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Supplement No. 1018-EA41000-4

FAA-APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT

FOR

Make and Model Airplane

Reg. No. _____

Ser. No. _____

This supplement must be attached to the FAA approved Airplane Flight Manual, or AFM, when the EIS-41000 is installed in accordance with STC SA02987CH. The information contained in this document supplements or supersedes the basic manual only in those areas listed. For limitations, procedures, performance, and loading information not contained in this supplement, consult the basic Airplane Flight Manual.

I. LIMITATION:

NO CHANGE

II. NORMAL PROCEDURES:

Circuit Breakers: A 2 Amp and 10 Amp breaker have been added to the instrument panel during the installation of the EIS-41000. The 2 Amp breaker provides circuit protection for the EA-1000 Controller and the 10 Amp breaker provides circuit protection for the EA-2000 4-cyl Coil Pack. When the Master Switch and EIS Switch are on, opening the breaker will remove power from the Electroair component the circuit breaker is associated with.

Turning ON the EIS Switch: In the procedures for starting the engine, after the AFM calls out "Master Switch - ON" the next procedure must be "EIS Switch - ON". The procedure for "EIS

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Switch ON" is below. The EIS Switch is a separate switch that has been installed on the instrument panel that supplies power to the EIS-41000. Update the procedures checklist to incorporate this procedure immediately after the "Master Switch - ON" procedure.

Procedure: Turn the switch labeled "EIS Switch" to the ON position.

Verifying Battery Charge: In the procedures for starting the engine, after the Master Switch and EIS Switch have been turned on, the charge on the battery must be checked to make sure the battery is adequately charged. The procedure to check the charge on the battery is below. Update the procedures checklist to incorporate this procedure immediately after the "EIS Switch - ON" procedure.

Procedure: First determine what the battery manufacturer's recommended Closed Circuit Voltage is for the battery. If the manufacturer does not define what this voltage should be, use 24 volts for a 24 volt battery or 12 volts for a 12 volt battery. After the Master Switch and EIS Switch have been turned on, measure the voltage of the battery. If the voltage of the battery is at or higher than the manufacturer's Closed Circuit Voltage, proceed with the rest of the procedures for starting the engine. If the voltage is below the manufacturer's Closed Circuit Voltage, the battery is deemed "Dead" and the procedure for starting the engine should be aborted. When the battery is deemed dead, it must be charged or replaced before starting the engine is continued. For proper charging procedures, please refer to the Dead/Bad Battery procedures in section III.

Magneto Check: In the pre-flight checklist where it calls out Magneto Check, use the one of the procedures below. The procedure you will use will be dependent on how the EIS-41000 was installed onto the aircraft. The EIS-41000 can be installed with or without the ignition P-Lead; the corresponding procedures for each installation type are below.

ROTARY IGNITION SWITCH WITH P-LEAD INSTALLED:

Procedure: The magneto check should be made at the same RPM as defined in the AFM Magneto Check. The magneto check should go as follows: Move the ignition switch to "R" position, and note RPM. Next move switch back to "BOTH" to clear the other set of plugs. Then move switch to "L" position and note RPM. Magneto and EIS individual RPM drop should not exceed the RPM defined in the AFM Magneto Check. 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 Magneto check move ignition switch back to "BOTH" position.

ROTARY IGNITION SWITCH WITHOUT P-LEAD INSTALLED:

Procedure: The Magneto check should be made at the same RPM as defined in the AFM Magneto Check. The magneto check should go as follows: With the ignition switch in the "BOTH" position, move the "EIS Switch" to the "OFF" position and note the RPM (This checks the operation of the magneto). Move the "EIS Switch" to the "ON" position to clear the other set of plugs. Move the ignition switch to the "R" position and note RPM (This checks the operation of the EIS). Magneto and EIS individual RPM drop should not exceed the RPM defined in the AFM Magneto Check. 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 Magneto check, move the ignition switch to the "BOTH" position and verify the "EIS Switch" is in the "ON" position.

TWO SEPARATE IGNITION SWITCHES:

Procedure: The magneto check should be made at the same RPM as defined in the AFM Magneto Check. The switch labeled "EIS Switch" will be the ignition switch for the EIS-41000. The magneto check should go as follows: With both ignition switches in the "ON" position, Shift the "EIS Switch" to the "OFF" position and note the RPM (this checks the operation of the magneto). Shift the "EIS Switch" to the "ON" position. Shift the Magneto ignition switch to the "OFF" position and note the RPM (this checks the operation of the EIS). Shift the Magneto ignition switch to the "ON" position. Magneto and EIS individual RPM drop should not exceed the RPM defined in the AFM Magneto Check. If there is a doubt concerning operation of the ignition systems, RPM checks at higher engine speeds will usually confirm whether a deficiency exists.

IMPORTANT: At the end of the Magneto check, verify that BOTH ignition switches are in the "ON" position.

For all other procedures in the AFM that deal with the aircraft's Ignition systems, treat the EIS-41000 as the Magneto the EIS-41000 replaced.

III. ABNORMAL PROCEDURES

Alternator/Generator Failure: In the case of an alternator or generator failure, follow the approved procedures for this failure. It is important to take into consideration that the EIS-41000 will be drawing power from the aircraft's remaining power supply. For load

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shedding calculations, use the value of 0.75 AMPS for what the EIS-41000 will draw.

Dead/Bad Battery: In the case of a dead battery, the battery **MUST** be properly charged before the engine is turned on. Review and complete the battery manufacturer's recommended procedures for recharging the battery. If the battery fails to hold a charge or cannot charge to the manufacturers recommended charge, the battery will be considered bad. In the case of a bad battery, the battery must be replaced with a battery that meets its manufacturers recommended charge. It is important to follow these procedures; inadequate charge on a battery can cause the EIS-41000 to not operate.

IV. EMERGENCY PROCEDURES:

Problem: Extremely rough running engine and/or high CHTs

Step 1: Turn OFF the EIS.

Step 2: Wait for roughness to reduce *and/or* CHTs start to lower.

A. If the engine continues to run extremely rough and/or the CHTs remain high, turn power back on to the EIS and start standard in-flight engine troubleshooting.

B. If the engine roughness does reduce and/or the CHTs start to lower, proceed to step 3.

Step 3: Keep EIS OFF and make a precautionary landing.

Problem: Severe lose in engine power and/or low CHTs

Step 1: Turn OFF the EIS.

Step 2: Determine if the engine loses significantly more power (RPM) and/or CHTs start to lower.

A. If the engine loses approximately the same amount of RPMs that are lost during the MAG check and/or the CHTs lower further, turn power back on to the EIS and start standard in-flight engine troubleshooting.

B. If the engine does not lose significant RPMs *and/or* the CHTs remain the same, proceed to Step 3.

Step 3: Keep EIS OFF and make a precautionary landing.

Note: Treat the EIS as the magneto it replaced for all other in-flight troubleshooting. After any precautionary landing, have aircraft inspected by appropriately rated aircraft mechanic.

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V. PERFORMANCE:

With the installation of the EIS-41000, there are a few changes in performance that should be defined.

1. In most installations, the idle RPM will be slightly higher than in the normal 2 Magneto configuration. Adjustments to the engine idle should be made if needed.
2. In most installations, there will be a greater difference in RPM drop between the two ignition systems during the "Magneto Check". This is normal because the EIS-41000 is allowing the engine to operate more efficiently than the Magneto does.
3. In all other aspects, the performance of the engine equipped with the EIS-41000 is equal to or better than the performance as listed in the original FAA-approved AFM.

VI. LOADING INFORMATION:

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. All future loading calculations should use the updated aircraft weight and balance. The individual EA part weights are below.

1. EA-1000: 0.8 lbs
2. EA-2000: 2.9 lbs
3. EA-3000: 1.5 lbs
4. EA-4000: 1.1 lbs
5. EA-5000: 0.4 lbs
6. EA-6000: 0.8 lbs

