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AN ANALYSIS OF THE SKYLON INFRASTRUCTURE

**Abstract**

Past work on both the HOTOL and Skylon projects have extensively studied the technical aspects of the infrastructure of which it forms a part. However this past work simply looked at the long term potential and had not assessed how the elements fit within the Skylon development programme. This paper reports on a study specifically looked at this aspect by creating an overall infrastructure development programme. A particular emphasis was placed on identifying the infrastructure elements that are required to be operational during the test flight programme and therefore will need to be developed in parallel with the main vehicle.

These parallel infrastructure systems fall into three categories. The first category is those systems, such as the spaceport, that are essential to the basic operation of Skylon and without which it could not fly. The second category is those systems that are essential to enable Skylon to conduct missions key to capturing the main launch system market and therefore has an impact on its commercial viability, for example an upper stage that can carry large communication satellites into GTO. The third category is systems, which, while not essential to Skylon's entry into service, do have some utility that makes their parallel development desirable, for example in this category would be an in-orbit crew transport system.

Although the total cost of developing the parallel systems in the first two categories is of the order of *5 billion, they all have high market potential and thus could potentially be funded on the same commercial basis as the main Skylon*