

IT'S A BIRD! IT'S A PLANE! IT'S A FLOP! Beech Aircraft spent over \$350 million for Starship -- now a dead duck. What lessons can be plucked?

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By Alan Farnham

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(FORTUNE Magazine) - LOOKS AWFULLY GOOD for being dead, doesn't it? Beech Aircraft, which makes the airplane above -- Starship -- says production is being suspended temporarily; Starship isn't dead, just resting. Wrong. It's dead. Rarely has a market repudiated any product the way buyers of business aircraft have repudiated this one. If the American Marketing Association were ever to carve up a mountain, Rushmore-like, commemorating misbegotten things, Starship would be there, next to New Coke and the Edsel. Yet when the first production model of this airplane flew in 1989, its radical beauty dazzled the world. Every magazine, newspaper, and TV screen, it seemed, carried its futuristic image.

Rival aircraft makers watched closely, since Starship, to them, was far more than just a pretty face. It was an embodiment of high technology -- and a cause for hope. Only 964 new civilian airplanes (excluding big commercial jetliners) were sold last year, down from a peak of 17,811 in 1977.

Manufacturers put part of the blame on themselves for having failed to innovate: There's little reason to buy a new airplane when last year's model gives the same performance. Beech bet that buyers would pay a premium for improved performance and set out to build the first "all-composite" business airplane: Starship. Composites (plastics and carbon fiber) are 350% stronger than aluminum but lighter by 15% to 20%. With that weight savings, Starship was meant to deliver jet performance at a propeller plane price -- \$3 million. It was to carry ten passengers at 400 knots, using fuel-efficient turboprops mounted aft to cut cabin noise. Two sets of wings would make stalls impossible.

To design it, Beech collaborated with Burt Rutan, the visionary who later built Voyager, the little airplane that flew around the world on a single tank of gas.

When Rutan flew an 85% scale model of Starship at air shows in 1983, crowds went wild. "I had tears in my eyes," says Scott Dingwell, an aviation buff who saw it. "I never in my life expected I'd ever get to fly an airplane anything like that." Beech was inundated with orders and committed to an initial production of 53 planes. Because aviation writers are polite, and because they know Beech deserves great credit for having faced so daunting a challenge, trade magazines have hesitated to say how Starship -- as merchandise -- has fared.

Let me help: It's a dud. A fiasco. A Little Bighorn with wings. In 5 1/2 years Beech has sold 15 -- total. It has leased another 12, but under terms so disadvantageous to Beech that the company's own dealers call the leases "subsidized." It would be nice to say the plane's performance was a reflection of poor sales for all new aircraft. Nice -- but wrong. Since 1989, Cessna, for example, has delivered over 250

new Citation V's and almost 140 Citation IIs -- jets priced about the same as the prop-driven Starship.

Beech's own line of turboprops has sold relatively well. The company has what it calls an "availability" of the airplane. True. Much like an availability of three-armed sweaters. Over 20 Starships are sitting in Beech hangars gathering dust. Used Starships? Here's the most recent example of that market's strength. Diane Levine, president of Amstat -- an information service in Fair Haven, New Jersey, that tracks aircraft sales -- says that in 1992 the owner of a Starship with low hours put it up for sale. No takers. He withdrew the offer and later sold the airplane back to Beech.

HOW?! WHY? How could so bad a thing happen to such good, smart, well-intentioned (not to mention well-financed) people? Herewith, the highlights:

Beech wasn't content to make Starship somewhat innovative. It had to be innovative stem to stern. Composite wings? It had composite bolts. The FAA, however, had never certified an all-composite airplane, and no bureaucrat wanted to be remembered as the guy who had signed off too quickly on an all-plastic plane. Beech steamed ahead, announcing Starship would be on the market in near-record time: two years. Its confidence came, in part, from Rutan's 85% scale model, which flew wonderfully.

Rutan says it was meant to be predictive of Starship's aerodynamics only -- not its weight. When Beech designed the production model, it made it stronger, meaning heavier. On top of that, the FAA insisted that many metal-plane standards (for thickness of structural members, say) be applied to the composite hull. Result? An airplane of surpassing strength that weighed . . . oh, about the same as what a metal one would weigh. Beech's designers hadn't figured on this. The extra heaviness meant the plane would need bigger engines; bigger engines meant more fuel; more fuel meant more weight; to support that weight, you'd need a heavier structure. Were the engines big enough? You get the idea.

As the plane's weight spiraled upward, gaining Oprah-like momentum, Starship flopped over from its intended FAA weight category (light aircraft) into the next one (commuter aircraft), whose standards the FAA was just then revising. There's a signpost up ahead. You're entering Regulatory Limbo! Dick Aarons, editor of the trade magazine Business and Commercial Aviation, explains: "The regulations never froze for Beech. They had to keep trying to hit a moving target."

Now classed a commuter aircraft, Starship had to have two pilots for its ten passengers. (Beech has since gotten a waiver for this requirement.) Though an airplane with fore and aft wings cannot stall, the FAA insisted that Beech install a heavy and expensive device that shakes the pilot's stick back and forth, warning of stalls. The plane's weight eventually hit 14,500 pounds.

At first delays came in months. Then years. As the years passed, costs climbed. Beech's corporate parent, Raytheon (1993 sales: \$9.2 billion), says Starship's cost to date, including capital expenditures, R&D, overhead, interest -- everything -- is around \$350 million. For the

moment, let's assume that's true. If Beech, instead of fabricating Starship from advanced composite materials, had instead used \$1,000 bills laminated three-ply, it literally could have built all 53 airplanes for \$300 million and still had \$50 million left over for monogramming, ashtrays, and a lifetime supply of in-flight nuts.

But was \$350 million the cost? Will Cutter, president of Cutter Aviation, a Beech dealership in Phoenix, says that 2 1/2 years ago he and other dealers met with Beech's then-president Jack Braly and begged him to cut Beech's losses by killing Starship outright. Braly's response: You can't expect me to & go back to Massachusetts (Raytheon's home) and tell them to eat a \$750 million investment. Some of the money came out of dealers' hides. Beech imposed what amounted to a surcharge on its other products to help pay Starship's bill. Then, when the plane finally reached market in 1989, Beech told dealers to take it on consignment, meaning dealer commissions (and motivation to sell) were reduced.

Not that dealers exactly had to fend off customers. Starship had taken six years -- not two -- to build and certify. Most people who had booked orders canceled. What the curious now beheld was a beautiful airplane, overweight by 2,600 pounds, priced like a jet (\$4 million), but offering propeller plane performance -- just the opposite of what Beech had intended. These deficiencies were addressed, but not all fixed, in a second-generation model, the 2000A, unveiled in 1992. By then, however, the airplane's reputation had gelled.

Beech ran great-looking ads created by Team One, the same California agency handling Lexus. It offered attractive leases. Starship just sat there, nailed to its perch. Beech's Braly, before he left the company in 1993, said it best: "There's not much else we can do to get this thing moving." Which makes you wonder: Who are the people who have bought or leased a Starship? They're big men. Big men with big heads, big elbows. Seriously. Starship in two respects beats its competition cold: headroom and elbowroom. Dick Miller, a self-made man who runs his own real estate company in Indiana, leased a Starship. "I looked at jets," he says, "but I didn't like any. That Learjet is nothing but a tube. You've got to understand, I'm a big man. I wear a size 56 coat. And that lease deal Beech offers? I couldn't turn it down."

When FORTUNE took a ride in a Starship last fall, we found it delightful. The comfortable interior was appointed in dove-grey leather. It was like flying inside an opera glove. Vibration was low, noise was low, and conversation could be carried on comfortably, at normal levels. The cockpit, farther away from the engines and quieter still, sports what Beech calls the "glass dash." This instrument panel, developed at a cost of \$25 million, uses 14 TV screens in place of mechanical gauges to display information in a palette of colors that includes magenta. Imagine yourself flying an Amana Radar Range, and you've got it.

Pilots love Starship. The problem is, pilots don't write checks. It's the guy in back who does that. & There are only so many size-56 entrepreneurs to go around. Staid, gray-flannel customers, for the most part, have shied away. Entrepreneur Bob Erwin says happily, without a trace of irony, "It looks like something out of Star Trek!" Not many

CEOs of public companies want to travel in an eccentric-looking, \$4 million airplane that draws a crowd.

HOW BADLY will Starship hurt Raytheon? Not badly. The airplane's costs, says Beech, were paid as they were incurred, so there's no big write-off coming. Beech's sales (\$1.3 billion) are less than 14% of Raytheon's, and Beech has diversified into other corporate turboprops and jets, small commuter airliners, and military contracting. Beech did get something for its money. The challenge of building an all-composite airplane revitalized its engineers. Beech's mastery of composites won it an Air Force contract to build landing gear doors for the C-17 transport.

Starship technology is trickling down into Beech's older models, including King Air, a twin-engine turboprop, where it shows up in such details as composite door panels. Glad as all these tidings may be, however, Max Bleck, Raytheon's president, tests belief's tensile strength when he claims (as he did to FORTUNE) that Starship has somehow put Beech "in the catbird seat." With the future of the C-17 program uncertain, with Beech's own engineers saying they will never again build an all-composite airplane, any payoff will have to come somewhere down the line. Beech, right now, is sitting on a seat familiar to us all. It isn't catbird.

What of Starship? It still attracts some customers, and Beech says production, about to be halted, might be restarted someday. Bleck remains optimistic: "We're going to stay the course." The aircraft market, he says, could turn around next quarter. People could start buying new airplanes in flocks. It might; they might. Would that help Starship? Probably not. People will buy what's selling now: fast little jets.

When No. 53 comes off the line this summer, it almost certainly will be the last. Then industry commentators will run a comb through the debris, looking for lessons. Beauty, they will say, counts -- but not for much. In fact, beauty can be a trap: If you create something that looks extraordinary, people will expect extraordinary performance. And it's performance -- far more than materials or styling -- that counts. The world would buy an airplane made of cheese if it flew faster.

The commentators will say: Don't raise hopes you can't fulfill. Starship will be remembered as, if nothing else, aviation's version of No new taxes. People might have forgiven it its faults had not Beech, at the outset, promised them the moon. Remember the guy who got tears in his eyes watching Starship's prototype fly over? He said he never dreamed he'd ever get to fly an airplane anything like that. Sad thing is, he never did.