

The “tank that couldn’t be built” is now the first and only commercial tank on the Moon

Microcosm, SSLC, February, 2024

In 2005, they were directed by the government to stop work on an all-composite, linerless tank because they were told that all of the major industrial players had concluded that all-composite linerless tanks simply would not work. Today they have landed the first (and so far only) commercial “tanks that couldn’t be built” on the surface of the Moon after passing over 150 tests by NASA, SpaceX, Intuitive Machines, and the Kennedy Space Center.

In 2004-5, Microcosm and its sister corporation, Scorpius Space Launch Company (SSLC), were working with the government on low-cost launch. The program had started in the 1990’s and was going well, but the government decided not to continue the tank work because the major industrial players had concluded that all-composite tanks were simply not viable and couldn’t work in space or at high pressures. There was no point in spending more money on a tank that couldn’t work. Microcosm and SSLC believed that it could be made to work and used their own funds to build and successfully test all-composite, linerless tanks. They have since sold their entirely new tanks to many space companies and used them in multiple space programs. On February 22, 2024, they became the very first commercial tanks on the surface of the Moon.

What was the secret? This is a real story and not a fairy tale, so we won’t tell you the answer. We will tell you that the tanks are both much lighter and much stronger than metal tanks, such that they can be used as the overall structure of the spacecraft (thus saving even more weight) and can have external components or internal baffles built as part of tank and not bolted or glued on. They have been built and tested with operating pressures up to 3,000 psi with a safety factor of 2. They have successfully passed over 150 tests by NASA and the launch vehicle and spacecraft contractors and have become the very first and only commercial tanks on the Moon. All-composite components are becoming a part of the future of low-cost space.

What’s Next that Can’t be Done?

Dr. James Wertz is the President of Microcosm, CoB of SSLC, and a member of Astronautics faculty at the University of Southern California (USC). He has taught courses in reducing space mission cost at USC for over 20 years. He has just completed teaching a course in a near-term, low-cost commercial lunar settlement capable of generating very high commercial profits. Of course, this requires both dramatically reducing cost and increasing income. The main elements of reducing cost are using oxygen from the Moon as one of the propellants, using a low-cost launch vehicle such as the SpaceX Starship, and doing much of the work on the Moon in an enclosure rather than in a spacesuit out on the surface. This, in turn, allows many new approaches to “humanize” spaceflight and increase income, including lunar tourism, using He³ from the Moon for radioactive-free power on Earth, creating an International Lunar University, and saving

mankind in the event of a nuclear or climate disaster. For more information on either tanks or lunar settlements, contact jwertz@smad.com.



The “tank that couldn’t be built” is now the first commercial tank on the Moon as of February, 2024.



Potential holiday card featuring the main conference room at the International Lunar University. From the Moon, the Earth stays in nearly the same position in the sky all the time.