

**FAA APPROVED**

**AIRPLANE FLIGHT MANUAL SUPPLEMENT**

For

**SYSTEM INSTALLATION**

Of

**EA-15000 IGNITION/STARTER SWITCH PANEL FOR  
TWO MAGNETOS**

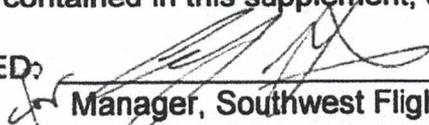
Registration No. 2912 m

Serial No. 28-7890279

This supplement must be attached to the FAA approved Aircraft Flight Manual when the Electroair EA-15000 has been installed per FAA STC SA04280CH

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

FAA APPROVED:

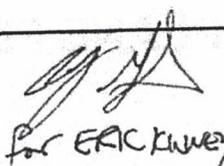


\_\_\_\_\_  
Manager, Southwest Flight Test Section, AIR-713  
Federal Aviation Administration  
Ft. Worth, TX

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The information contained therein is reserved for the exclusive use of Electroair.  
Release only on a need to know basis.

**ELECTROAIR RESTRICTED**

**Log of Revisions:**

Revision	Pages Affected	Date of Revision	Description of Revision	Approved by	Date of FAA Approval
00	All	10/30/2017	Initial Release		
01	1-7	01/31/2018	Format changes, Added pictures, Reduced redundancy, and other minor changes.	 For ERIC Kwey	2/5/2018

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## Section 1: General:

This Aircraft Flight Manual Supplement contains the necessary information required for the operation of an ignition/starter switch panel installed onto aircraft using two magnetos.

### A. FUNCTIONAL OVERVIEW

The Electroair EA-15000 Ignition/Starter Switch Panel is designed as an option to replace rotary ignition type switches that are commonly found in small aircraft. The option makes for a more intuitive operation of ignition systems and reduces maintenance cost.

The EA-15000 has two options that the installer/user can choose. Option A is a horizontal layout, and option B is a vertical layout. The installer/user of the EA-15000 will choose which option based on their own preference or what can fit onto the aircraft's instrument panel. Both options function in the same way.

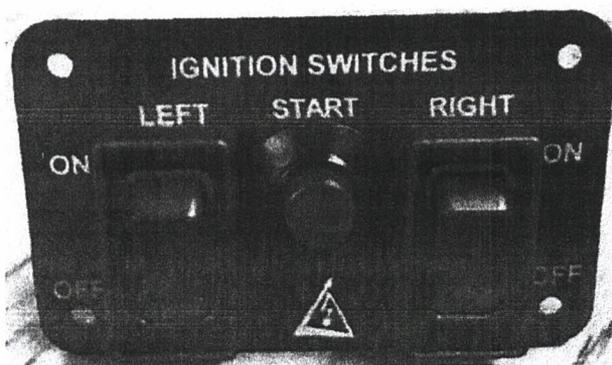


Figure 1: Option A, Horizontal Layout

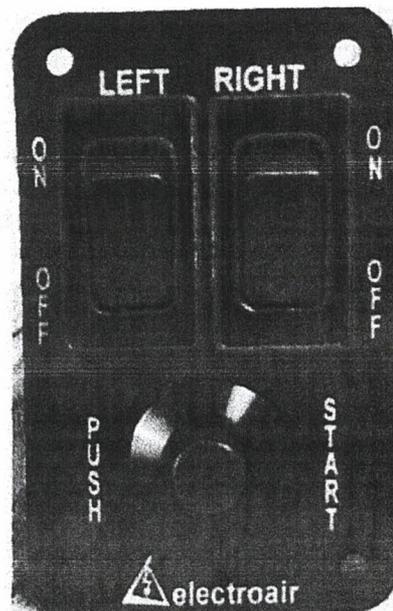


Figure 2: Option B, Vertical Layout

### B. SYSTEM OPERATION

Under normal operating conditions, the EA-15000 switch panel will be controlled by the flight crew. The AFMS shall be updated by adding the task pushing the switch buttons instead of rotating a key switch for controlling the ignition systems.

**Section 2: Limitations:**

**PLACARDS**

Ignition switch panels will be placarded in accordance with installation instructions, identifying the left and right magneto. See Figure 1 and Figure 2 for reference.

### **Section 3: Emergency/Abnormal Procedures:**

#### **Emergency Procedures**

No Change

#### **Abnormal Procedures**

##### **Alternator/Generator Failure:**

No Change

##### **Problem: Rough running engine and/or high CHTs:**

Follow baseline AFM/POH procedures. Determine if one of the magnetos is bad and isolate the bad/suspected magneto.

##### **Problem: Severe loss in engine power and/or low CHTs, engine operating smoothly:**

Follow baseline AFM/POH procedures. Determine if one of the magnetos is bad and isolate the bad/suspected magnetos.

## Section 4: Normal Procedures:

### I. Preflight:

No Change

### II. Starting:

The magneto starting switch configuration is dependent on the particular aircraft installation. Starting magnetos should be placed in the ON position for start while non-impulse or direct-drive magnetos should be in the OFF position. At the time of installation, the correct configuration should be determined and noted in the table below with a check mark (✓) next to the proper row:

Magneto Switch Position for Engine Start			
Select (✓)	Left	Right	Notes
	ON	OFF	Left is the starting magneto Right is impulse or direct drive magneto
	ON	ON	Both left and right magnetos are starting magnetos
	OFF	ON	Right magneto is the starting magneto Left is impulse or direct drive magneto

With switches in the correct positions, push the red START button to engage starter

### III. Ignition Check:

#### Procedure, With EA-15000:

The ignition check shall be made at the same RPM as defined in the AFM/POH.

Ignition BOTH (Left and Right) ON  
LEFT Magneto OFF – Note RPM Drop \_\_\_\_\_  
LEFT Magneto ON  
RIGHT Magneto OFF – Note RPM Drop \_\_\_\_\_  
RIGHT Magneto ON

Magneto RPM drop should not exceed the RPM defined in the AFM/POH. If there is a doubt concerning operation of the ignition systems, RPM checks at higher engine speeds will usually confirm whether a deficiency exists. At the end of the ignition check, verify both ignition switches are in the "ON" position.

**IV. Takeoff:**

No Change

**V. Cruise:**

No Change

**VI. Descent:**

No Change

**VII. Landing:**

No Change

**VIII. Shutdown:**

No Change

**IX. Post-flight:**

No Change

**Section 5: Performance:**

No Changes

**Section 6: Weight and Balance:**

A new weight and balance should be calculated for the aircraft after the removal of old components and the installation of the EA-15000. The weight of the EA-15000 is 1.4 ounces. All future loading calculations should use the updated aircraft weight and balance.

## **Section 7: Glossary and Abbreviations:**

AD(s) – Airworthiness Directive(s)

AFM – Aircraft Flight Manual

AFMS – Aircraft Flight Manual Supplement

ALS – Aircraft Limitations Section

AML – Approved Model List

APU – Auxiliary Power Unit

BTDC – Before Top Dead Center

CFR – Code of Federal Regulations

CSTW – Crank Shaft Trigger Wheel

EIS – Electronic Ignition System

FAA – Federal Aviation Administration

Ignition Timing – is the process of setting the angle relative to piston position and crankshaft angular velocity that a spark will occur in the combustion chamber near the end of the compression stroke.

MAG – magneto

MAP – Manifold Absolute Pressure

May/Should – an optional requirement

MTH – Mag Timing Housing

Must/Shall – a mandatory requirement

RPM – Revolutions per Minute

POH – Pilot's Operating Handbook

STC – Supplemental Type Certificate

TDC – Top Dead Center



US Department of Transportation  
Federal Aviation Administration

## MAJOR REPAIR AND ALTERATION (Airframe, Powerplant, Propeller, or Appliance)

Form Approved  
OMB No. 2120-0020  
5/31/2018

Electronic Tracking Number

For FAA Use Only

INSTRUCTIONS: Print or type all entries. See Title 14 CFR §43.9, Part 43 Appendix B, and AC 43.9 1 (or subsequent revision thereof) for instructions and disposition of this form. This report is required by law (49 U.S.C. §44701). Failure to report can result in a civil penalty for each such violation. (49 U.S.C. §46301(a))

<b>1. Aircraft</b>	Nationality and Registration Mark N2912M	Serial No. 28-7890279	
	Make Piper	Model PA-28-181	Series
<b>2. Owner</b>	Name (As shown on registration certificate) HARRIMAN AVIATION LLC	Address (As shown on registration certificate) Address 3707 PINE STREAM DR	
		City <u>Pearland</u> State <u>TX</u>	Zip <u>77581-8828</u> Country <u>USA</u>

**3. For FAA Use Only**

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	AIRFRAME	_____	(As described in Item 1 above)	_____
<input type="checkbox"/>	<input type="checkbox"/>	POWERPLANT			
<input type="checkbox"/>	<input type="checkbox"/>	PROPELLER			
<input type="checkbox"/>	<input type="checkbox"/>	APPLIANCE	Type		
			Manufacturer		

**6. Conformity Statement**

A. Agency's Name and Address		B. Kind of Agency	
Name <u>Kirk Taylor</u>		<input checked="" type="checkbox"/> U. S. Certificated Mechanic	
Address <u>17910 Airfield Lane</u>		<input type="checkbox"/> Foreign Certificated Mechanic	
City <u>Pearland</u> State <u>TX</u>		<input type="checkbox"/> Certificated Repair Station	
Zip <u>77581</u> Country <u>USA</u>		<input type="checkbox"/> Certificated Maintenance Organization	
		<b>C. Certificate No.</b> <b>IA 3525486</b>	

D. I certify that the repair and/or alteration made to the unit(s) identified in item 5 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.

Extended range fuel per 14 CFR Part 43 App. B <input type="checkbox"/>	Signature/Date of Authorized Individual <i>Karl B Zyr</i> <u>Feb 20 2024</u>
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**7. Approval for Return to Service**

Pursuant to the authority given persons specified below, the unit identified in item 5 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is  Approved  Rejected

BY	FAA Flt. Standards Inspector	Manufacturer	Maintenance Organization	Persons Approved by Canadian Department of Transport
	FAA Designee	Repair Station	<input checked="" type="checkbox"/> Inspection Authorization	Other (Specify)

Certificate or Designation No. IA3525486	Signature/Date of Authorized Individual <i>Karl B Zyr</i> <u>Feb 20 2024</u>
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NOTICE

Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An alteration must be compatible with all previous alterations to assure continued conformity with the applicable airworthiness requirements.

N2912M

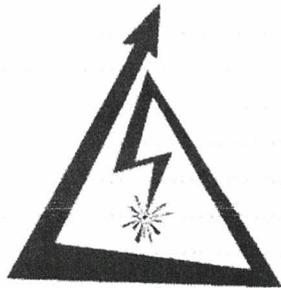
Feb 20, 2024

8. Description of Work Accomplished

Nationality and Registration Mark Date

Removed factory key switch and replaced with new Electroair dual magneto switch panel in accordance with STC# SA04280 and installation instructions IM EA-15000 Rev 1. No change to weight and balance. Placed AFMS and ICA in aircraft.

— END —



**electroair**  
ELECTRONIC IGNITION SYSTEMS

***EA-15000***  
***Instructions for Continued***  
***Airworthiness***

***Electroair***  
***327 Catrell Dr***  
***Howell, MI 48843 U.S.A.***  
***Ph: 517-552-9390 Fax: 517-552-9391***  
***Email: sales@electroair.net***

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## **General:**

This Instruction for Continued Airworthiness contains the necessary information required for the operation of an Ignition/Starter Switch Panel For Two Magnetos (EA-15000) as installed on aircraft that formerly used a rotary style ignition switch.

### **A. FUNCTIONAL OVERVIEW**

The Electroair EA-15000 is an Ignition/Starter Switch Panel for use on aircraft with two magnetos. The EA-15000 eliminates the need for the rotary key switch by replacing it with two rocker switches and one push button starter switch.

### **B. SYSTEM OPERATION**

Under normal operating conditions, the EA-15000 controlled by the flight crew. An AFMS has been created to reflect how the EA-15000 Ignition/Starter switch panel operates instead of a rotary key switch.

## **Precautionary Statements:**

- Read this entire document before starting any processes listed within this document. If there are any questions or concerns please contact Electroair before starting. (517-552-9390 or [sales@electroair.net](mailto:sales@electroair.net))
- If a switch panel is improperly installed; the EIS, the aircraft, or the installer could be seriously damaged.
- Always use appropriate work and safety practices.
- For the latest up to date information refer to [www.electroair.net](http://www.electroair.net) (ICA, AML, Installation Manual, AFMS, etc.)
- For abnormal operation, for ignition systems that have a suspected failure, refer to the Electroair Trouble Shooting Instructions at [http://electroair.net/pdfs/troubleshooting\\_the\\_EIS.pdf](http://electroair.net/pdfs/troubleshooting_the_EIS.pdf)

## **Eligibility:**

See approved model list (AML) for exact model numbers

## **Manual Reference:**

Electroair Kit Part Number	Installation Manual Number
EA-15000	IM EA-15000

(See approved model list (AML) for kit part number applicability)

## ***Airworthiness Limitations Section (ALS):***

The Airworthiness Limitations section is FAA approved and specifies maintenance required under §§43.16 and 91.403 of Title 14 of the Code of Federal Regulations unless an alternative program has been FAA approved. There are no FAA mandated inspection or replacement intervals for this STC.

## ***Receiving and Acceptance Checking of EIS Kit***

1. Review the packaging before acceptance from the freight carrier. If the packaging is damaged, refuse the shipment.
2. Open the package; and, review the contents of the package to the content listing on the package.
3. Are all of the materials there?
  - a. Yes, proceed to step 4.
  - b. No, contact the factory. Have the serial number of the kit available when contacting. (517-552-9390 or [sales@electroair.com](mailto:sales@electroair.com))
4. Review the EA-15000 ignition/starter switch panel.
5. Are all materials acceptable?
  - a. Yes, proceed with installation.
  - b. No, contact the factory. Have the serial number of the kit available when contacting. (517-552-9390 or [sales@electroair.com](mailto:sales@electroair.com))

If possible, store parts in original packaging when not in use. If not possible, wrap parts in cushioning material and place in one location. Review as above prior to reinstallation.

## ***Inspections:***

Refer to the installation manual for required tooling. The installation manual has been provided as a part of this kit, if another copy is required refer to [www.electroair.net](http://www.electroair.net).

### **Annually:**

1. N/A

### **Lightning Strikes, Engine Fires, Water Damage, Etc.**

1. Inspect the EA-15000 wiring and components.
2. If there is obvious damage, replace the damaged components.
3. If there is no obvious damage, perform a ground run-up. If no problems are found, continue with the standard procedures as stated in the AFMS.
4. If unsure, contact factory (517-552-9390 or [sales@electroair.net](mailto:sales@electroair.net)).

**Re-Installation:**

1. For removal follow the EA-15000 Installation Manual in reverse order.
2. For instructions on reinstalling individual EA-15000 components or the entire system, refer to the EA-15000 Installation Manual that was included with the EA-15000 kit. If the original installation manual is not with the system, contact the factory for an up to date replacement installation manual (517-552-9390 or [sales@electroair.net](mailto:sales@electroair.net)) or retrieve from the factory's website [www.electroair.net](http://www.electroair.net).
3. After re-installation follow the instructions for start-up in the AFMS.

**Glossary and Abbreviations:**

- AD(s) – airworthiness directive(s)
- AFM – aircraft flight manual
- AFMS – aircraft flight manual supplement
- ALS – aircraft limitations section
- AML – approved model list
- BTDC – before top dead center
- CFR – code of federal regulations
- CSTW – crankshaft trigger wheel
- EIS – electronic ignition system
- FAA – federal aviation administration
- MAG -- magneto
- MAP – manifold absolute pressure
- May/Should – an optional requirement
- MTH – mag timing housing
- Must/Shall – a mandatory requirement
- RPM – revolutions per minute
- STC – supplemental type certificate
- TDC – top dead center

**Revision Log**

Revision	Date of Revision	Description of Revision	Approved by	Date of Approval
00	09/15/2017	Initial Release		