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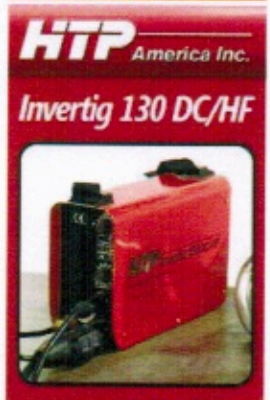


Burt's 'Research Project'

Tinkering with the wing ship-seaplane idea

By Steve Schapiro, EAA 1018168, Senior Editor of Publications

November 10 2011 – When we heard rumors that Burt Rutan, in retirement, is back at the drafting table, we thought we should go right to the source. In a private chat yesterday (November 9), he confirmed he is working on a new design, Model 372-3. "It is a combination wing ship and seaplane," Burt revealed about 372-3, inspired by a Soviet "ekranoplan" he learned about while on a trip to Russia nearly two decades ago (pictured above). But he also made it clear we should not expect to see anything anytime soon.

Burt Rutan was allowed to go through the Lun ekranoplan in Russia.

Rutan saw the ekranoplan Orlyonok fly beyond ground effect while in Russia in 1993.

"People shouldn't expect that this is going to come out and they'll get plans for it in January. I don't have a schedule," Burt said. "Hell, I'm retired. I'm just doing this for fun. It's possible that it won't work and that it won't perform like I think it might. If it doesn't work, you'll never hear any more about it."

Throughout his career, Burt has been extremely disciplined in not revealing details of a new design until it has actually flown. However, he was willing to share with EAA the inspiration for Model 372-3 and how he hopes to use the aircraft.

New environment, new ideas

Burt started thinking about the project when he and his wife Tonya moved to Idaho in April. Now that they have finished furnishing the house and settling into a totally different environment than the desert, Burt said, "I'm bored. That's why I'm doing the new project. But it hasn't been anywhere near a full-time project. I've just kind of dabbled in it, here and there." Consider it a hobby, he said.

His goal is to have a STOL seaplane that could operate out of the many lakes and rivers in the region. "Going out and exploring little lakes and rivers in a STOL seaplane is a fantasy, I think, for a pilot," he said.

Burt doesn't fish and said he isn't interested in owning a conventional boat. "So having something that would be a high-speed boat, a very efficient boat for Lake Coeur d'Alene, and then convert into a seaplane to go to the rivers and small lakes and elsewhere is what I'm trying to do," he said. He plans to keep it in a single-car garage at home rather than in a boat slip.

At the current time, this is just a research project with "some unique characteristics, particularly the propulsion," on which Burt would not elaborate and isn't interested in sharing until he can prove it works. "I don't even know what it will look like. I'm not ready to build it yet," he said. "I have about three different options right now. This is in very preliminary stages."

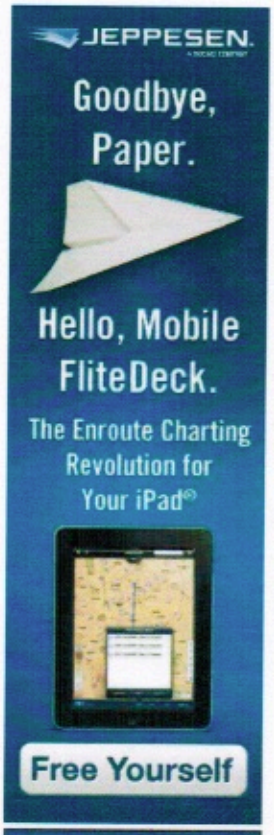
Russian influence

Although Burt isn't sure what the final design will look like, it is sure to be unconventional - but not because nearly all of his aircraft are unusual. The design was inspired by what he learned in 1993 as part of a DARPA team that went to Russia to learn about the wing ships, called "ekranoplans" (surface planes), the Soviet Union built during the Cold War.

The most famous was the Caspian Sea Monster, a 540-ton behemoth designed in 1966 featuring a short wing; a canard with eight engines, four on each side; two more engines on a large vertical fin; and a horizontal tail about as wide as the wings.

"The thing is weird. It's enormous, really enormous," Burt said. "What they do, they have propulsion on the canard, eight engines, they turn those engines to blast under the wing. To make it trap that air, they have a flap at the trailing edge of the wing that dips down into the water. As it gets faster, they can raise that flap. And while it's cruising it has essentially no hydrodynamic drag."

A smaller version designed to carry anti-ship missiles, the Lun, went into service in the Soviet Navy in 1989, but with the collapse of the Soviet Union no others were made. Burt and the DARPA team were allowed to crawl through this aircraft. Another smaller ekranoplan, the Orlyonok, was hinged behind the flight deck to easily unload



troops and tanks. This aircraft had a turboprop on the tail and turbofans in the nose, and performed a flying demonstration for the DARPA team.

"They took the Orlyonok and very briefly took it up to 50 or 80 feet, and then it went right back down into ground effect," Burt said. "It's not a very efficient airplane for that low of an aspect ratio. But when it's just barely touching the water, it's a reasonably efficient boat. It has no hydrodynamic drag at all."

Getting his feet wet

Burt had all but forgotten about the Lun and Orlyonok until recently, "although in the back of my mind I always wanted to build a small wing ship," he admitted. If Model 372-3 does get built, it will be Burt's first seaplane. (He flirted with the idea of putting floats on the Grizzly, but never did.)

He does hold a seaplane rating that he earned accidentally in 1980 while on a trip to Alaska. Someone suggested he get the rating while he was in Fairbanks, but Burt didn't think he had time because it was late afternoon and he was leaving the next morning.

He didn't realize that the sun doesn't go straight down to the horizon and that it would be hours rather minutes before it got dark. He rounded up a flight instructor, a Super Cub, and an FAA examiner, "and by dark I was a private seaplane pilot," Burt said. "I had a lot of fun."

Alas, back in California there weren't many lakes to land on at the time, so it wasn't practical and he forgot about it. "The only seaplane I flew since 1980 was that PT-6 turboprop Dornier that showed up at Oshkosh two years ago," Burt said. "I did get a chance to do a takeoff and landing in it."

The move from the desert in Mojave to the mountains and lakes in Coeur d'Alene is giving Burt the opportunity to rediscover some things he once enjoyed as well as a chance "to see if some new concepts of mine might work," he said.

Developing a wing ship isn't the only new challenge Burt's facing. He just bought a used snow blower. "An airplane has rudder pedals, a stick, and a throttle. This snow blower has about seven knobs," he said. "I haven't fired it up yet, but it looks like a pretty complicated piece of gear. That will be something new for me."

And it's a lot more likely he'll talk about that before he reveals any more details about Model 372-3.
