

OPERATOR SERVICES INFORMATION TARIFFAPPENDIX B - Vertical (V) and Horizontal (H) Coordinates

The airline mileage between two cities can be calculated using the Vertical (V) and Horizontal (H) Coordinates as obtained by reference to AT&T's Tariff F.C.C. No. 10 according to the following methods:

To determine the mileage between any two cities proceed as follows:

1. Obtain the "V" and "H" coordinates of the two cities. Obtain the difference between the "V" coordinate and the "H" coordinates.  
  
Note: The difference is always obtained by subtracting the smaller coordinate from the larger coordinate for both V and H.
2. Divide each of the differences obtained in 1 by three, rounding each quotient to the nearer integer.
3. Square these two integers and add the two squares. If the sum of the squares is greater than 1777, divide the integers obtained in 2 by three, and repeat step 3. Repeat this process until the sum of the squares obtained in 3 is less than 1778.
4. The number of successive divisions by three in steps 2 and 3 determine the value of "N". Multiply the final sum of the two squares obtained in step 3 by the multiplier specified in the following table for this value of "N" proceeding:

| <u>N</u> | <u>Multiplier</u> | <u>Minimum Rate Mileage</u> |
|----------|-------------------|-----------------------------|
| 1        | 0.9               | -                           |
| 2        | 8.1               | 41                          |
| 3        | 72.9              | 121                         |
| 4        | 656.1             | 361                         |
| 5        | 5,904.9           | 1,081                       |
| 6        | 53,144.1          | 3,241                       |

EFFECTIVE: April 1, 2024

ISSUED BY:

Vice President, Federal Regulatory  
1300 I Street NW  
Washington, DC 20005

Transmittal #12

OPERATOR SERVICES INFORMATION TARIFFAPPENDIX B – Vertical (V) and Horizontal (H) Coordinates (Continued)

5. Obtain square root of product in 4 and, with any resulting fraction, round up to next higher integer. This is the rate mileage except that when the mileage so obtained is less than the minimum rate mileage shown in 4, preceding, the minimum rate mileage corresponding to the "N" value is applicable.

Example:

The rate mileage between New York, New York and Chicago, Illinois is calculated as follows:

|                                                                                                    | <u>V</u>     | <u>H</u>       |
|----------------------------------------------------------------------------------------------------|--------------|----------------|
| (a) New York                                                                                       | 4,997        | 1,406          |
| Chicago                                                                                            | <u>5,986</u> | <u>3,426</u>   |
| (b) difference                                                                                     | 989          | 2,020          |
| (c1) divide each difference by three and round to nearer integer, 330 and 673 in this example      |              |                |
| (d1) square integers and add,                                                                      | 330 x 330 =  | 108,900        |
|                                                                                                    | 673 x 673 =  | <u>452,929</u> |
| sum of squared integers                                                                            |              | 561,829        |
| sum of squared integers is greater than 1,777, so divide integers in (c1) by three and repeat (d1) |              |                |
| (c2) divide integers in (c1) by three and rounding = 110 and 224                                   |              |                |
| (d2) square integers and add,                                                                      | 110 x 110 =  | 12,100         |
|                                                                                                    | 224 x 224 =  | <u>50,176</u>  |
| sum of squared integers                                                                            |              | 62,276         |
| sum of squared integers is greater than 1,777, so divide integers in (c2) by three and repeat (d2) |              |                |
| (c3) divide integers in (c2) by three and rounding = 37 and 75                                     |              |                |

EFFECTIVE: April 1, 2024  
ISSUED BY:

Vice President, Federal Regulatory  
1300 I Street NW  
Washington, DC 20005

Transmittal #12

OPERATOR SERVICES INFORMATION TARIFFAPPENDIX B – Vertical (V) and Horizontal (H) Coordinates (Continued)

## 5. (Continued)

|      |                          |                  |       |
|------|--------------------------|------------------|-------|
| (d3) | square integers and add, | $37 \times 37 =$ | 1,369 |
|      |                          | $75 \times 75 =$ | 5,625 |
|      | sum of squared integers  |                  | 6,994 |

This sum of squared integers is greater than 1777, so divide integers in (c3) by three and repeat (d3)

(c4) divide integers in (c3) by three and rounding = 12 and 25

|      |                          |                  |     |
|------|--------------------------|------------------|-----|
| (d4) | square integers and add, | $12 \times 12 =$ | 144 |
|      |                          | $25 \times 25 =$ | 625 |
|      | sum of squared integers  |                  | 769 |

This sum of squared integers is less than 1,778 and was obtained after four successive divisions by three, therefore, "N" = 4.

|     |                                                        |   |              |
|-----|--------------------------------------------------------|---|--------------|
| (e) | Multiply final sum of squared integers by factor 656.1 |   | 769          |
|     | (corresponding to "N" = 4) =                           | x | <u>656.1</u> |
|     |                                                        |   | 504,540.9    |

(f) Square root of 504,540.9 = 710 and a fraction, which is rounded up to 711 miles (fractional miles are considered full miles). The 711 miles is larger than the minimum of 361 miles applicable when "N" = 4, so the rate mileage is 711 miles.

EFFECTIVE: April 1, 2024

ISSUED BY:

Vice President, Federal Regulatory  
1300 I Street NW  
Washington, DC 20005

Transmittal #12

