

Letters to the editor

The Case for the Convertible Rotor—a different V-port . . .

With reference to Mr. Hafner's paper in the August and September 1971 Journals, would it be possible to put the following suggestions to him, please?

Referring to Fig. 12, VTOL port, might it not be better to utilise a hollow Coliseum type of building, with walls as high as possible, containing sound-proofed offices, apartments, business premises, etc? The idea being to put the helicopter/VTOL landing area at ground level so that, through easy direct openings, access could be gained immediately to cars, taxis, underground systems, etc, while noise could be contained within the Coliseum until the aircraft were at a reasonable height.

The building would be circular in plan for preference, but might well be adapted from existing city layouts, with traffic passing freely under or around it, such as might be imagined in Piccadilly Circus, London, or the big cathedral square in Milan.

The main requirement would be for rapid handling of passengers and/or goods — certainly no maintenance should be allowed and any unserviceable machine should have its rotors folded and be ground transported back to base immediately by the offending operator. By operating at ground level, the need for expensive reinforced roofs, elevators, etc, would be entirely eliminated and cost and transit times greatly reduced. No refuelling should be permitted, particularly in a city centre. Traffic control would need to be strict and accurate—normally *à la* American shuttle practice without stopping engines while setting down and picking up passengers and/or goods.

The whole idea arose from the days of the infernally noisy Rotodyne, i.e. a high, enclosed, hollow building, with direct ground level rapid access/egress.

It would be most interesting to know Mr. Hafner's views—and those of others directly interested.

A. W. J. SMITH

C.Eng. (Associate Fellow)

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. . . and Mr. Hafner's reply

There are a number of reasons which prevent me from agreeing with the proposal by Mr. Smith.

1. The Coliseum type of building would be one surrounding the V-port in Fig. 12. It would be far greater and more expensive than the V-port shown in this figure. The ground occupied by the V-port is thus utilised for VTOL operations only and additional ground is needed for the activities in the Coliseum. Thus overall economics of the Coliseum scheme are substantially inferior to that shown in Fig. 12, where all these activities are concentrated on less ground and in a smaller building.
2. The VTOL aircraft operating from ground level goes through a terminal vertical flight channel which is about ten stories longer than that from the elevated level. This means a serious operational penalty.
3. From the noise aspect, the difference between the two schemes is that the ground level operation involves 'additional duration of flight', i.e. that between the street level and the top of the Coliseum, which produces noise mainly inside

the Coliseum. The remainder of the noise produced is much the same in both cases, i.e. once the aircraft is at the top of the Coliseum the noise spreads into the surrounding space very much like the scheme shown in Fig. 12. There is thus no significant noise difference in the two schemes for the areas in the immediate vicinity of the V-port.

4. There is a basic need for a multi-level car park as part of the V-port. It is far more practical to have the car park arranged as shown in Fig. 12 than as part of the Coliseum. In the latter case the passenger would have to park the car probably on a level well above street level, and he would then have to return to the street level and proceed to the V-port. A much more time-consuming procedure than that in the former case.
5. The reinforcing of the roof for roof-top operation is not a serious matter as there is only the need to distribute the high local loads (wheel loads). The snow load on the roof, which is a design case for all roofs, is far greater than the weight of all VTOL aircraft, which can be accommodated on the roof.
6. Refuelling at the V-port is essential and there is no fire danger with properly designed equipment, i.e. underground storage tanks.
7. I accept that in the case of roof-top operation there is need for a built-in crane to permit aircraft that cannot be repaired quickly on site to be lowered to street level for ground transportation to the nearest maintenance unit.

RAOUL HAFNER
(Fellow)

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