

Steve Pitcairn has preserved his father's airmail and Autogiro heritage

BY ALTON K. MARSH

Son of a pioneer

Stephen Pitcairn likes anything that has an engine. That's why his hangars at Trenton Robbinsville Airport, New Jersey (near Philadelphia), are filled with motorcycles, cars, and a 1943 tractor, in addition to the Autogiro and open-cockpit Mailwing biplanes that his father made famous.

It's not a museum, but Pitcairn welcomes visitors. If you're lucky, you just might see one of the antique aircraft flying on any given day, seven days a week if the weather is good. He regularly flies the PCA-2 Autogiro at the airport's airshow each fall and at events in his area. All the Mailwing biplanes are flown as well.

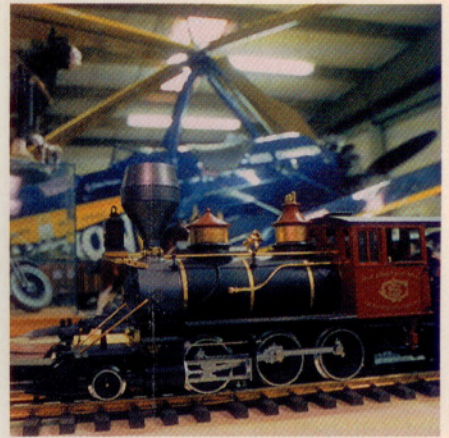
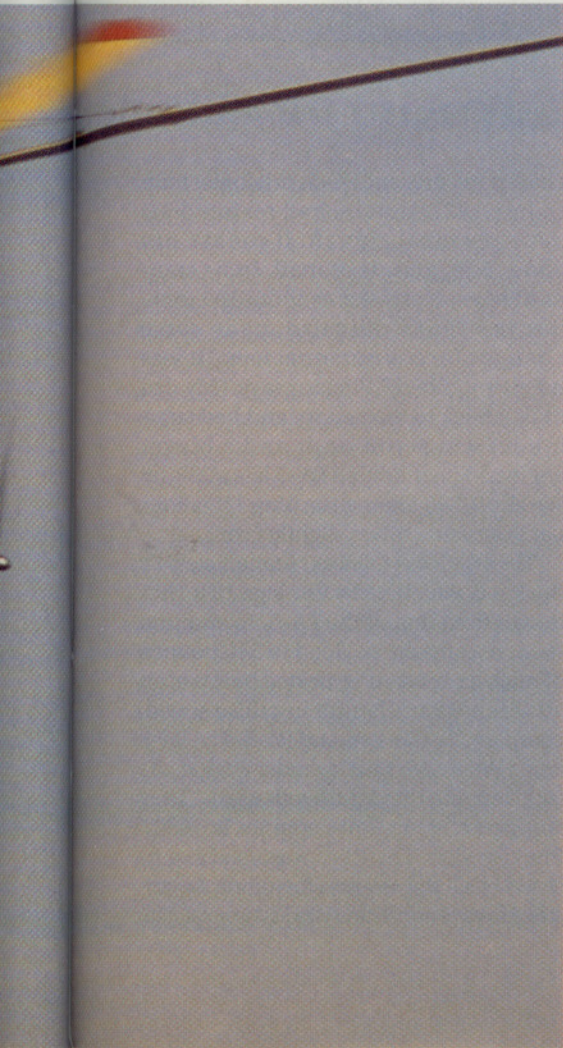
You may already be familiar with the Pitcairn Autogiro, invented by Juan de la Cierva of Spain and developed further by Harold F. Pitcairn, Steve's father, in the 1920s and 1930s. President Herbert Hoover presented Pitcairn and Cierva with the Collier Trophy on the White House lawn for the development of the Autogiro. However, you may not be aware that Pitcairn was an aviation pioneer in other ways, playing important roles in the development of airmail service and the helicopter. He began in aviation at a time when the public was afraid to fly, and his dream was to develop an inexpensive and safe aircraft that would change that public perception.

The senior Pitcairn was eventually granted patents that were key to the successful development of the helicopter in the United States—a fact upheld by the U.S. Supreme Court in a lawsuit filed by Pitcairn against the federal government over royalty payments. Igor Sikorsky cut eight years off the development of his first true helicopter in the 1940s by licensing patent rights for control mechanisms from Pitcairn.

Pitcairn designed and built Mailwing aircraft in his factory at Bryn Athyn, Pennsylvania. He later moved the factory to

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Mike Posey, who directs the restoration work for the Pitcairn collection, flies the PA-8 (left) while Stephen Pitcairn flies the Autogiro. Pitcairn's shop (above) is filled with toys—not for the many kids who visit, but for Pitcairn himself.

Willow Grove, Pennsylvania, where it still stands—now used by a company that manufactures test instruments. In fact, Willow Grove was Pitcairn's property, but as a patriotic gesture he sold it for a pittance to the Navy during World War II for the establishment of Willow Grove Naval Air Station. His successful airmail business was sold in 1930 and renamed Eastern Air Transport, the forerunner of Eastern Air Lines. Stephen Pitcairn flew for Eastern for three years during World War II.

If Harold Pitcairn's career could be summed up in four words, it would be these: He built good aircraft. The Mailwings were among the sturdiest construction on the market, thanks to superior welding and, some say, the use of square tubing. One Mailwing crashed into Stone Mountain near Atlanta at night in poor weather, but the pilot survived. They could be flown hands-off for long periods of time because Pitcairn knew that capability was important to airmail pilots. Pitcairn's aircraft met and often exceeded factory specifications for speed and payload.

"It met its design criteria perfectly," says Mike Posey, who is in charge of the restoration of Pitcairn's collection. "The planes were generally better equipped than other aircraft." Posey and James Cole have restored nearly a dozen aircraft to historically accurate condition for Pitcairn. Gail Henk helps out on a volunteer basis. The three might be called "Steve's elves."

It's no wonder Stephen Pitcairn grew up loving airplanes. He was a toddler when the Pitcairn company was building Mailwings, and old enough to develop a serious interest in aviation when the mail service was sold to concentrate on the Autogiro. But he says there was no one reason for his interest in aviation.

"I just wanted to fly," he recalls. He learned to fly at age 16 in 1940 at Philadelphia's Wings Field, the same airport where AOPA was founded in 1939. He recalls flying a Cessna 140 off the lawn of Cairncrest, the family home in Bryn Athyn. That same lawn was the scene of numerous Autogiro landings, including a flight carrying Autogiro inventor Cierva when he came from Spain to visit Pitcairn.

The prize of the Pitcairn collection is the PCA-2 Autogiro, with PCA standing for *Pitcairn Cierva Autogiro*. It had wings because the ailerons were needed for directional control, but later-model Autogiros had no wings. Pitcairn's engineers developed a method for tilting the rotor itself, the key to today's modern helicopters. The PCA-2 was built in 1931 and cruises at 100 mph. It sold for about \$15,000. It is powered by a 330-horsepower Wright R-975 engine that burns about 19 gallons of fuel per hour. Pitcairn, the only person in his company who flies it, has taken it around the nation.

"I took it to Oshkosh, and to Florida near Jacksonville for a movie. It was called *The New Adventures of Pippi Longstocking*, based on a kid's book," Pitcairn says. *Pippi Longstocking* depicted a pilot who went out to rescue some girls in a barrel on a river with a waterfall. Actually it was [filmed] on a golf course. I came flying over with a big ladder hanging down the side." In actual life, the girls would have needed quick hands, since the PCA-2 can't hover.

Seventy years ago large companies used the Pitcairn Autogiro for advertising. The aircraft not only attracted attention, but it stopped traffic and often ended up in movie newsreels. Companies using them included the *Detroit News* (that Autogiro is now in the Henry Ford Museum), Champion Spark Plugs (the same one Pitcairn now flies), Coca-Cola, and Sun Oil.

"The early Autogiros had wings, ailerons, and elevators because all your control was through those control surfaces," Pitcairn says. "You had no control of the rotor. The only control you had was on the ground—you could bring the rotor up to speed by a power take-off [from the engine]. You [then] released the clutch so that you no longer had power to the rotors. The problem was that when you slowed it down to 30 mph you would lose your aileron control. When you'd do a

Mike Posey works in the Pitcairn shop. In a year or two he will restore one of the largest Stearman aircraft ever built. He is assisted by James Cole and volunteer worker Gail Henk.



Amelia Earhart set a few records in an Autogiro for altitude

landing and a flare, you almost stopped—the ailerons were useless. My dad came up with direct control [of the rotor head], so all your stick movements were related to the rotor head. You could do away with wings, elevators, and ailerons. There were wingless Autogiros built after that."

Amelia Earhart set a few records in an Autogiro for altitude and distance, but she also crashed twice. Autogiros didn't do well in what are called *drifting landings*—a crosswind—and had to be landed directly into the wind. The rich and famous were intrigued by the aircraft, sometimes using them for going to sporting events or, as one Pitcairn ad suggested, to the country club. The innovative Autogiro also brought praise from inventor Thomas Edison.

While the Autogiros got all the press coverage and consumed all of the company's attention and resources in later years, it was the Pitcairn Mailwing that was the workhorse and early breadwinner. In all, about 145 were built. Perhaps the real credit for starting the mail service should

go to the banks of that era, as Pitcairn family archivist Carl Gunther explains.

"Banks in the South found that they could have their receipts picked up in the late afternoon, trucked to the airport, flown to New York clearinghouses, worked on overnight, and trucked back to the airfield early the next morning. There was a 24-hour turnaround vs. the 72-hour turnaround that it took using the trains. This saved the banks \$3 million that first year [of airmail service] in interest payments alone," Gunther says. The airmail pilots flew at night by following a string of light beacons spaced 10 miles apart along the route.

Driven by such economic advantages, the government offered contracts to fly the mail. Pitcairn was successful in winning first a New York-to-Atlanta route and then an Atlanta-to-Miami route. At the time, Pitcairn was already in the aviation business, building aircraft for ride hopping, flight training, and personal sport. The PA-5 was the first Mailwing. Pitcairn didn't realize until after he pur-

chased his present PA-5, originally built in July 1927, that he had restored his dad's personal aircraft. It could carry about 500 pounds of mail. In its standard form, it cruised at about 105 mph, but the senior Pitcairn made some changes for his personal use. "It was highly modified," Pitcairn says. "My dad took it back to the factory and had later-model wings put on it and a bigger engine." The modified PA-5 has a 230-hp Wright R-760 engine burning 11 gallons per hour and cruises slightly faster.

The PA-5 was followed immediately by the PA-6, which had a fuselage 12 inches longer than that of the PA-5. In addition to increasing the payload to 549 pounds of mail, he got an unexpected bonus of an additional 8 to 10 mph in cruise speed, compared to the standard PA-5. The PA-6 had a Wright J-5 nine-cylinder engine, the same engine that Lindbergh used. "They stopped making those engines in 1930," Pitcairn says. The PA-6 was used extensively by all the airlines, including American Airways and Trans World Airways. The

one Pitcairn owns was built in July 1929 and sold for \$8,500.

The PA-7S in the Pitcairn collection was the sport model of the Mailwing, and while it could carry the mail, it was aimed at air-race pilots and aviation enthusiasts. That explains the snappy turquoise side panels of the 250-hp, 125-mph aircraft. The one Pitcairn owns was once owned by a coal company and was used for distributing free samples of its product. It was specially painted for the coal company. "This airplane came out of the factory coal black with chrome struts," Pitcairn says. "The company that used it—the Horizon Coal Company—used it to buzz small towns, then land in a cow pasture and hand out free bags of coal to get people to buy their coal. This plane had what looked like a mail compartment, but it was used to carry coal."

The Mailwing line ended with the huge PA-8, a 330-hp aircraft capable of carrying 1,000 pounds of mail, 100 gallons of gasoline, and any size pilot. Originally it had the 330-hp Wright R975-E engine, but Pitcairn found that such engines were impossible to find, so his PA-8 has a Wright R975-E3 nine-cylinder, 440-hp engine. It can cruise at 135 mph.

The PA-8 also has a number of innovative features. Not only does the seat adjust, but the controls move up and

Pitcairn sold his airmail service] until 1936. They phased them out because they had the DC-3s and -2s that would carry mail *and* passengers."

Hand-tooled latches for the mail compartment and engine cowl were mostly gone when Pitcairn began his restoration of the PA-8. A craftsman in rural Pennsylvania who makes antique doorknob hinges and locks for antique barn doors was asked to duplicate them. He studied a remaining latch and made 16 of them.

Stephen Pitcairn's collection is not limited to aircraft developed and built by his father's company. The favorite of his collection may be the Bellanca Viking because "It's the best airplane flying." In all, he has 11 aircraft, including a Schweizer 300C helicopter. The collection includes two Luscombes (a 1946 8A and a 1940 8C Silvaire), a 1980 Great Lakes 2T-1A2 for aerobatic maneuvers and fun flying, and a 1946 Globe Swift GC-1B. The Luscombe company built the fuselage for a later refinement of the Autogiro, the PA-36 cabin Autogiro.

One of the workers said Pitcairn brings an air of excitement and energy to his restoration workshop. That energy is obvious as he zooms by the hangar door over the nearby runway, exercising a Mailwing or flying the PCA-2 Autogiro. Sometimes he will bring the 1935 Indian

and distance, but she also crashed twice.

down with the seat. There are four pedals on the floor—the inside pedals are brakes while the outside pedals are rudders. Carburetor heat and cockpit heat are provided. The plane could fire magnesium flares to light an area one mile in diameter from 2,500 feet (the flares were removed and disarmed with the aid of the Pennsylvania State Police). Mechanical retractable landing lights are located underneath the wing (as opposed to the fixed landing lights of the PA-6). It also had a Sperry artificial horizon. Finally, the aircraft came with an eight-day, seven-jewel Waltham clock.

There were only six PA-8 aircraft made, so Pitcairn is lucky to have snagged his 1931 model. "That was about the same time the Douglas DC-2 and Ford Tri-Motors were coming along," Pitcairn says. "The government said, 'You guys with contract airmail, you've got to carry passengers along the same route as your contract, but you don't have to carry them in the same airplane.' So my Dad bought three Ford Tri-Motors. The PA-8 was used by Eastern Air Transport [after

Chief or 1953 Big Chief motorcycles out for a spin on the airport grounds. Those rides, he revealed after intensive questioning, have reached 90 mph—but that was in his youth when he was 75. He's 76 now and presumably more mature.

He is as proud of his antique cars as he is of his aircraft. His 1906 Maxwell L94 won a national first-place award for restoration. He also owns a 1911 Midland, a 1909 Sears and Roebuck (Sears sold *everything*), and a 1957 Ford Thunderbird.

At first, the organization of Pitcairn's hangar makes little sense. There are named plaster dogs, a teddy bear that Pitcairn thought was "cutesy" that sometimes holds a beer can while sitting on a Mailwing, an electric train, and models of draft horses. Are the toys there, he is asked, to please the kids who frequent his workshop? No, he answers, they are there to please Stephen Pitcairn. "I'm still a kid at heart," he adds.

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