CTRL Systems, Inc. Best Practices

Industry
Military Aviation

Application
Leak Detection

System
Pressure

Component
Canopy and Air Frame Seals

Current Procedures

A maintenance technician pressurizes the cockpit with air and measures the amount of cfm required to maintain the cockpit's pressure differential. If this test fails maintenance technicians perform leak checks by spraying soap and water solution around seams and looking for bubbles while the cockpit is pressurized. If the canopy seals check out then the technician checks the air frame behind avionics for leaks by use of touch and hearing that is hard to pinpoint due to location.

UL101 Test Procedures

1. Select UL101 Receiver, Headset, Mini-Concentrator, and 1-Inch Acoustic Tip from case.
2. Attach Mini-Concentrator and plug in headset to UL101 Receiver.
3. Test battery by moving output switch to headset only position. If meter needle is below the 5-10 (½ scale) of the meter, replace the battery. Return output switch to headset/meter position.
4. Turn gain switch to ½ gain (half-moon); adjust potentiometer knob between 1 and 2.
5. Select the UT2000 Transmitter from the case, turn it on, place inside the cockpit, seal and pressurize.
6. Begin on one side of the cockpit, point the UL101 receiver in the direction of the cockpit and air frame seems and walk along while scanning with the receiver.
7. A leak is indicated by a jump in the meter and a loud generated tone in the headset.
8. Once a leak is detected, pinpoint by switching the Mini-Concentrator attachment with the 1-Inch Acoustic Tip. Adjust the potentiometer down to locate the exact source of the leak.
9. Indicate the location by marking the leak, and repair. Verify repairs with UL101.

Benefit

When a technician has difficulty finding a cockpit or air frame leak that is causing aircraft down time because it cannot make pressure requirements it can take days to find the leaking seals using the traditional soap and bubbles or feel and listen methods.

The UL101 is much faster and more effective at locating leaks, even during ground operations. Leak location and identification is not impeded by ambient noise and, therefore, less guess work is involved. More leaks can be found and properly identified for repair, thereby decreasing lost flight time. Monitoring with the UL101 provides instantaneous, real-time information.