FAA APPROVED

AIRCRAFT FLIGHT MANUAL SUPPLEMENT

For

SYSTEM INSTALLATION

Of

EIS-41000 ELECTRONIC IGNITION SYSTEMS

Registration No. 1471E

Serial No. 17271014

This supplement must be attached to the FAA approved Aircraft Flight Manual when the Electroair electronic ignition system has been installed per FAA STC #SA02987CH.

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: _____

Steven L. Lardinois
Manager, Systems and Flight Test Branch
Chicago Aircraft Certification Office
Federal Aviation Administration

B. SYSTEM OPERATION

Under normal operating conditions. the EIS-41000 Electronic Ignition System will be controlled by the flight crew in the same manner as the magneto that was previously installed. The AFM shall be updated by adding the task of turning ON the system (EIS) after the Master Switch is turned ON; and by turning OFF the system (EIS) prior to the Master Switch being turned OFF (reference Section 4: Normal Procedures for AFM updates). The AFM shall also be updated in the magneto trouble-shooting section to change wording to reflect the fact than an Electronic Ignition System has been installed (reference Section 3: Emergency/Abnormal Procedures for AFM updates).

Section 2: Limitations:

VOLTAGE

System voltage to EIS-41000 shall be at least 8VDC, or EIS will not function.

PLACARDS

Ignition system will be placarded in accordance with installation instructions, identifying the magneto and the EIS.

Section 3: Emergency/Abnormal Procedures:

Emergency Procedures

No Change

Abnormal Procedures

Alternator/Generator Failure:

No Change

Note: It is important to take into consideration that the EIS-41000(s) will be drawing power from the aircraft's remaining power supply. For load shedding calculations, use the value of 0.75 Amps for what one EIS-41000 will draw. It is NOT recommended to load shed the EIS.

Problem: Rough running engine and/or high CHTs:

Perform in-flight troubleshooting in accordance with POH. Determine if one of the ignition systems is bad and isolate the bad/suspected ignition system.

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

Perform in-flight troubleshooting in accordance with POH. Determine if one of the ignition systems is bad and isolate the bad/suspected ignition system.

Section 4: Normal Procedures:

I. Preflight:

Update the POH to include turn "EIS-ON" after turn Master Switch ON.

II. Starting:

"EIS Switch – ON" Procedure:

Verify the switch labeled "EIS" to the ON position.

III. Ignition Check:

Procedure, With Rotary or Key Switch:

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

Ignition switch to "BOTH" position
Ignition switch to "R" position – Note RPM Drop _____
Ignition switch to "BOTH"
Ignition switch to "L" position – Note RPM Drop _____
Ignition to "BOTH" position

Magneto RPM drop should not exceed the RPM defined in the AFM. EIS RPM drop is defined below. 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 move ignition switch back to "BOTH" position.

RPM Drops:

Magneto – as defined in POH.
EIS – 30-40 RPM max

Procedure, With Standard or Rocker Switch:

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

Ignition BOTH ON
EIS OFF – Note RPM Drop _____
EIS ON
Magneto OFF – Note RPM Drop _____
Magneto ON

Magneto RPM drop should not exceed the RPM defined in the POH. EIS RPM drop is defined below. 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 move ignition switches back to "ON" position.

RPM Drops:

Magneto – as defined in POH.
EIS – 30-40 RPM max

IV. Takeoff:

No Change

V. Cruise:

No Change

VI. Descent:

No Change

VII. Landing:

No Change

VIII. Shutdown:

"EIS Switch – OFF" Procedure:

In the POH, add turn the switch labeled "EIS" to the OFF position before turn Master Switch OFF.

IX. Post-flight:

No Change

Section 5: Performance:

No Changes

Section 6: Weight and Balance:

The installation of the EIS-41000 requires the removal of one Magneto and the installation of the six EIS-41000 components. This installation results in a change to the aircraft's weight and balance. A new weight and balance should be calculated for the aircraft after the installation of the EIS-41000(s). All future loading calculations should use the updated aircraft weight and balance. The individual EA part weights are below. NOTE: For the twin engine aircraft, the weight and balance must include the weight of both sets of EIS-41000 components.

1. EA-1000: 0.8 pounds (Controller)
2. EA-2000: 2.9 pounds (Coil Pack)
3. EA-3000: 1.5 pounds (Mag Timing Housing)
4. EA-4000: 1.1 pounds (Spark Plug Wires)
5. EA-5000: 0.4 pounds (MAP Sensor)
6. EA-6000: 0.8 pounds (Controller Wire Harness)

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

United States of America

Department of Transportation -- Federal Aviation Administration

Supplemental Type Certificate

Number SA04032CH

This certificate issued to Electroair Acquisition Corporation
317 Catrell Drive, Suite 2
Howell, MI 48843

certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon meets the airworthiness requirements of Part 23 *of the* Federal Aviation *Regulations.* *

Original Product - Type Certificate Number : *
Make : *
Model : *

* See attached FAA Approved Model List (AML) No. SA04032CH for list of approved airplane models and applicable airworthiness regulations.

Description of Type Design Change:
Install rocker switch assemblies in accordance with Electroair Acquisition Corporation Installation Instructions as listed on AML SA04032CH, or later FAA approved revision.

Limitations and Conditions:
1. The installer must determine whether this design change is compatible with previously approved modifications.
2. A copy of this Certificate and FAA Approved Model List (AML) No. SA04032CH, issued October 8, 2015, or later FAA approved revision, must be maintained as part of the permanent records for the modified aircraft.
3. If the holder agrees to permit another person to use this certificate to alter a product, the holder must give the other person written evidence of that permission.

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application : March 23, 2015

Date of issuance : October 8, 2015

Date reissued :

Date amended :

By direction of the Administrator

(Signature)

Chung-Der Young
Acting Manager, Propulsion & Program Management Branch
Chicago Aircraft Certification Office

(Title)

Any alteration of this certificate is punishable by a fine of not exceeding $1,000, or imprisonment not exceeding 3 years, or both.

This certificate may be transferred in accordance with FAR 21.47.

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 appicable airworthiness requirements.

N1471E	Nov 14, 2018
Nationality and Registration Mark	Date

8. Description of Work Accomplished

Removed right hand magneto and installed Electroair electronic ignition system IAW STC# SA02987CH and current installation instructions IM EIS-41000, revision 10 dated 01/23/2017. Installed Electroair switch panel at this time as well IAW STC# SA04032CH and installation instructions IM EA-13000 Rev 02 dated 06/20/2016. Weight and balance was recalculated and a copy placed in the aircraft records.

---------- END ----------

[ ] Additional Sheets Are Attached

United States of America

Department of Transportation -- Federal Aviation Administration

Supplemental Type Certificate

Number SA03286CH

This certificate issued to: Electroair Acquisition Corp
317 Carrell Dr. Suite 2
Howell, MI 48843

certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon, meets the airworthiness requirements of Part * of the * Regulations: *

Original Product Type Certificate Number: *
Make: *
Model: *

* See attached FAA Approved Model List (AML) No. SA03286CH for list of approved airplane models and applicable airworthiness regulations.

Description of Type Design Change:
Install an electronic engine ignition system in accordance with Electroair Acquisition Corp Installation Manual, IM EIS-61000, revision 11, dated March 20, 2018, or later FAA approved revision.

Limitations and Conditions:

1. The installer must determine whether this design change is compatible with previously approved modifications.
2. A copy of this Certificate and FAA Approved Model List (AML) No. SA03286CH, issued July 18, 2018, or later FAA approved revision, must be maintained as part of the permanent records for the modified aircraft.
3. FAA Approved Aircraft Flight Manual Supplement, AFMS EIS-61000 Rev 06, approved June 18, 2018, or later FAA approved revision is required.
4. FAA Accepted Instructions for Continued Airworthiness, ICA EIS-61000, Revision 11, dated March 20, 2018, or later FAA accepted revision is required for this modification.
5. If the holder agrees to permit another person to use this certificate to alter a product, the holder must give the other person written evidence of that permission.

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application: December 4, 2012

Date of issuance: January 13, 2014

Date reissued:

Date amended: March 28, 2014; September 19, 2014; April 4, 2016; July 18, 2018

By direction of the Administrator

(Signature)

Roy L. Boffo
Manager, Propulsion & Program Management Section
Chicago Aircraft Certification Office
Compliance & Airworthiness Division

(Title)

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 appicable airworthiness requirements.

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