



Fig. 13-1. *Dual-element de-icing system—single-engine aircraft.*

electrical load by providing high heat at the inboard end and low heat at the outboard end. The HOTPROP® de-icer is still two cycle: 34 seconds of heat over the entire length of all blades and 34 seconds of no heat.

Twin-engine aircraft compound the power demand by adding another set of prop blades. Dual element systems still are the most common, but, as shown in Figure 13-2, the cycling is different. The sequence of these 34-second cycles is as follows: right outboard, right inboard, left outboard, left inboard. Rotational balance is assured the same way as with the single-engine aircraft system.

It is important to note that the protocol for the timer in the twin-engine aircraft system varies among aircraft. They do not necessarily reset to a “home” position when deactivated. Some do, some step, and some do neither one. You need to observe your system to understand which elements will heat up first, but the sequence will always remain the same.

One of the eeriest situations associated with flying occurs on a dark night, in between cloud layers, in icing conditions. Just the situation is enough to make the average pilot squirm, but then you turn on the prop de-ice. In a minute or so there is this horrendous WHUMP as the ice flying off the prop slams against the side of the fuselage. No matter how many times you experience that situation, that first WHUMP just about makes you jump out of your seat.