

A BAROGRAPH

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Each of many ways of constructing a barograph uses the basic principle of a clock-driven drum which is marked upon by an altimeter-driven pen or stylus. Many errors are inherent in the simplest form so that the big problem for the home builder is to reach a balance between accuracy and complexity so that satisfactory results are obtained.

A very satisfactory and serviceable barograph can be made from an altimeter, clock and length of aluminum tube. I shall describe one home-built barograph that cost \$8.20 to construct and has given satisfactory service. It has proven to be as accurate and reliable as similar commercial barographs. The instrument described was designed to be simple,

easy to assemble and require as few changes in clock and altimeter as possible. This, combined with the desire for a range of 25,000 feet of altitude resulted in a moderate size.

The clock, altimeter and case determine the quality of the barograph. The clock must have sufficient power to drive the drum at constant speed and, if case dimensions are a consideration, should fit inside the drum. The author selected a "Baby Ben" alarm clock which was stripped of case, dial, hands and hour hand gear; retaining winding keys, setting knob, and the screws which held the outer case to the inner case. This particular clock has a double case - the inner case is retained and affords some protection to the clockwork as well as serving to attach the clockwork to the barograph case. Holes

are drilled in the base plate for the winding key and mounting screws.

The drum driving arm was constructed from .125 inch aluminum sheet (fig. 4) and attached to the minute hand shaft since a one-hour drum was desired (attaching the driving arm to the hour hand gear would provide a 12 hour drum). The shaft is allowed to project .125 inch above the driving arm to serve as the lower drum centering pivot and drum support. The upper drum pivot is a brass screw, conically pointed, threaded thru the drum hold down arm, fig. 1, to provide for proper adjustment of drum end play. The hold down arm is hinged to the case with the free end resting in a notch in the case side when in the closed position. A small piece of sheet rubber between the arm and the lid holds the arm securely in place when the lid is closed and latched.

The mounting plate should be of aluminum or brass, at least 1/16 inch thick. A box was constructed of 0.81 aluminum sheet for the original barograph, fig. 1; however, a base plate as shown in fig. 2 could be

