READING THE THERMOGRAM

In order to determine the net temperature change produced by the reaction it is necessary to locate a point on the thermogram at which the temperature reached 63 percent of its total rise. This can be done easily using the graphic procedure described below and illustrated in Fig. 5, although other variations of this method can be used as well.

1. Place a straight edge over the preperiod drift line and extend this line well past the point at which the bomb was fired.

2. Move the straight edge to the postperiod drift line and extrapolate this line backward to the firing time. If there are fluctuations in the drift lines due to noise or other variations in the signal, use the best average when drawing these extrapolations.

3. Using a centimeter scale, measure the vertical distance, R, between the two extrapolated lines at a point near the middle of the reaction period.

4. Multiply the distance, R, by 0.63, then

5. Set the zero end of the centimeter scale on the extrapolated preperiod drift line and move the scale along this line to locate a vertical intercept with the thermogram which is exactly 0.63R above the preperiod drift line. Draw a vertical line through this point to intercept both drift lines.

6. Read the initial temperature, T_i, and the final temperature, T_f, at the points of intersection with the drift lines and subtract to determine the corrected temperature rise, ΔT_c :

$$\Delta T_c = T_f - T_i$$