

AEROVIRONMENT'S GLOBAL OBSERVER UNMANNED AIRCRAFT SYSTEM (UAS)

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ABSTRACT:

Within several years the Global Observer UAS will be able provide persistent and affordable coverage of an extended area from 65,000 feet (20 KM) and dramatically reduce logistic and operations costs associated high altitude long endurance (HALE) missions.

AeroVironment (AV) has been deeply involved for the past two decades in the development of extreme persistence, HALE Unmanned Aircraft Systems (UASs) and the key technologies required to make these unique vehicles practical operational systems in the stratosphere. Over this time period AV has become a recognized world leader in the development of HALE UASs. AV aircraft have broken many world records for high altitude flight. Go to www.avinc.com for more detailed information on AV experience and expertise. Over the past several years AV has focused its development efforts on the additional key technologies, primarily a light-weight liquid hydrogen tank and ultra high-efficiency electric generation and motor drive systems, required to deploy practical HALE UASs in the stratosphere. The last of the key technology work was completed two years ago – and practical liquid hydrogen fueled HALE UAS flight and ground operations were demonstrated last year. Once final development is completed the Global Observer UAS will be able to carry up to 1000 pounds of payload at 65,000 feet for over 1 week continuously between landings.

In the early days of the aviation and satellite industries there were many who questioned the value of these paradigm shifting systems and capabilities. Eventually, however, the significant value of these systems was recognized and capitalized on by those with vision and imagination. The Global Observer UAS is a paradigm shifting system that will allow the regular use of the stratosphere for many critical and high value government, civil, and commercial missions and applications. Many of the unique capabilities such a system can enable are yet to be imagined. As the development and deployment of the Global Observer UAS moves forward there will be many opportunities for individuals to use their imagination and capitalize on this new paradigm shift that will result in the routine use of the stratosphere for these capabilities. Because this could also include supporting the Pegasus program, this presentation will provide an update on the status of the development of AeroVironment's liquid hydrogen fueled Global Observer UAS. It will also discuss and provide an update (including video) of recent flight tests of the Global Observer UAV prototype which was the world's first liquid hydrogen powered UAV.