ADVISORY CIRCULAR

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

SUBJECT: AIRPORT REFERENCE POINT

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1. PURPOSE. This advisory circular defines and presents the method for calculating an airport reference point.

2. CANCELLATION. This advisory circular cancels Airport Engineering Data Sheet No. 15, Airport Control References.

3. REFERENCES.

    a. Advisory Circular 150/5310-2, Airport Planning and Layout Plans.

    b. Federal Aviation Regulations, Part 77, Objects Affecting Navigable Airspace.

4. DEFINITION.

    Airport Reference Point (ARP). An airport reference point is a point having equal relationship to all existing and proposed landing and takeoff areas.

5. DISCUSSION. The airport reference point is used to geographically locate the airport and to reference zoning criteria and obstruction clearance surfaces normally associated with the airport. It is used for horizontal control only and no elevation is established for the ARP. The location of this point is computed and no weight is given to runway width, thickness, or composition. (A unity runway width is used.)

    To be a meaningful airport reference point, the point must be computed to acknowledge the ultimate runway or landing area lengths proposed for development. Those areas that have been closed or abandoned should not be included in the computation. (The ultimate development is customarily shown on the currently approved airport layout plan.)

If there is no approved airport layout plan, the areas to be considered are those existing plus those which have been granted airspace approval.

The ARP is computed or recomputed as infrequently as possible. The only time that a recomputation is needed is when the proposed ultimate development is changed.

6. SAMPLE COMPUTATION. The following procedure may be used to determine the location of the airport reference point:

    a. Establish two base lines perpendicular to each other as shown in Figure 1, Appendix 1. Let the northerly base line be known as B and the westerly as A.

    b. Establish the midpoint of each runway or landing strip.

    c. Determine the perpendicular distance from the base lines to the midpoints.

    d. Calculate the moment of areas for each base line as shown in Figure 2, Appendix 1.

    e. Divide each moment of areas by the sum of areas to determine distance of the ARP from each base line.

    f. The location should then be converted into latitude and longitude.

7. ACCURACY. The latitude and longitude should be computed to the nearest second. Coordinates to the nearest tenth of a second may be needed where navigational aids exist or are proposed for installation. Coordination with the appropriate FAA Airway Facilities area office should be made to ascertain the need for accuracy closer than the nearest second.

8. HOW TO OBTAIN THIS PUBLICATION. Obtain copies of this circular from the Department of Transportation, Distribution Unit, TAD-484.3, Washington, D.C. 20590.

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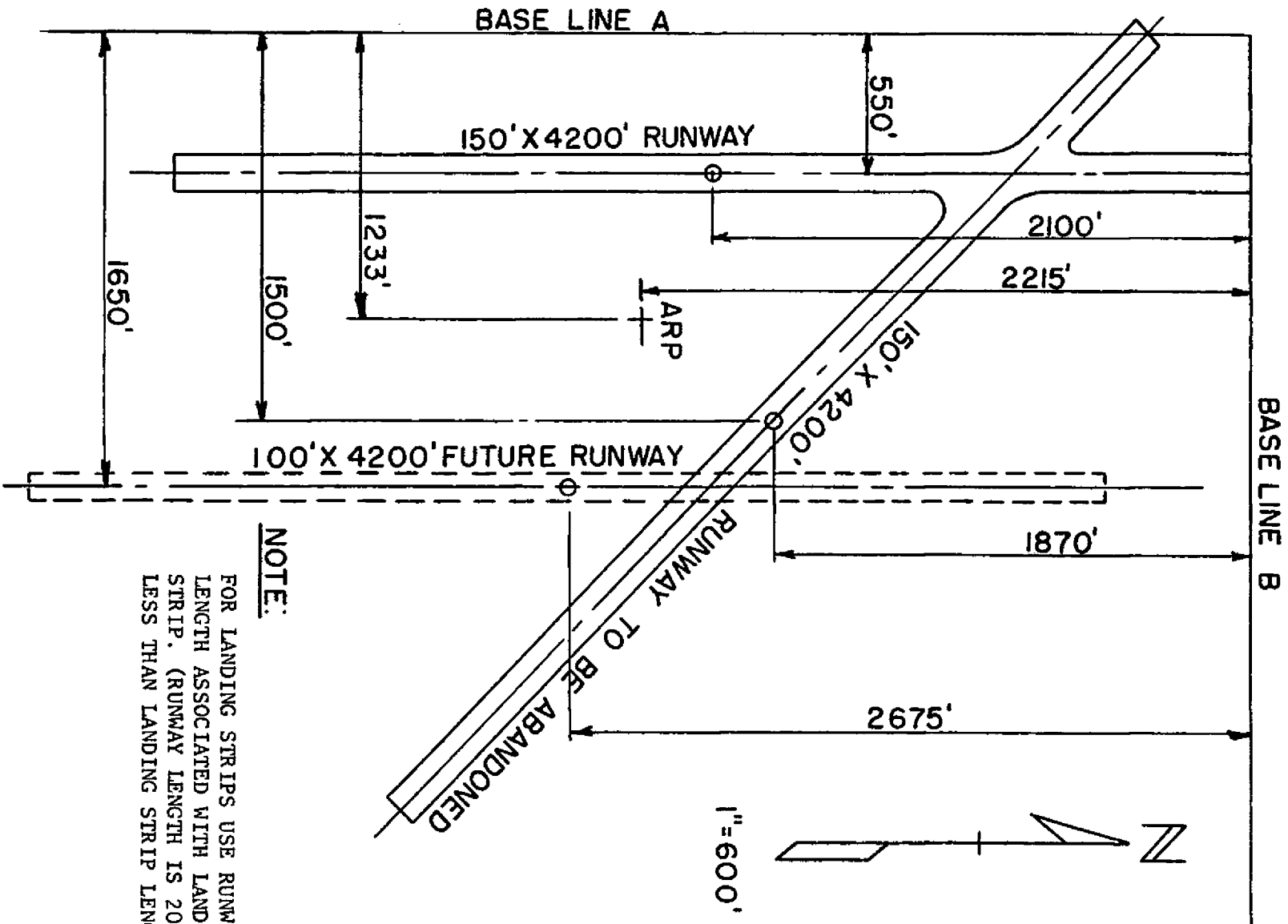Deputy Director
Airports Service

FIGURE 1. SAMPLE LAYOUT

BASE LINE A

150' X 4200' RUNWAY

550'

1233'

1500'

1650'

2100'

2215'

ARP

100' X 4200' FUTURE RUNWAY

150' X 4200'

RUNWAY TO BE ABANDONED

BASE LINE B

1870'

2675'

1"=600'

N

NOTE:

FOR LANDING STRIPS USE RUNWAY
LENGTH ASSOCIATED WITH LANDING
STRIP. (RUNWAY LENGTH IS 200'
LESS THAN LANDING STRIP LENGTH)

BASE LINE A:

$$4,200 \times 550 = 2,310,000$$
$$4,200 \times 1,500 = 6,300,000$$
$$\underline{4,200} \times 1,650 = \underline{6,930,000}$$
$$12,600 \qquad\qquad 15,540,000$$

$$\bar{x} = \frac{15,540,000}{12,600} = 1,233$$

BASE LINE B:

$$4,200 \times 1,870 = 7,854,000$$
$$4,200 \times 2,100 = 8,820,000$$
$$\underline{4,200} \times 2,675 = \underline{11,235,000}$$
$$12,600 \qquad\qquad 27,909,000$$

$$\bar{y} = \frac{27,909,000}{12,600} = 2,215$$

FIGURE 2. SAMPLE COMPUTATION - AIRPORT REFERENCE POINT

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