Determination of Airline Mileages

(A) To determine the rate distance between any two rate centers proceed as follows:

(1) Obtain the V and H coordinates for each rate center.

(2) Obtain the difference between the V coordinates of the two rate centers. Obtain the difference between the H coordinates.[1]

(3) Divide each of the differences obtained in 2. by three, rounding each quotient to the nearer integer.

(4) Square these two integers and add the two squares. If the sum of the squares is greater than 1777. divide the integers obtained in 3 by three and repeat step 4. Repeat this process until the sum of the squares obtained in 4 is less than 1778.

(5) The number of successive divisions by three in steps 3 and 4 determines the value of N. Multiply the final sum of the two squares obtained in step 4. by the multiplier specified in the following table for the value of N preceding.

N	Multiplier	Minimum Rate Mileage
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

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

(a) EXAMPLE:

The message rate difference is required between Phenix City, Alabama and Atlanta, Georgia.

	V	H
(1) Atlanta	7260	2083
Phenix City	7559	2047
(2) Difference	299	36

Note 1: The difference is always obtained by subtracting the smaller coordinates from the larger coordinate.

(3) Dividing each difference by three and rounding to nearer integer = 100 and 12.

(4) Squaring integers and adding,

100 x 100	=	10000
12 x 12	=	144
Sum of squared integers		10144

(5) Sum of integers is greater than 1777 so divide integers in (3) by three and repeat (4).

(6) Dividing integers in (3) by three and rounding = 33 and 4.

(7) Squaring integers and adding,

33 x 33	=	1089
4 x 4	=	16
Sum of squared integers		1105

(8) The sum of the squared integers is less than 1778 and was obtained after two successive divisions by three, therefore N = 2.

(9) Multiply final sum of squared integers by factor 8.1 (corresponding to N = 2)

1105	
x 8.1	
8950.5	

(10) Square root of 8950.5 = 94 and a fraction which is rounded up to 95 miles (fractional miles being considered full miles). The 95 miles is larger than the minimum of 41 rate miles applicable when N = 2, so the message rate mileage is 95 miles.