Upon completion of the examination, the VEs will grade the test papers. If the applicant is successful, the VEs will forward the candidate's application to a Volunteer-Examiner Coordinator (VEC). The VEs will then issue a certificate for sucessful completion of an amateur radio operator examination. The VEC will forward the application to the Commission's Gettysburg, Pennsylvania, facility.

[63 FR 68935, Dec. 14, 1998]

§ 1.958 Distance computation.

The method given in this section must be used to compute the distance between any two locations, except that, for computation of distance involving stations in Canada and Mexico, methods for distance computation specified in the applicable international agreement, if any, must be used instead. The result of a distance calculation under parts 21 and 101 of this chapter must be rounded to the nearest tenth of a kilometer. The method set forth in this paragraph is considered to be sufficiently accurate for distances not exceeding 475 km (295 miles).

(a) Convert the latitudes and longitudes of each reference point from degree-minute-second format to degree-decimal format by dividing minutes by 60 and seconds by 3600, then adding the results to degrees.

$$LATX_{dd} = DD + \frac{MM}{60} + \frac{SS}{3600}$$

$$LONX_{dd} = DDD + \frac{MM}{60} + \frac{SS}{3600}$$

(b) Calculate the mean geodetic latitude between the two reference points by averaging the two latitudes:

$$ML = \frac{LAT1_{dd} + LAT2_{dd}}{2}$$

(c) Calculate the number of kilometers per degree latitude difference for the mean geodetic latitude calculated in paragraph (b) of this section as follows:

KPD_{lat} = 111.13209 − 0.56605 cos 2ML + 0.00120 cos 4ML

(d) Calculate the number of kilometers per degree of longitude difference for the mean geodetic latitude calculated in paragraph (b) of this section as follows:

KPD_{lon} = 111.41513 cos 5ML − 0.09455 cos 3ML + 0.00012 cos 5ML

(e) Calculate the North-South distance in kilometers as follows:

$NS = KPD_{lat} \times (LAT1_{dd} - LAT2_{dd})$

(f) Calculate the East-West distance in kilometers as follows:

$EW = KPD_{lon} \times (LON1_{dd} - LON2_{dd})$

(g) Calculate the distance between the locations by taking the square root of the sum of the squares of the East-West and North-South distances:

$$DIST = \sqrt{NS^2 + EW^2}$$

(h) Terms used in this section are defined as follows:

(1) $LAT1_{dd}$ and $LON1_{dd}$ are the coordinates of the first location in degree-decimal format.

(2) $LAT2_{dd}$ and $LON2_{dd}$ are the coordinates of the second location in degree-decimal format.

(3) ML is the mean geodetic latitude in degree-decimal format.

(4) KPD_{lat} is the number of kilometers per degree of latitude at a given mean geodetic latitude.

(5) KPD_{lon} is the number of kilometers per degree of longitude at a given mean geodetic latitude.

(6) NS is the North-South distance in kilometers.

(7) EW is the East-West distance in kilometers.

(8) DIST is the distance between the two locations, in kilometers.

[70 FR 19306, Apr. 13, 2005]

§ 1.959 Computation of average terrain elevation.

Except as otherwise specified in §90.309(a)(4) of this chapter, average terrain elevation must be calculated by computer using elevations from a 30 second point or better topographic data file. The file must be identified. If a 30 second point data file is used, the elevation data must be processed for intermediate points using interpolation techniques; otherwise, the nearest