

From 1942-1946 he was Regional Planning Officer to the Department of Health for Scotland, and from 1946-1950 he was Regional Planning Officer (London) to the Ministry of Town and Country Planning. He is now Headquarters Planning Officer in the Ministry of Local Government and Planning, being concerned with research into planning principles, standards and techniques

Sites for Rotor Stations—Some Town Planning Considerations.

By F H LITTLE, A R I B A, A M T P I

The previous speaker has briefly stated the requirements which for satisfactory operation of a helicopter service should govern the siting of a Rotor Station they may be summarised as—commercially “a central location in the town, with convenient access by road and rail”, and—operationally “relative freedom from local ‘smog’ and from high obstructions”

It is probable that the *travelling* public also would describe their chief requirement as “a central location and convenient road and rail access”, but when the question of siting is viewed disinterestedly—as it must be by the town planning authority—when account is taken of the probable effect that the Rotor Station, its use and its situation, may have upon the public in general, and on the owners and occupiers of adjacent property in particular—a rather different set of criteria must be considered

The planning problem involved in the siting of a Rotor Station in or near the central area of a town will be settled very largely by the extent to which it may be possible to make this new type of user into a “good neighbour”. Competition for central area land is keen, and planning authorities have a public duty to encourage the full economic use of all parts of the central area this is largely secured by insuring, through use of the powers of control given by the Town and Country Planning Act, 1947, that the interests of adjacent owners, and of the general public, are protected from any form of development that will cause annoyance or danger, or which will unduly increase traffic congestion

The siting of a Rotor Station appears likely to raise the following problems

(1) Danger of accidents, (2) Noise nuisance, (3) Traffic congestion, and, depending largely on the gravity of the three problems

(4) Economic land use implications

These four questions will be examined briefly in the light of possible advances that may be expected in multi-engined helicopter design—in order to assess the size of the problem of assimilating a Rotor Station into the central area of a large town

Danger

Danger of injury to life and property, however remote, may arise from flying, over any part of the built-up area but especially in the vicinity of the Rotor Station. In regard to the general hazard, it can be assumed that the reliability of the multi-engined helicopter will have been demonstrated before

any action is taken to establish a Rotor Station in the heart of a built-up area, but in regard to the danger from accidents during landing and taking off, much may depend on the siting and design of the Station. Probably the most obvious way to reduce risk to the public, apart from providing an ample area for the "hoverway," will be to locate the Rotor Station itself where it is surrounded by some form of development which is normally occupied by few people—for example, by storage warehousing, railway yards, water or some type of open ground.

Noise

The degree of noise nuisance likely to be caused by the multi-engined helicopter can at present only be surmised. Anything approximating to the noise of fixed-wing aircraft, in low flight and especially at the take-off, would render the operation of regular services over built-up areas almost intolerable, and make the satisfactory selection of in-town sites an impossible planning task. It must therefore be hoped, and for present purposes assumed, that engine noise will be reduced to a degree that is comparable with noises accepted now as normal—such as arise from road traffic, railways and manufacture—in the central areas of large towns. On this assumption, the problem of engine noise need only be considered in relation to its effect on development in the vicinity of the Rotor Station, and may be dealt with in one of two ways.

- (a) either by siting the Station in an area already noisy, where added noise will be unnoticed—e.g., near a railway station or goods yard, or near an area of heavy industry,
- (b) or by siting the Station in an area where there are likely to be few people to be disturbed by noise—e.g., in or near open areas such as river, or allotments, or in an area developed for storage or warehousing.

Traffic

Because rapid and easy access is essential to successful operation, the choice of sites suitable for the Rotor Station will in most large towns be limited by the congestion of traffic already existing in the central area, and any appreciable increase in road traffic, expected to be generated by the Station itself, will further decrease the chances of obtaining a central site.

The amount of vehicular traffic likely to be generated by the Rotor Station is not easy to forecast. On the basis of a maximum hourly movement of ten helicopters, each carrying some 30 passengers, it can be seen that a Terminal Station might on occasions handle up to 600 passengers per hour. Although some of these might be conveyed to or from the Station by station buses, or might use public transport, it is probable that a large proportion would travel by private car or taxi, so that a reasonable maximum allowance would be for some 200-400 vehicles per peak hour, or three to six per minute. The more conveniently the Rotor Station is related to other local public transport, the lower the volume of additional private car and taxi traffic is likely to be. These figures in any case represent a peak volume, based on maximum turn around of helicopters at a Terminal, and more normal operating conditions at an *intermediate* Rotor Station might be expected to generate appreciably less than this volume per average hour. Nevertheless, the need to arrange for the circulation and parking of a large number of vehicles at the Station, and to prevent them suffering delay and increasing

congestion in the streets, will be important factors both in the location and in the detailed layout of the site

Implications

Consideration of each of these three aspects of danger, noise and traffic—which to some degree are likely to be inherent in urban helicopter operation—leads in every case to the conclusion that a Rotor Station site should be *outside* the true Central Business Area of any large existing town

This does not imply that a satisfactory “in-town” site cannot be found. In a New Town, for example, there is a special opportunity to plan the central area in such a way that a Rotor Station may be satisfactorily incorporated. In most existing large towns the central business area is encircled by a fringe of mixed users on less valuable land. Similarly blighted areas are commonly found alongside railway yards and tracks, extending radially from the Town Centre, and in many cases these areas have been already cleared by bombing.

In the replanning of many towns, where these conditions are found, the opportunity for early redevelopment in such areas is being used to lay out major road links or by-passes designed to relieve the congestion on central area streets. The purpose of these roads is to help to redistribute traffic entering and leaving the Central Area, to provide for more direct and rapid movement between important traffic points, and to serve the major traffic generators, such as the bus and rail stations, wholesale markets and car parks. These roads will open up extensive areas for redevelopment, and it is in such areas that the Rotor Station should find an ideal location, capable of fulfilling all the various planning requirements that have been described.

INTRODUCTION BY THE CHAIRMAN

Mr L S WIGDORTCHIK. Our next speaker this afternoon is Mr R S COLQUHOUN, who also has asked me to say that he is speaking as an individual and not as a representative of his Ministry. Mr Colquhoun is a Chartered Civil Engineer on the Headquarters Staff of the Ministry of Local Government and Planning. He was educated at the City and Guilds Engineering College and Harvard University. He has worked on a variety of civil engineering and building projects in Europe, Canada, India and the Far East. He served in the Royal Indian Engineers from 1941-1946, specialising in the rapid construction of forward airfields; he joined the staff of the Ministry of Town and Country Planning in 1946, and has been associated with many engineering aspects of the development of new towns.

Rotor Stations—Some Architectural and Engineering Aspects.

By R S COLQUHOUN, A M I C E, A M T P I

Previous papers have dealt with the operational and planning criteria for Rotor Stations. The architectural and engineering aspects will derive directly from the site selected in accordance with these requirements. Such