

to the diaphragm inside the airspeed indicator. Head pressure equals dynamic pressure plus static pressure, therefore head pressure minus static pressure equals dynamic pressure (indicated airspeed).

Static Port

The static port senses the ambient atmospheric pressure surrounding the aircraft. Ideally the port is located in the boundary layer of the fuselage. The column of air in the static port should be perpendicular to the local air velocity, which is exactly equal to the free-stream velocity of the airplane. If it is exposed to rushing air—from turbulence, for instance—the resultant ram-air pressure will cause the static pressure to increase and/or vary. Airflow passing by, which has a greater velocity than free stream, will cause lower-than-static

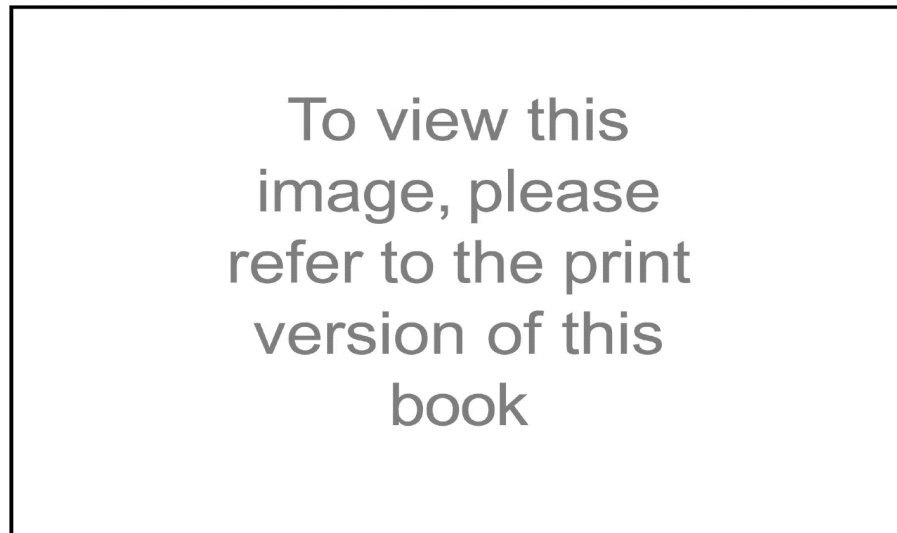


Fig. 2-9. *Pitot tube for a light plane.*

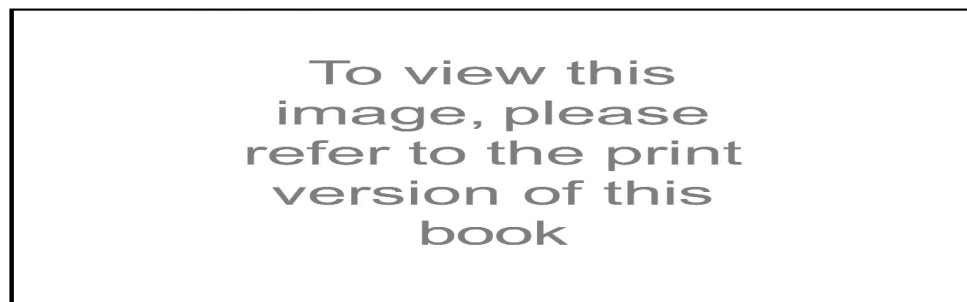


Fig. 2-10. *Heated pitot-static tube.*