Statistical Analyses of Industrial Property Retirements

By

ROBLEY WINFREY, M.S.
Research Engineer

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group methods of constructing survivor curves, which methods frequently result in stub curves.

The 18 type curves can be used for this purpose. The probable average life and type of distribution are selected without computation other than the calculation and plotting of the stub curve for which the probable average life is wanted. The method involves simply plotting the survivor curve (stub or completed curve) to the same scale that the 18 type curves are plotted using the ordinates in percent of the total number of units and the abscissas in *years*. For this method the type curves need to be drawn for definite average lives, say, for each 5-year interval from 5 to 50, making about 10 patterns of the same type curve on a sheet, as illustrated by Fig. 29.

If these type survivor curves and the stub survivor curve for which the probable average life is wanted are each drawn on transparent graphs, the individual stub curve can be superimposed on each of the 18 type sheets in turn until a satisfactory agreement is found. The stub curve is classified by the type curve which it fits best, and the probable average life estimated according to the position the individual curve occupies when superimposed upon the type sheet.

Figure 29 shows curves 13–2 and 56–1 plotted on the L_3 type sheet. By the location of curve 56–1 approximately parallel to the 15-year average-life type curve, it is readily seen that the stub curve is an L_3 type of about 13 years probable average life. As shown, stub curve 13–2 does not fit the L_3 type. In the upper right corner are curves for the R_1 type with curves 13–2 and 56–1 drawn in. Here it is seen that curve 13–2 parallels the R_1 10-year average-life curve at about 11.5 years probable average life and that curve 56–1 does not fit. In comparing a stub curve with these type sheets it is best first to smooth it by eye, so that its location and shape are more definite than can be judged from the plotted points only.

It is not feasible to work in percent of average life because the individual stub curve whose probable average life is sought cannot be so expressed. But since a given type curve has the same relative distribution for any average life it is possible to plot it for any number of average lives and then to compare the individual stub curve with this series of curves to determine the probable average life and type of the stub curve. The standards for each type curve as illustrated in Fig. 29 can be drawn to any suitable scale. That found satisfactory here was 10 inches to 100 percent surviving for the vertical scale and ¼ inch to 1 year for the horizontal scale. The graph paper used was a standard sheet, 11x16½ inches, ruled 20 divisions to the inch both ways.

The 18 type curves are expected to represent quite well all survivor curves commonly encountered in utility and industrial practices. For a given large organization, or for a group of smaller organizations of similar purposes, it may prove feasible to develop a set of standard curves embodying the company's own experience.