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Pursuing a Shipping Revolution as Big as His Airship

By BILLY WITZ NOV. 10, 2014

MONTEBELLO, Calif. — Somewhere beneath the graying shock of mad-professor hair, the dark circles under his eyes and the Russian-strained, cigarette-stained baritone, there remains in Igor Pasternak a boy with a dream.

It has been this way since his curiosity was piqued growing up in the Soviet Union during the last throes of the space race. Photos of blimps and dirigibles in magazines fascinated him. By the time he was 10, with the encouragement of an airship designer to whom he had written a letter, Mr. Pasternak was consumed with the idea of building a vessel that would float across the sky.

"It stuck," Mr. Pasternak said with a grin.

"Because I don't have enough imagination," he continued. "I just stuck with this and became a boring person. I've become the horse with blinders."

This singular path has taken Mr. Pasternak, 50, a long way from his childhood in Lviv, Ukraine. He studied to become an engineer, started his own company, now called Aeroscraft Corporation, in the midst of perestroika and moved to the United States when the post-Soviet economy collapsed.

Now, he says he believes he is on the verge of developing an aircraft that will change the way large cargo can be shipped.

Mr. Pasternak envisions this hulking, 770-foot-long, silver-skinned airship, which is kept aloft by helium-filled tanks, delivering fresh fruit to Alaska, dropping triage units at disaster sites or depositing heavy machinery into remote locations — no ports, rail lines, roads or airstrips necessary.

It would be able to fly at up to 120 knots, four times as fast as a cargo ship. Its capacity of 250 tons is about twice that of a C-5 cargo plane, and it has a range of about 5,870 miles, enough to go from Boston to Burkina Faso.

The airship, called the Aeroscraft, will take off and land like a helicopter. Its

designers, Mr. Pasternak says, have solved the major problem for lighter-than-air crafts: buoyancy control. If a dirigible unloads heavy cargo, it must be tethered or take on the same weight to keep from floating away. The Aeroscraft sends helium from its main chamber into compression tanks, which creates room for air — which is heavier than the helium — to be taken in, allowing for a controlled descent.

Last month, several congressmen and local officials were present for the christening of a more modest, conventional airship from Mr. Pasternak's company, a blimp that has been sold to a Mexican company that plans to use it to monitor oil pipelines.

The history of air flight is littered with starry-eyed inventors — Howard Hughes and his Spruce Goose, and Count Ferdinand von Zeppelin and his dirigibles among them — whose grand visions never quite got off the ground. Even the Empire State Building stands as a 103-story reminder to the faded dreams of the dirigible era of the 1930s — its spire was said to be built as a mooring station, though it was never used for that purpose.

Mr. Pasternak speaks about the possibilities of his project with a salesman's promise and a zealot's conviction.

When the Aeroscraft is completed, which he says will be four years from now, it will have the ability to transform the distribution of goods the way the Internet has transformed communication.

"When the Internet was created, it was to solve the problem of: In a nuclear war, how is the world going to communicate?" Mr. Pasternak said. "No one was thinking about the vision of Google and Facebook and Alibaba. We will change the distribution system same way with this project."

But Chris Caplice, executive director for M.I.T.'s Center for Transportation and Logistics, is wary of such hyperbole. In many cases, he sees airships like the Aeroscraft as only marginally more efficient than trains, ships and cargo planes for large deliveries.

"It has its uses, but they're narrow," Dr. Caplice said. He added that many new technological developments — in this case, the helium buoyancy system that mimics a fish's air bladder — go through the Gartner hype curve, in which a period of inflated expectation is followed by the trough of disillusionment, which eventually gives way a middle ground as a product finds its niche. He cited as an

example smart tags, radio frequency identification markers that can be used to track goods or animals. The tags have not quite revolutionized how people keep track of things.

"It's like spaghetti," Dr. Caplice said. "He's going to throw it on the wall and see if it sticks."

Dirigibles have long dealt with a perception problem — nobody wants to get on the next Hindenburg. The sell has been much easier among scientists, who understand that these ships run on nonflammable helium, unlike the Hindenburg, which immolated when its hydrogen tanks exploded while docking in Lakehurst, N.J., in 1937.

Airships have found their most reliable use not in carrying people or cargo, but instead as slow-moving billboards in the sky, notably for Goodyear and MetLife. Interest was also keen from the military, but that has cooled in recent years in the face of cutbacks. Representative Brad Sherman, a California Democrat and a senior member of the House Foreign Affairs Committee, said the Air Force leadership was being shortsighted.

"It's natural for the military to underinvest in research and logistics," Mr. Sherman said. "It's less sexy. The Air Force wants a fighter plane to shoot down a Chinese plane invented 10 years from now and deployed 20 years from now. The truth is logistics is terribly important, for both military and civilian purposes."

Mr. Sherman cited two potential uses for the military: being able to drop 100 soldiers and their equipment in any open field, and plastering an American flag over the Aeroscraft to serve as a valuable advertisement when it is delivering humanitarian aid to foreign countries.

Though much of the Aeroscraft's development costs have been covered by government military contracts, Mr. Pasternak has begun to turn more toward the private sector. He says he is convinced there is value in being able to deliver wind turbines to remote areas, something no air vessel can do. Or in getting overseas goods produced in November to American markets for the holiday season, something no cargo ship can move quickly enough to do.

But Richard Aboulafia, a cargo industry and transportation analyst, said the private sector market for an airship like the Aeroscraft "is a problematic one."

Mr. Aboulafia said there were three hurdles to overcome: the difficulty in making a new market entrance in air transportation, Cold War-era Russian planes

that can be leased inexpensively and the fact that exotic cargo is often a one-way trip, which raises costs.

Yes, Mr. Pasternak said, he has heard the doubts. Now, the technology is complete, he said. All he needs is further testing, and then customers.

A small fleet of smaller models, which are 555 feet with a 66-ton capacity, should be ready in three years, he said. The plan is for the 250-ton capacity ship to be ready another year after that.

Mr. Pasternak professes to be patient. He has dealt with other setbacks. Last year, weeks after a flight demonstration of a one-third scale model Aeroscraft ship, part of the hangar roof where it was being housed collapsed, damaging it beyond repair. The accident added about nine months to the timeline, he said.

Beyond the military contracts, Aeroscraft has signed partnership agreements with companies including Bertling Logistics, Air Charter Service and Pacific Airlift, though the terms of those deals are unclear.

As for financing?

“Hah,” he said with a dismissive nod of his head, adding, “The best financing is customer financing. It keeps you honest. There is a difference between a financial investor and a customer because a financial investor is looking for a return on his investment and a customer is looking for performance. When you go with this approach, it gives you more freedom.”

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