

Burt Rutan
Presents
Inspiration for Innovation and the New Race for Space
November 27, 2012

Mr. Rutan believes that if kids can be captivated by periods of dramatic technological progress, they will be inspired to innovate and seek breakthroughs later in their own professional careers. For him, this inspirational role was played by the manned space program during its 1961-69 heyday. Recall that this decade saw Alan Shepherd's first U.S. space flight all the way up to an astronaut golfing on the moon.

- Rutan pointed out that the number and operational daring of US space missions has flagged over the last 30 years. He sees this as a choice, one that could have, and implicitly should have, been otherwise.
- As evidence for his inspiration-innovation claim, Rutan offered that 5 years after the Apollo moon mission, the U.S. was #1 in the world in granting doctorates in STEM (science, technology engineering, math) disciplines; today it is 37th.

Mr. Rutan, an entrepreneur, made some observations on how to run a dynamic and successful company. His keys to success were for the CEO to set a strategic direction but not meddle with operational decisions; to embrace high-risk tasks; to pay employees well; and to emphasize workplace fun.

- He implicitly contrasted this type of private success with public mediocrity.
 - He opined that education today plays to the weakest students, citizens are expected to subsist rather than excel, and large government agencies such as NASA tend to be overly cautious.
- He offered an interesting rule of thumb for distinguishing innovative research from mere product development. If one half of an organization's workforce thinks that achieving a task is impossible, then you're doing research.

Despite the supposed doldrums of recent decades, Mr. Rutan suggested that we were in the midst of an aviation renaissance, as evidenced by the fact that today almost 40 countries build airplanes. On space, he proposed that currently college-aged persons could during their lifetime choose to ride into space. An interesting illustration drove home the novelty of this situation:

- Throughout all of aviation history, civilians on commercial aircraft have always traveled at speeds slower than military aircraft, and military aircraft have always travelled slower than spacecraft. We are on the brink of a period

when for the first time in history civilian space tourists will travel faster than military aircraft.

- He qualified the conception of space tourism by pointing out that these flights would be sub-orbital. Technical and economic problems remain to be solved before orbital flights are safe and affordable enough for the general public.

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