

CHROME CUB

A Different Approach

Jim Thomas' PA-12

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At first we were almost afraid to admit it: from a distance we weren't quite sure what kind of airplane we were looking at. Then our erstwhile editor, H.G. Frautschy, asked the question we'd been thinking: "What is it?" Now we felt better! EAA AirVenture Oshkosh 2002 had been keeping us busy, and none of us had been able to detour close enough to make a positive identification,

and when I did, I had to grin. It was just your basic PA-12 Super Cruiser done to Alaska standards, but in a special sort of way.

Alaska has a way of making little airplanes like the Super Cruiser mutate to meet the conditions. Jim Thomas' Chrome Cub, however, went a couple of steps further without developing the too-bizarre-to-be-used-anywhere-but-the-bush look. In

fact, if someone had described the most obvious modification, the metal skin, to you over the phone, you'd say it sounded hideous. In real life, however, it's anything but hideous, and it attracted more than its fair share of admiring glances during the convention. Granted, none of them came from purists, but it isn't a purist's kind of airplane.

When we ran into Jim lounging around in the shade of his Cruiser we asked him where he flew in from and he replied, "My trip to Oshkosh began a month ago, as a flight from California to Alaska with the Pine Mountain Lake Aviation Association. My





Jim Thomas of Anchorage, Alaska, and Groveland, California.

plan was to visit friends and spend some time at my remote cabin. While relaxing on the deck of my cabin, I decided I really wanted to fly to Oshkosh. After all, it's only 3,300 miles from Anchorage to Oshkosh."

When asked what he does for a living he said, "I'm between careers and enjoying my airplane."

From anyone else that would mean he was out of work and looking for a job. That, however, is not Jim Thomas' situation. He's lived through one interesting career and is now flying his Super Cruiser around the country while he figures

out what he wants to be when, or if, he grows up.

His first career was a long, long way from the Alaska bush and in no way indicated he'd wind up a confirmed Alaska devotee.

"I was born and raised in the San Francisco area and went to college at Cal Poly," he said. "I graduated with a degree in aero engineering and went right to work for Boeing in Everett, Washington, on the 747 project. I worked in the structures group doing design on the wing to body fairing, landing gear, cabin doors, and fuselage structure. It was a good job, and I liked what I was doing.

"One day, a designer who worked for me brought in some photos of Alaska and told me they were hiring people to work on the construction of the Alyeska Pipeline being constructed from Prudhoe Bay to Valdez. The designer said he was in contact with a company that was hiring engineers to work on the project.

"They were actually looking for civil engineers, but I really wanted to go to Alaska and figured I'd send my resumé in, but I didn't give my aero engineering degree much of a chance at landing a job. As it turned out,

they had to retrain everyone they hired to become arctic engineers because the work involved building a hot oil pipeline in permafrost.

"To my surprise, I got a job offer that tripled my Boeing salary. That was impossible to turn down, especially since it would put me in what had always been described to me as a paradise for outdoorsmen."

What Jim hadn't thought about too much was the timing of the job move. The offer came at the end of 1974, and he reported for work in January of '75. January isn't necessarily the most opportune time to move that far north.

"When I stepped off the plane in Fairbanks it was 65 degrees below zero, and it stayed there for two weeks," he grinned as he remembered. "After training in Fairbanks, I was sent to the Atigun construction camp in the Brooks Range where it was 70 below. It was so cold they wouldn't let us go outside to work! I was beginning to understand the reasons between the salary difference between Boeing and my new job."

He stayed with the pipeline job just long enough to get infected by the Alaska bug.

"I was young and wanted an adventure, so, after about a year and a half, I quit and started on a series of trips. The first one was a 250-mile kayak trip on southeast Alaska that took me from Wrangell all the way out to the Gulf of Alaska and the town of Sitka. Then I hiked the Chilcoot Trail, took a train to Whitehorse, and then hitchhiked to Dawson City and the Klondike gold fields.

"Basically, I had made a lot of money in a hurry and wanted to enjoy Alaska."

Since most Alaskans see airplanes as essential as pickup trucks, he was subjected to more than his share of flying machines. That's where his pipeline time began to work for him.

"I had been fascinated with airplanes since I was a kid because my dad was a naval aviator and flew SBDs and SB2Cs. There were all sorts of flight training books around the house, which I loved to read. We would also go to air shows around the Bay Area, whenever we could. So, when I was working the pipeline and we had nearly 24 hours of daylight, I began taking flying lessons from a CFI who worked the local Flight Service Station.

"During my first solo a Learjet happened to call in saying he was 20 miles out and landing. I immediately got on the radio and reported that I was in the pattern and on my first solo doing three touch-and-goes. To my relief, the Lear pilot responded that he would hold over the river until I had completed my three circuits.

"Shortly after my solo, my CFI was transferred, and I was out of an airplane and instructor."

The problem of finding a learning situation that was stable long enough for Jim to get his certificate would dog him for a long time.

"Another guy came to the FSS who was also a CFI, and I started to continue my lessons with him, but another pilot who had rented his airplane flipped it on its back on a sand bar, and I was once again



A pretty comfortable cabin starts with a well-cushioned seat and a panel equipped with a reasonable amount of instruments. A portable communications radio and a GPS are also mounted on each side of the panel.



out of airplanes.

"Finally, I went to Buchanan Field in California looking for a flight school that had both lots of airplanes and lots of CFIs. I thought I had it made, but just after I completed my short cross-country, the flight school lost their lease and closed up shop. This was really getting old."

By this time he had invested a huge amount of time and effort in search of the elusive pilot certificate, so he headed back north.

"I went to Merrill Field in Anchorage and started down the row of flying schools asking what I had learned to be the three most important questions about flight schools. How many airplanes did they have? How many instructors? How long was their lease?"

"By that time my dad and I had

purchased a Super Cub, and I needed my license in short order. I had plenty of flying time and had most of the requirements, but I was having a terrible time trying to get that last little bit of instruction so I could take the checkride."

His persistence paid off on the third flight school he interviewed. They had the requisite multiple of instructors and airplanes, had a long-term lease and, most important, were willing to help him get his certificate as quickly as possible.

"When I ask them about a lesson schedule they responded, 'We can fly you today, tomorrow, Friday, and any day you want.' What I really liked about them is that they didn't take me back to hour one, as so many of the other schools had. They evaluated me to see where I was at, and then we started from there."



airplane home. It doesn't get any sweeter than that!"

By this time Jim was an old Alaska hand and knew what he wanted in an airplane. He also knew he was hooked on tandem seating and flying with a stick, not a wheel, but he still wanted a machine with lots of baggage space and good short-field performance. A modified Super Cruiser was high on his list, as it is for most Alaskans because of the wider back seat and the ability to graft on lots of parts from Super Cubs to increase performance.

"I'd heard about this PA-12 that had been sitting for 10 years in Fairbanks, so I went up to look at it. It had been disassembled after a ground loop, but it didn't look too bad. I couldn't see any major damage, although as I found out later, the fuselage was tweaked and needed straightening. This was no big deal because I planned on modifying it quite a bit, so truing up the fuselage would just be another thing to do."

The first owner of the airplane was the Atomic Energy Commission, and its logs made it appear as if it had been used for surveillance or radiation monitoring around one of the first nuclear plants in Washington state. However, one of the major surprises upon seeing the airplane for the first time was the metalized fuselage.

"Although the airplane was nearly stock, in 1954 one of the owners had the fuselage metalized by Met-Co-Aire in Fullerton, California. Met-Co-Aire had a number of STCs to metalize a lot of different airplanes, so this wasn't a one-off project. In fact, I know of at least three other metalized Super Cruisers in Alaska."

The metalizing process wasn't a simple matter of riveting aluminum sheet to the stringers in place of the fabric. In fact, the aluminum was applied in a unique fashion.

"I'm fairly certain they made the aluminum shells up in a jig off the airplane and then slid them on from the back and finished them. I think



Under the back seat, there's a handy surprise—a toolbox. A great place to keep essential traveling stuff like tiedowns and a quart or two of oil from bopping you on the head during a bout with turbulence!

In very short order, he was ready for the checkride, but once again it looked as if his efforts were about to be foiled—the weather was really lousy.

"My CFI called the examiner and told him I needed the checkride in the worst sort of way, and the examiner, bless his heart, said, 'If he'll fly in this stuff, he must be okay.' He came over, we did a little flying, and he signed me off. Then I took a couple of hours of tailwheel instruction,



Flip the seat down, and the extended baggage compartment turns into a snug sleeping spot.

got my endorsement, and we went down to pick up my first airplane, a Super Cub."

Before starting the Super Cruiser project, Jim went through a number of airplanes, including the Super Cub, a Cessna 180, a 180-hp Skyhawk, and a couple of Citabrias. One of the Citabrias, a 7ECA, bears mentioning because he didn't get it in the usual way.

"I won it in a raffle being conducted by the Libertarian Party in Fairbanks. It was \$25 a ticket, five for a hundred bucks. I gave them the hundred bucks and took their

it was done that way because the skin and the formers stand off from the tubing and are held in place by Adel clamps. Also, you'd have to have a snake that's good at riveting to buck the rivets at the back of the tail cone. There's just no way you can get at them from the inside, I don't care how small you are."

The construction technique, which leaves the tubing standing free from anything around it, worked very much in the airplane's favor.

"Lots of times there is corrosion in the bottom longerons of rag and tube airplanes because the dust and dirt collects in the little valley formed by the fuselage fabric and the tubing. This holds moisture, and rots everything around it. In this airplane, there's a good-sized gap around the tubing so nothing collects there. Because of that, this tubing was in really good condition. Much better than you normally find up north."

Jim and his brother, Bill, worked together on the airplane for three years. Their first order of business was to remove the obligatory ton of mouse droppings, sand the tubing, and double-check it for corrosion. While they were doing this several of their pilot friends and aircraft mechanics had their own opinions of what the brothers should do to the airplane.

"We had a number of people say we should remove the aluminum and replace it with fabric to save the weight. I found weight and balance records, which showed the metalization added just under 20 pounds to the airplane's empty weight, and pointed out that since the airplane was metalized, the wings had been re-covered three times but the fuselage hadn't been touched. Besides, we liked it because it makes the airplane unique. That's one of the reasons we didn't paint it."

Rebuilding a PA-12 in Alaska means something different than it does in the lower 48. Chances are every PA-12 in Alaska that goes

through a rebuild receives a power injection in the form of a 150-hp O-320. And so did the Thomas airplane. But the search for performance and utility didn't stop there.

"We replaced the horizontal tail surfaces with balanced Super Cub units, which included the PA-18 trim system and flying wire carry-through. The elevator control



The Piper Cub mascot gets a new name and a pony to ride, recalling the black and white film serial, *The Cisco Kid*. "Hey, Cisco! Hey, Pancho!"

system, which originally used a bell crank, was replaced with the cable units from the Super Cub.

"Then we installed most of the Cub modifications certificated by F. Atlee Dodge and others into the fuselage. This included 'X' bracing the top of the fuselage and a bunch of other structural beef ups. Our number one goal with the airplane modifications was to make it crash-worthy. We didn't plan on crashing, but in Alaska, that's always in the back of your mind.

"At the same time, we modified the baggage compartment with the cathedral and knee braces to make a large baggage compartment, which could be used for shelter if the weather got bad. I'm glad we did that because I had to sleep inside the airplane one time when the wind was so strong I couldn't make it through a mountain pass."

One very useful modification is a toolbox under the back seat. This provides a good spot to keep tie-down ropes, chocks, gust locks, tools, a quart of oil, and other gear,

which might otherwise become free-floating objects during turbulence.

Jim also likes to point at the relief tube as being one of the more practical modifications he's made to the airplane because it has come in handy many times on the long-distance treks of which he seems so fond. He's had the Chrome Cub as far north as the Arctic Ocean, west to the Bering Strait, as far east as Oshkosh, and as far south as the tip of Baja California. We all know there is no such thing as a fast Cub, so it's easy to see why he prizes the relief tube so highly.

"Cruiser wings are basically the same as the Super Cub, so it was no problem to add the PA-18 flaps. At the same time we installed F. Atlee Dodge 60-gallon tanks and a small header tank under the instrument panel. The header tank is needed so if you're making a circle approach to a landing and un-port the fuel tanks, the engine won't quit on you. We also put Dodge tie-downs in the wings, which I think are one of the best things you can do for any Cub because they eliminate the stress on the wing strut fitting and can also be used as a jacking point for working on the landing gear.

"The engine I installed came out of a Super Cub, and the 150 hp really makes the airplane perform. A unique mod to the engine compartment done some time ago was installing a cowl flap into the bottom of the cowling. It doesn't do much good, but at least I can say I have one."

When the Thomas boys were done with their little airplane, the list of certificated modifications totaled 52. Still, with all of the detail work and effort expended to make the airplane fly better and be more useful, folks generally see only one thing—the aluminum skin. Well, that's probably just the way it's going to be. After all, there's a good reason it's called the *Chrome Cub*.