated Back-up Battery System (SA04400NY) document number 725.0005.



Figure 1: EIS Back-up Battery System Panel

### A. FUNCTIONAL OVERVIEW

The EBBS panel has three Light Emitting Diodes (LEDs), a voltmeter, and a rocker switch. Illumination of the EIS #1 or #2 LEDs (green) indicates the respective EIS is receiving power. Illumination of the BATTERY IN USE (amber) LED indicates the back-up battery is supplying power to the connected EIS. The voltmeter indicates the voltage of the back-up battery system. The rocker switch enables the back-up battery to activate when the aircraft primary electrical system drops below the acceptable range. See Table 1 for label description.

Table 1: Label Description

<b>LABEL</b>	<b>LED</b>	<b>DESCRIPTION</b>
EIS #1	Green	EIS #1 has sufficient voltage for operation
EIS #2	Green	EIS #2 has sufficient voltage for operation
BATTERY IN USE	Amber	EIS is powered by back-up battery system due to main aircraft power failure
OFF	--	Back-up battery power is manually switched OFF
READY	--	Back-up battery power is "ready" to automatically power a single EIS if aircraft main power failure is sensed
Voltage	--	Indication of back-up battery system voltage only

## B. SYSTEM OPERATION

Under normal operating conditions, the EBBS Panel will be controlled by the flight crew. The flight crew will put the back-up battery into a standby, or "READY" mode by toggling the switch from the OFF position to the READY position during the preflight phase. The charge status (state of charge) of the back-up battery can be observed during Pre-flight and monitored during operations when the switch is remains in the READY position.

When the switch is in the READY position, the back-up battery system automatically monitors the aircraft electrical system and the back-up battery will remain in a standby state until the aircraft system voltage falls below the specified values listed in the battery manufacturer installation manual. For 12V aircraft, the minimum aircraft system voltage is 11V. For 24V aircraft, the minimum system voltage is 22V. When the aircraft system voltage falls below the specified minimum system voltage, the back-up battery will automatically isolate one EIS that has been connected to the back-up battery and provide power to the EIS for a minimum of 60 minutes.

If the aircraft electrical system recovers and attains acceptable voltage over the minimum specified (11V for 12V aircraft or 22V for 24V aircraft), the back-up battery will cease supplying power to the EIS connected to it and return to the power supplied from the aircraft electrical system. In this state, the back-up battery will recharge itself from the aircraft electrical system to the nominal voltage.

The back-up battery system operates automatically once the Integrated Back-up Battery System Master Switch is set to BACKUP ENABLE (see STC# SA04400NY, AFMS 725.0005) and EBBS Panel rocker switch is positioned to READY as part of the preflight

procedures. The flight crew must also put the system in the OFF mode as part of the post-flight procedures.

The Airplane Flight Manual (AFM) procedures will be updated to include activating the back-up battery system into the READY mode as part of the starting procedures and selecting the back-up battery system into the OFF modes as part of the shutdown procedures.

## ***Section 2: Limitations***

No Change

## ***Section 3: Emergency Procedures***

### **LOSS OF MAIN AIRCRAFT ELECTRICAL POWER**

1. Operate the aircraft Master Power Switch per for the Emergency Procedure checklist already established for the aircraft.
2. Ensure the Back-up Battery Panel switch is positioned to READY.
3. Land aircraft as soon as practical to resolve the loss of main electrical power.

#### **WARNING**

**DO NOT TURN OFF Electrical Ignition Systems, as engine failure may occur.**

IF AMBER "BATTERY IN USE" LED ILLUMINATED

4. Land aircraft as soon as practical to resolve the loss of main electrical power.

#### **CAUTION**

**When the aircraft main bus voltage falls below the specified minimum, the back-up battery will automatically power the connected EIS for 60 minutes (minimum).**

## **Section 4: Normal Procedures**

### **I. Preflight**

Add the following series of steps:

1. Master Switch – OFF
2. Back-up Battery Panel Switch – READY (Verify amber “BATTERY IN USE” LED illuminated)
3. Voltage – CHECK 12V system acceptable range: 12-15V  
24V system acceptable range: 24-29V

**NOTE**

**If voltage is less than the acceptable range, then charge the back-up battery before continuing. Refer to back-up battery manufacturer instructions on how to properly charge the battery.**

4. EIS Switches – ON (Verify that either EIS #1 or EIS #2 green LED illuminated)
5. EIS Switches – OFF
6. Master Switch – ON
7. Amber “BATTERY IN USE” LED – EXTINGUISHED (Verify)

**NOTE**

**This step confirms the main aircraft power is sufficient to Energize the EIS. If the amber “BATTERY IN USE” LED Remains illuminated, then the main aircraft voltage is Insufficient (low). Resolved the issue before continuing.**

8. Battery Backup Panel Switch – OFF Position
9. Master Switch – OFF

Continue AFM Preflight Procedures.



## ***II. Starting***

Add the following step proceeding Master Switch activation:

1. Back-up Battery Panel Switch – READY

Continue AFM Starting Engine Procedure.

## ***III. Ignition Check***

No Change

## ***IV. Takeoff***

No Change

## ***V. Cruise***

No Change

## ***VI. Decent***

No Change

## ***VII. Landing***

No Change

## ***VIII. Shutdown***

Prior to securing Master Power, add the following step:

1. Back-up Battery Panel Switch – OFF

Continue AFM Shutdown Procedure.

## ***Section 5: Performance***

No Change

## ***Section 6: Weight and Balance***

For current empty weight and CG, see revised weight and balance record.