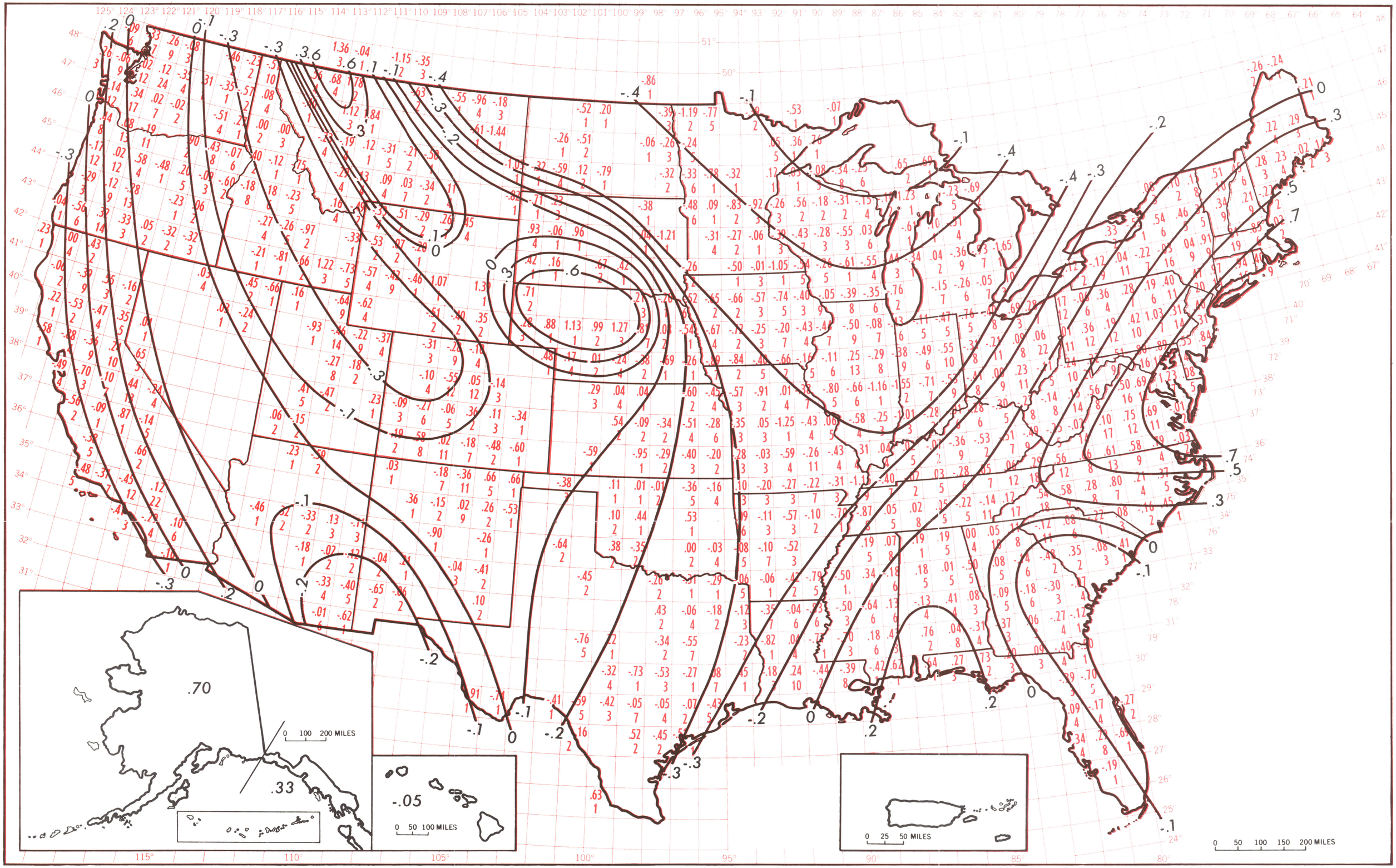

GENERALIZED SKEW COEFFICIENTS OF LOGARITHMS OF ANNUAL MAXIMUM STREAMFLOW

AVERAGE SKEW COEFFICIENT BY ONE DEGREE QUADRANGLES

Lower number in each quadrangle is number of stream gaging stations for which the average shown above it was computed

GENERALIZED SKEW COEFFICIENTS OF ANNUAL MAXIMUM STREAMFLOW LOGARITHMS*

The generalized skew map was developed for those guide users who prefer not to develop their own generalized skew relationships. The map was developed from readily available data. Users are encouraged to make detailed studies for their region of interest using the procedures outlined in Section V,B-2. It is expected that Plate I will be revised as more data become available and more extensive studies are completed.

The map is of generalized logarithmic skew coefficients of annual peak discharge. It is based on skew coefficients at 2,972 stream gaging stations. These are all the stations available on USGS tape files with drainage areas equal to or less than 3,000 square miles that had 25 or more years of essentially unregulated annual peaks through water year 1973. Periods when the annual peak discharge likely differed from natural flow by more than about 15 percent were not used. At 144 stations the lowest annual peak was judged to be a low outlier by equation 5 using $\overline{G}$ from figure 14-1 and was not used in computing the skew coefficient. At 28 stations where the annual peak flow for one or more years was zero, only the remaining years were used in computing the low outlier test and in computing the logarithmic skew coefficients. No attempt was made to identify and treat high outliers, to use historic flood information, or to make a detailed evaluation of each frequency curve.

The generalized map of skew coefficients was developed using the averaging technique described in the guide. Preliminary attempts to determine prediction equations relating skew coefficients to basin characteristics indicated that such relations would not appreciably affect the isopleth position. Averages used in defining the isopleths were for groups of 15 or more stations in areas covering four or more one-degree quadrangles of latitude and longitude.

The average skew coefficients for all gaging stations in each one-degree quadrangle of latitude and longitude and the number of stations are also shown on the map. Average skew coefficients for selected groups of one-degree quadrangles were computed by weighting averages for one-degree quadrangles according to the number of stations. The averages for various groups of quadrangles were used to establish the maximum and minimum values shown by the isopleths and to position the intermediate lines.

Because the average skew for 15 or more stations with 25 or more years of record is subject to time sampling error, especially when the stations are closely grouped, the smoothed lines are allowed to depart a few tenths from some group averages. The standard deviation of station values of skew coefficient about the isopleth line is about 0.55 nationwide.

Only enough isopleths are shown to define the variations. Linear interpolation between isopleths is recommended.

The generalized skew coefficient of -0.05 shown for all of Hawaii is the average for 30 stream gaging stations. The generalized skew coefficient of 0.33 shown for southeastern Alaska is the average for the 10 stations in that part of the State. The coefficient of 0.70 shown for the remainder of Alaska is based on skew coefficients at nine stations in the Anchorage-Fairbanks area. The average skew of 0.85 for these nine stations was arbitrarily reduced to the maximum generalized skew coefficient shown for conterminous United States in view of the possibility that the average for the period sampled may be too large.

*This generalized skew map was originally prepared for Bulletin 17 published in 1976. It has not been revised utilizing the techniques recommended in Bulletin 17B.