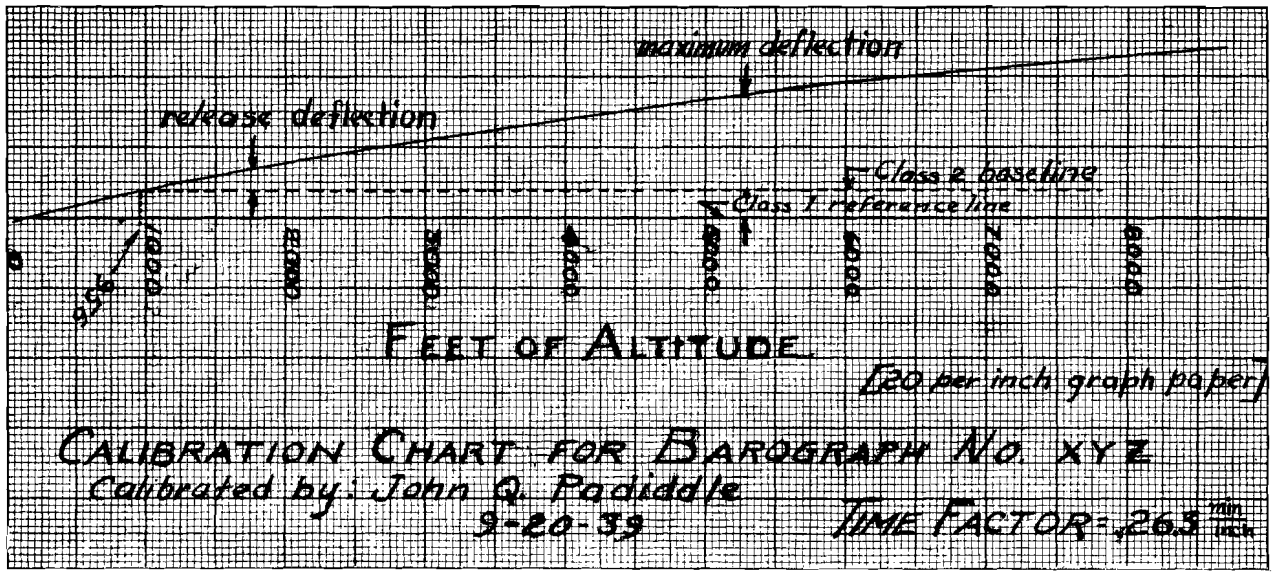

Pilot.

Glider identification number.

Time of landing.

Location: Give as accurately as possible, so that the correct distance may be credited to you.

Signatures and addresses of 2 witnesses of the landing.

Don't forget to turn off the barograph!

In record flights, contact the N. A. A., or the Soaring Society for advice on removing the barograph, unless you have previously made the necessary arrangements with the observer in charge of the attempt. The barograph musr be removed by a responsible individual with two disinterested witnesses all of whom must sign a notarized statement that the barograph was sealed and intact when it was removed. (It is not necessary that the instrument be sealed for distance attempts).

Evaluating:

Materials necessary to evaluate a barogram:

1. A pair of good dividers.
2. An evaluation (calibration) chart.
3. Barograph Record cards.
4. Altitude-pressure tables.
   (Smithsonian Meteorological Tables (at any library) are best, because they give temperature, corrections, etc., but NACA Technical Report No. 538 will do if the results do not have to be closer than 60 feet—for altitudes up to 7000 or 8000 feet).
5. Scale of inches, each inch of which is divided into at least 32nds—use a scale in tenths and 50ths if you can. This is for time evaluations.

There are two kinds of barographs, one has a fixed reference pen that automatically draws a base line near the bottom of the barograph. The other kind has none, and a base line must be made by putting the barograph pen against the drum and revolving the drum by hand. This line must immediately be identified by noting down at the top of the barogram the barometric pressure (if there is no fixed baseline pen), corrected for temperature if barometric pressure is determined from a mercurial barometer, or the equivalent pressure-altitude corresponding to this corrected barometric pressure. This equivalent altitude must be determined sooner or later, so if you have altitude tables handy, it is worth your while to mark it in feet. You will see later why this is a good idea.

All right, now let us do a class one barograph with a fixed reference pen.

The barogram has been fixed with shellac and we are able to handle it freely. Lay it flat, and by trial and error find the highest peak of the trace by *gently* sticking the dividers into the peak exactly at the bottom edge of the line and vary the dividers until the arc drawn by the other point exactly touches the very top of the base-line. In other words, you measure the width of the black space between the flight and base-lines. If the instrument has been calibrated the same way, you aren't cheating yourself at all, but are getting accurate information. Fudging by the width of a line is unsportsman-like. With this dimension held gingerly between the divider points, take your calibration curve (evaluation chart) and determine the altitude that that much deflection represents. Do the same for the point of release altitude if auto, winch or shock cord launching was used. If airplane towed, subtract the maximum altitude found on the airplane's barogram. The difference in feet between the glider's maximum and release altitudes is what you want and what you now have.

For class two barographs, the baseline drawn by revolving the drum represents a definite altitude above sea level. This can be determined by the barometric pressure (temperature corrected) of the air at the time the line was drawn. This pressure is transferred to feet of altitude by altitude-pressure tables.

Now, after this base altitude has been determined, run your eye along the bottom of the evaluation chart until you find, by interpolation if necessary, this base altitude in figures. Next, draw a vertical line from this number until it intersects the calibration curve. At this intersection, draw a horizontal line which now locates your barogram base-line on your evaluation chart. Then, with this determined, go through the steps for evaluation exactly as in class one, using this base-line as the reference line. Supposing this base-line is at 956 feet, and we have located the 956 foot base line. Then suppose the maximum altitude measured from sea level is 5,280 feet—mark it down. The end of the winch tow turns out to be 1,770 feet above sea level when measured from the base-line. That means that the pilot released 1770-956 or 814

(*Continued on page* 12)