A NETWORK ANALYSIS OF AIRPORT ACCESSIBILITY IN SOUTH HAMPSHIRE

A Comment by F. A. Sharman*

The ingenious and elaborate treatment of airport surface accessibility described in the paper by Harvey W. Armstrong1 and used in the South Hampshire Regional Studies suffers from some of the serious defects inherent in the method used by the Roskill research team. The end product is a map purporting to show the variation of accessibility for airport purposes of a hypothetical airport located anywhere within the region studied, and the results given are indeed sensational. According to the method of measurement used, a violent variation exists, so that whilst large tracts of the region are credited to accessibility values between 100 and 400 million units, including the existing Southampton Airport at Eastleigh with 305 million units, others exist which could be credited with over 1,600 million units and the airport site at Hurn only scores 3--8 million.

The author concludes that, although the South Hampshire airport study recommended Hurn as the regional airport, there is nothing to worry about, since surface access is only one of the many factors in airport location. Furthermore, the author believes that Hurn would have scored better if the boundary taken had not unfortunately excluded a significant part of the Hurn catchment.

The fact is that one cannot handle surface access problems without having a fairly specific idea of the variation in demand for airport usage with an appropriate access parameter. The Armstrong study uses a concept of journey time but does not introduce any concept of behavioural cost of the journey as a whole (that is to say, the cost of the flight as well as of the surface access) by which to dilute the effect on imputed accessibility of the positional parameters. If we are going to use figures at all to describe a concept of airport accessibility for a given distribution of population, these figures must surely bear some such relation to each other as will allow them to be inserted into a cost–benefit analysis after being properly weighted in relation to other factors such as environmental effect and considerations of air traffic control.

In the work carried out for the evidence by Essex and other counties to the Roskill Commission, described in a paper in Regional Studies for September 1971 entitled “The Third London Airport as a Project Assessment Problem”, trees were worked out for airport sites depending upon cost assessments for different travel modes according to available routes. It would theoretically be possible to construct accessibility contours based on total population behavioural access costs by working out trees for a grid of assumed airport positions; but this would be intolerably tedious.

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In any real case the shortlisting is still best done by the kind of heroic assumption used by the Roskill team in their shortlisting performance, with a subsequent analysis for alternative sites using a behavioural cost technique of some kind. The temptations of mathematical elaboration from increasingly meaningless assumptions are to be avoided at all costs.