

Current as of Apr 1/10

ICE AND RAIN PROTECTION PROPELLERS DESCRIPTION AND OPERATION

1. PROPELLERS - DESCRIPTION AND OPERATION

A. Electric Propeller Deicing

The electric propeller deicer system includes an on-off switch (on the LH instrument subpanel), an ammeter, a timer, a brush assembly, slip rings and an electrically heated boot for each propeller blade. When the on-off switch is turned ON, the ammeter (near the centre of the instrument panel) registers the amount of current (2 bladed, 8 - 12 amps; 3 blade, 14 - 18 amps) passing through the system. If the current rises beyond the switch limit, an integral circuit breaker will cut off the power to the timer. The current flows from the timer (forward of instrument panel) to the brush assembly (mounted in front of the engine case) and is conducted by the brush assembly to the slip rings installed on the spinner backing plate. At serials D-10404 and after, CE-1024 and after, E-2069 and after, and EA-378 and after, the slip rings became part of an assembly attached between the engine hub and the propeller. The slip rings distribute current to the deicer boots on the propeller blades. Heat from the boots reduces the grip of the ice, which is then removed by the centrifugal effect of propeller rotation and by the blast of the airstream. The timer cycles power to the heating element on each blade. It takes three minutes for the timer to complete a cycle of 90 seconds on, 90 seconds off. Whenever the system is turned on, the ammeter in the instrument panel or subpanel registers the proper amperage, or zero amperage, depending on the phase the timer is in.