An Alternative Approach to Suborbital Astronaut Training

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Introduction

Suborbital Training (ST) offers customized training plans for those who want to qualify as suborbital astronauts. ST is a full-spectrum suborbital human spaceflight training company established in November 2012. The principal services of ST include delivery of academic training modules, anti-G straining maneuver (AGSM) instruction, crew resource management training/instruction, hypoxia awareness training, customized fitness assessment, pre-flight, in-flight, and post-flight biomedical support, development of commercial and academic suborbital payloads, and corporate suborbital astronaut services.

Customized Training

ST provides the following customized pre-flight, in-flight, and post-flight suborbital certification, qualification, and training/consulting services:

1) Vehicle Familiarity Training Program. This program features academic instruction on emergency procedures, instruction on intra-vehicular orientation, and an overview of basic spacecraft systems and sub-systems. The program comprises the following sub-modules which can be taken individually or collectively. (i) Instruction on the AGSM, (ii) high altitude indoctrination at a facility nearest to the client's location, (iii) emergency egress training (vi) generic zero-G exercises.

2) Environment Training Program. This program provides clients with the theoretical and practical aspects of training to become a suborbital payload specialist. The program comprises the following sub-modules which can be taken individually or collectively. (i) G-physiology (ii) high altitude physiology, (iii) emergency egress (iv) preflight preparation (v) inflight indoctrination (vi) survival training theory (vii) flight vehicle systems theory (viii) postflight preparation [1].

3) Payload and Science Familiarity Program. This program provides clients with the theoretical and practical aspects of flying payloads and the steps necessary to successively fly science experiments, including customized cue cards. This program comprises the following sub-modules which can be taken individually or collectively. (i) payload integration, (ii) preflight, inflight, and post-flight science protocols, (iii) payload check-out and validation procedures.

4) Interpersonal Training Program. This program provides clients with instruction on the latest in space crew resource management techniques [2]. This program comprises the following sub-modules which can be taken individually or collectively. (i) information processing for suborbital payload specialists, (ii) human error and error management, (iii) situational awareness, (iv) communication and mission management.

5) Suborbital Training Pre-flight Fitness Program tailored to the client's current fitness level. This program is based on research-validated exercises proven to increase tolerance to Gs.

Conclusion

With revenue suborbital flights imminent, there will very soon be an increased demand for suborbital training providers [3]. ST fills a niche by providing training *tailored* to the client and by providing a well planned curriculum based upon the client's needs: Through the strategic use of technology, simulation, distance learning and professional instruction, ST is designed to build a client's confidence, skills and judgment to optimally prepare them for suborbital flight, whether that be as a scientist astronaut or a tourist.

References

[1] Seedhouse, E. Tourists in Space. Springer-Praxis. 2008

[2] Seedhouse, E. Astronauts for Hire. Springer-Praxis. 2012

[3] Seedhouse, E. Suborbital. Springer-Praxis. 2013 (in press)