

September 27, 2001

**TO ALL EXEC 162F OWNERS
with
SINGLE ECU FADEC SYSTEMS**

ENGINE CONTROL UNIT SERVICE LETTER

History: In the normal operation of the single ECU FADEC system there are several sensors used to adjust for proper fuel delivery through the fuel injectors. If a failure occurs to any one of these sensors the engine will continue to operate by the sharing of data from another sensor or through a preset default value. If the baro (barometric pressure) sensor fails a default value will be used, this value should be 88kpa. The engine will operate as if it were at 3000 feet altitude. If the throttle position sensor fails the map (manifold pressure) sensor will take over as the primary sensor. If both baro sensor and throttle position sensor fail the secondary system will take over management of fuel control to the engine.

During a recent evaluation of a FADEC system's operation it was found that the secondary system could not take control of the fuel management if the primary system had multiple sensor failures as an automatic function. It was determined that the firmware installed in the ECU being evaluated was for the dual ECU system and not for a single ECU system that was originally supplied.

Action: If the ECU installed in your aircraft is a replacement for the original or if the ECU was returned to Rotor Way for any reason it may have incorrect firmware program installed. The engine will operate normally with wrong programming during primary system operation but there will be no backup in case of multiple sensor failures.

The FADEC system should be tested to insure that secondary system will take control of engine operation. The engine does not need to be started for this test. Ignition and fuel pump switches should be in the off position.

1. The FADEC system should be activated normally as if the engine were to be started. The green FADEC light should be illuminated and the FADEC display should be operating. The FADEC display will only operate when primary ECU is operational.

2. Disconnect the wiring connection from the baro sensor. The yellow dash light should illuminate and the "B" code 7 should read on the display.

3. Disconnect the primary throttle position sensor wiring connector. The yellow dash light should not be illuminated and the FADEC display should show no readings. The red FADEC light should be illuminated and the secondary injectors should be operating. AVOID EXCESSIVE OPERATION OF SECONDARY INJECTORS.

If primary system does not shut down and secondary system does not activate THE AIRCRAFT SHOULD BE GROUNDED and the ECU returned to RotorWay for reprogramming.