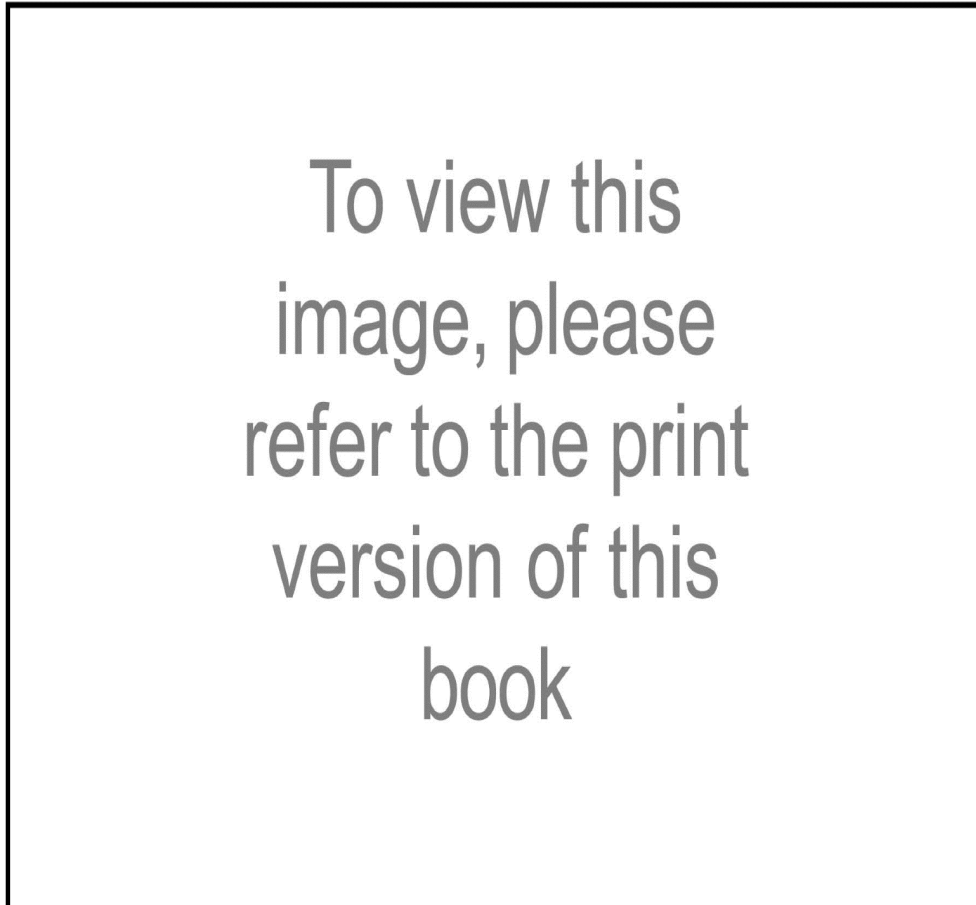


## Chapter Two



**Fig. 2-8.** *Schematic of a vertical velocity indicator.*

a sheet-metal vane is added to keep insects out of the tube when the aircraft is on the ground. In flight, airflow swings it open, while on the ground, gravity closes it.

Pitot tubes range in type from the simple bent piece of tubing described to a pitot head with static source and heat, as shown in Figure 2-10. Pitot anti-icing, accomplished by electrically induced heat around the tube, was developed in the 1940s by Aero Instruments for the U.S. Navy.

The most common cause of pitot failure is actual physical damage to the pitot tube itself. The next most common cause is heater burnout, primarily the result of using pitot heat on the ground. Third would be burning a pitot cover onto the tube, which is a particular problem with pitot-static combination probes because the plastic can literally melt into the static port.

Functionally, ram air enters the pitot tube and is brought to a complete stop, allowing pressure to build up to total free-stream pressure or “head” pressure. It is then transmitted