


10 LEGENDS OF MARINE CORPS AVIATION

# AIR & SPACE

Smithsonian

A man with a shaved head and light-colored eyes, wearing a dark suit jacket over a light-colored shirt, is holding a glowing, realistic-looking sphere of the Moon in his open palm. The sphere is illuminated from the side, showing craters and lunar features. The background is dark.

## This Guy Is Offering You The Moon

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## A Brew for the Launch Crew

### THE COCOA BEACH

Brewing Company in Florida is what the U.S. trade association for brewers calls a "nanobrewery," so small all its equipment could have fit in a space shuttle payload bay. Its tasting room frequently fills with scientists and engineers from nearby launch facilities talking shop about payloads over pints of the brewery's Von Braun Ale and other beers dispensed by tap handles ranging from Polynesian tiki idols to a model of a V-2 rocket. "It's a place that's off-duty, off the base, where my badges and their badges don't have to match to be able to talk," says Second Lieutenant Kelly Patterson of the U.S. Air Force's 5th Space Launch Squadron at nearby Patrick Air Force Base.

"All the legendary astronaut bars are gone," says owner Chris McCall. "We've kind of brought a bit of that

back to Cocoa Beach."

Journalist Leo Enright, who has covered launches for the Irish television network RTÉ since the 1960s, says the bar "certainly brings me back to the good old days when everyone knew everyone else in Cocoa Beach."

McCall hadn't intended to target local space program workers, but as the brewery turned into an aerospace "Cheers," he accepted mission patches and other mementos, which now line a wall. Its popularity with Jet Propulsion Laboratory staff who prepared the Mars Science Laboratory for its November launch inspired bumper stickers declaring the brewery "preferred by more Martians."

■ ■ ■ GREGG WIGGINS

**Standing by the Mars Science Laboratory, a Jet Propulsion Laboratory technician indicates his support for the Cocoa Beach brewery.**



## Single Hog, ISO Hail, Lightning

**TO SURVIVE POUNDING** hail and lightning strikes, the National Science Foundation's new Storm Penetrating Platform had to be tough. Last November, the NSF announced it had snagged a Fairchild-Republic A-10, a type officially nicknamed the Thunderbolt II but more widely known as the Warthog.

With 1,200 pounds of armor plate, the close-air-support, ground-attack A-10 was designed with pilot and airframe survivability in mind. Replacing the NSF's North American T-28, a 35-year veteran of 900 storm penetrations, the ex-Air Force Warthog will see enemy fire in the form of hail, ice, and lightning. The Air Force will beef up the A-10 accordingly. "Particularly they are worried about the leading edges on the wings and engine intakes," says Hafliði Jonsson, chief scientist at the Naval Postgraduate School's Center for Interdisciplinary Remotely-Piloted Aircraft Studies (CIRPAS) in Monterey, California. "The main thing is to prevent [ice] build-up in front of the engines, to prevent chunks breaking loose, making their way into the intakes." Jonsson expects additional de-icing systems and reinforcement of the wing leading edges. "Rods on extremities, copper strips on the canopy bubble, and possibly over panel bonds, especially near the fuel tanks" will help protect the aircraft from lightning.

The multi-party research aircraft – NSF-funded, U.S. Air Force-modified, CIRPAS-maintained and -operated – should be seeking out storms by next year. The Institute of Atmospheric Sciences at the South Dakota School of Mines and Technology, which operated the T-28, will collaborate and manage data. "The plane will be guided by the radar operators into interesting parts of the storm," Jonsson says. To the NSF, "interesting" means areas where sensors can "locate and characterize growth regions for different types of storms."

■ ■ ■ GRAHAM CHANDLER

**The National Science Foundation's T-28 storm penetrator, which began its meteorological research career in the 1970s, will be replaced by an A-10 Warthog.**