

# **12th Reinventing Space Conference (Nov 2014, London UK)**

## **Launch Systems**

### **AIR LAUNCHED SPACE TRANSPORTATION SYSTEMS**

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#### **ABSTRACT**

The air launch concept of using a carrier aircraft to launch a common type of launch vehicle in the air, promises several benefits including, if the carrier is sufficiently large, lower specific launch costs. These benefits are defined in this paper by exposing the influence of various factors, including the classes of payloads to be launched and the sorts of carrier aircraft to be used. A comparison of a common surface-launched launch vehicle and an air-launch system (chosen for their similar launching capabilities and levels of technical perfection), the Ukrainian ‘Cyclone-4’ and the Russian ‘Air Launch’ system, is carried out from the point of view of their economic efficiencies.