

Jet-age Runway Problem Solved?

“Flight” Reader Offers Two Space-saving Solutions of Breathtaking Simplicity

MUST airports continue to grow bigger and bigger? Need runways get longer and longer? It looks as if the ever increasing speed of jet aircraft must be matched by ever increased length of runway to get the aircraft into the air and down again with an adequate margin of safety. While it is true that much thought is being given to VTOL (and developments are not unpromising), it would seem that conventional designs of jet-propelled aircraft and the straightforward landing run and take off will be with us for a long time. The questions are, what length of runway must be provided at major airports to accommodate future jet transports, and what are the limiting factors? Obviously there is a limit to the amount of land available in the heavily built up countries of industrial Europe. London Airport covers four and a half square miles of land of high value. The capital outlay involved is enormous and few municipalities would be able and willing to find the money for aerodromes of this size, even if the requisite sites could be found. The same limiting factors obtain in some degree in extending existing aerodromes.

Consideration of these and allied problems has led the author to the conclusion that the upper limit of runway length and aerodrome size is already in sight. With some diffidence, he offers an entirely new approach to the problem.

A circular configuration would appear to solve at one time the problem of runway length and ground area. Fig. 1 shows the diameter of an entire airport as 1,000 yd and having an area of

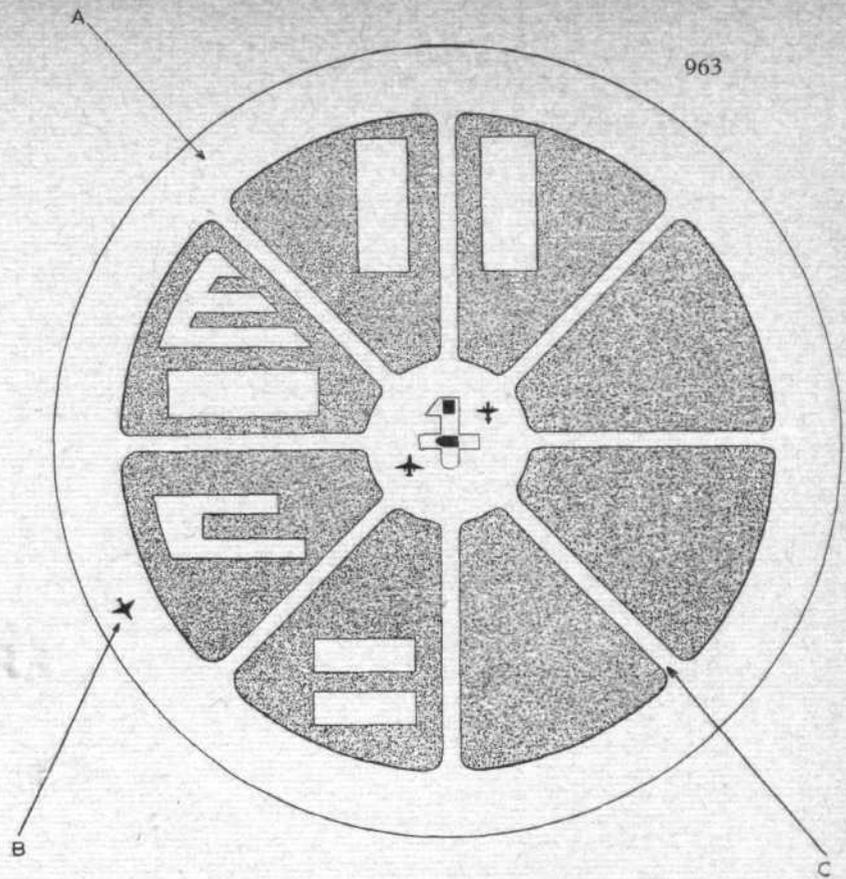
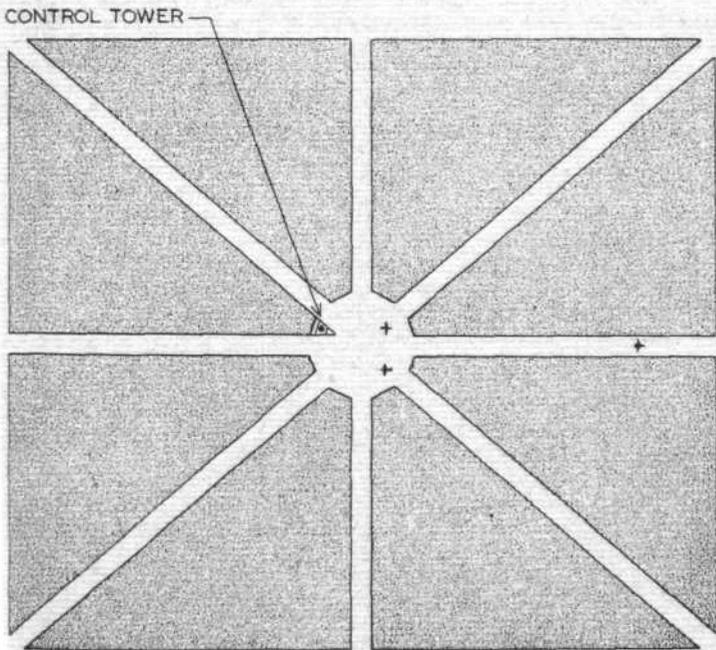


Fig. 1. Plan view of the Tempest circular airport with endless runway. One lap=two miles. Total area of site, 165 acres only. A, banked circular runway; B, aircraft begins take-off run downwind (thus gathering flying speed more quickly) and takes off on opposite side of airport into wind; C, direct radial taxi-track, particularly valuable in fog.



Figs. 4 and 5. Plan and (below) enlarged elevation of Tempest Scheme 2, the elevated airport, of less than 200 acres. Gravitational effects serve both to accelerate landing runs and to shorten take-offs. The plan form, incidentally, would be of navigational value in assisting pilots to recognize the airport as being of British nationality.

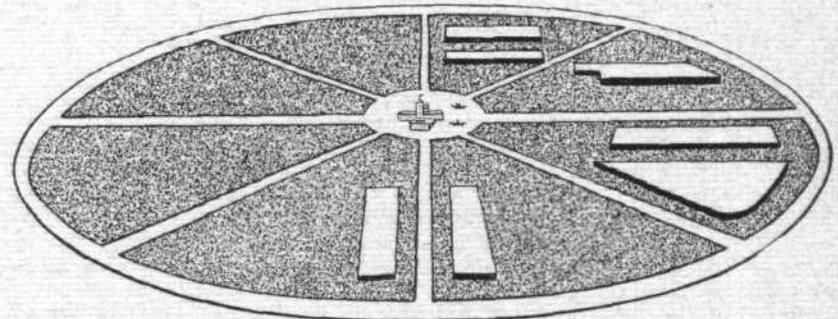


Fig. 2. Perspective view of the proposed airport.

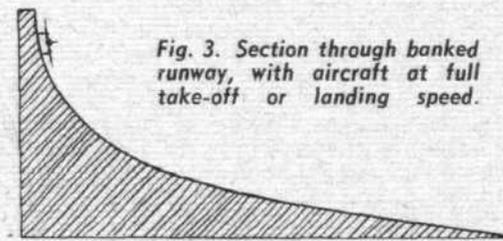


Fig. 3. Section through banked runway, with aircraft at full take-off or landing speed.

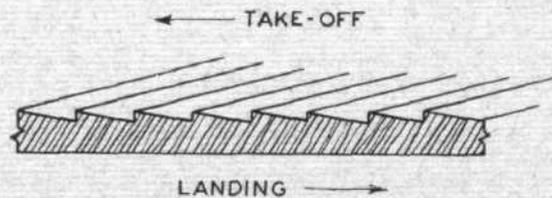


Fig. 6. Detail of runway surface designed further to shorten landing run. Pilots taking off would find it easy (and, indeed, desirable) to get airborne without delay.

