

Barographs FOR THE ONE THAT GOT Away

by Victor Mead Saudek

The "one that got away" is always a "Silver C" altitude or duration, and now and again to our eternal anguish, a "Golden C" altitude. Well, fellows, what are you agoing to do about it? It isn't as if a great many of you don't have barographs, but mainly because those who do, consider them to be magic boxes full of witch-craft.

That is exactly what they are, but, by knowing the combinations and incantations you should be able to determine the duration and altitude of almost every flight. In hopes that you will get the next flight "in the box," I'm going to give a blow-by-blow account of:

Servicing

The materials necessary here are:

1. The barograph just after a flight. It is sealed and maybe the trace is good for something.
2. A shallow pan at least 12" x 4" x 1".
3. A mixture of 2 parts denatured grain alcohol to one part shellac (or thereabouts), filling the pan in (2), above to a depth of at least $\frac{3}{4}$ ".
4. A piece of camphor gum or a smoky kerosene lamp base.
5. The regular .001" aluminum foil (very smooth paper works O. K.), cut to the dimensions of drum depth, and $\frac{3}{4}$ " greater than its circumference.
6. A thin straight rod about 12 or 15 inches long. $\frac{1}{16}$ " welding rod, or coat hanger wire is fine.
7. Record cards to keep track of each flight made.

Now we are ready to go. The drum is removed by untwisting the nut that holds it to the clock shaft, and it is then lifted off carefully so that none of the trace will be smeared off. It is wise to stop at this point and see if the following information is on the drum:

1. Barograph number.
2. Pilot's name (mark off each flight separately if more than one pilot was flying them. Record attempts may only contain one trace.)
3. Date (and time, if several separate barograms are made in one day).
4. Barometric pressure for time of flying, if there is no fixed baseline pen (corrected for temperature if barometric pressure is determined from a mercurial barometer—aneroid barometers are O. K.).
5. Ship flown (for your own amusement).

Next we fill the pan with the alcohol and shellac mixture and carefully remove the barogram from the drum. Remember that finger prints invariably wipe off the highest point of the trace, so beware. The best method is to pop the foil off the drum, grab the unsmoked end with the thumb and forefinger and run it through the solution so that it gets wet all over. Then let it dry. Burning the alcohol off is quicker, but may burn the lamp black off too! When good and dry, the trace is ready to

be evaluated, and may be handled freely as a permanent record of the flight.

To prepare the barograph for another flight, wrap the new smooth foil around the drum in the counter-clockwise direction as you look down on the top of the drum; draw it up as tightly as possible and clip the foil on. Be sure that the overlapping end of the foil points in the opposite direction to that of the drum rotation, so that the pen will not become fouled.

The next step is smoking the befoiled drum. A piece of camphor gum in an old ash tray or a kerosene lamp works O. K. The wire rod is spitted through the drum and the drum is revolved just above the flame. Spin it rapidly, but move it across the flame slowly if you want a smooth coating of lamp-black. Don't make it heavy or it will pile up on the pen point and make a wide line.

Be careful when you handle the drum now. You will have fewer accidents if you devise a way to carry the drum from the inside of the top. Before screwing it into position mark down the barograph number.

Before sealing for a flight, check these points:

1. Barograph number on drum.
2. Date on drum.
3. Pilot's name.
4. Ship's name and identification number.
5. Barometric pressure and temperature (only when there is no fixed base-line pen. Temperature only when reading mercurial barometer).
6. Draw base-line on drum if there is no fixed base-line pen.
7. Wind the clock.
8. Close (and seal if attempting an altitude record).
9. Fill out barograph card.
10. If it is to be a record flight, an N. A. A. observer must supervise the installation of the barograph and sign card. His signature and those of two witnesses must be notarized. In a goal flight record attempt, the pilot must sign a notarized statement with two witnesses, that he is attempting a goal flight, and name the goal.
11. Pad the instrument well, or better, suspend it on springs, or by rubber in your ship. The latter is required for record flights.
12. Don't forget to turn it on!

When you land, be sure to record the following:

Typical Barogram

