



Black Sky Training

CREW TRAINING FOR THE SUBORBITAL SPACE INDUSTRY

Bryan Kuklinski

Introduction

An aspect of suborbital spaceflight which has received little attention is training. If done correctly, quality training improves proficiency, efficiency, and most importantly safety along with dramatically increasing the chances of mission success. When done incorrectly, it can be costly, time consuming and dangerous. Spaceflight is very unforgiving of error, neglect, and complacency.

Regulation

In February 2005, the FAA issued the Human Space Flight Requirements for Crew and Space Flight Participants. They included requirements that each member of a crew complete training on how to carry out their role during spaceflight operations, on board or on the ground. The FAA recognizes the necessity and importance of training, to eliminate as much as possible, the risk of harm to the uninvolved, uninformed general public. Meeting the standards of these requirements is left up to the industry to implement at their own expense of time, money and necessary resources.

Resources

While there are many companies developing space vehicles, most are not in a position to develop training methods for crews on how to operate and maintain these vehicles. Engineering a safe vehicle is not the same as developing effective training. The efforts use different skill sets and experience as well as additional resources. It is not just about creating the training methods, courses and devices, but the need for their continual updates. These are additional expenses beyond vehicle development, which, when done in house, cut into the profit margin.

The industry currently lacks companies devoted to serious crew training. While there are some companies who claim to have training available, the course broadness and quality does not meet the requirements and needs of this growing industry, nor does it address the full spectrum of the training needed. There is an (ongoing) industry need for comprehensive FAA approved training.

Recurrent

Initial and recurrent training will be necessary for all who are involved in this industry. Crews must always be more than current; they must be proficient even in an ever changing environment. Recurrent training insures that the crews skill set is up-to-date with any changes due to regulatory or procedural alteration as well as lessons learned throughout the industry. This will continually improve the safety, quality, and efficiency of suborbital spaceflight.

Use existing methods

Initially, training methods and standards will come from existing methods and standards. We need to use the lessons learned from flying aircraft and spacecraft for 100+ years as the jumping off point for the future. It must consist of generalized areas and type and mission specific, which will be tailored to meet the individual needs and requirements of each vehicle and mission profile flown.

Summary

Training needs to be addressed, as it will always be a recurring need. A cost efficient solution must be developed for this industry to move forward and thrive. Training is required and affects the success of all involved in the commercial space industry.