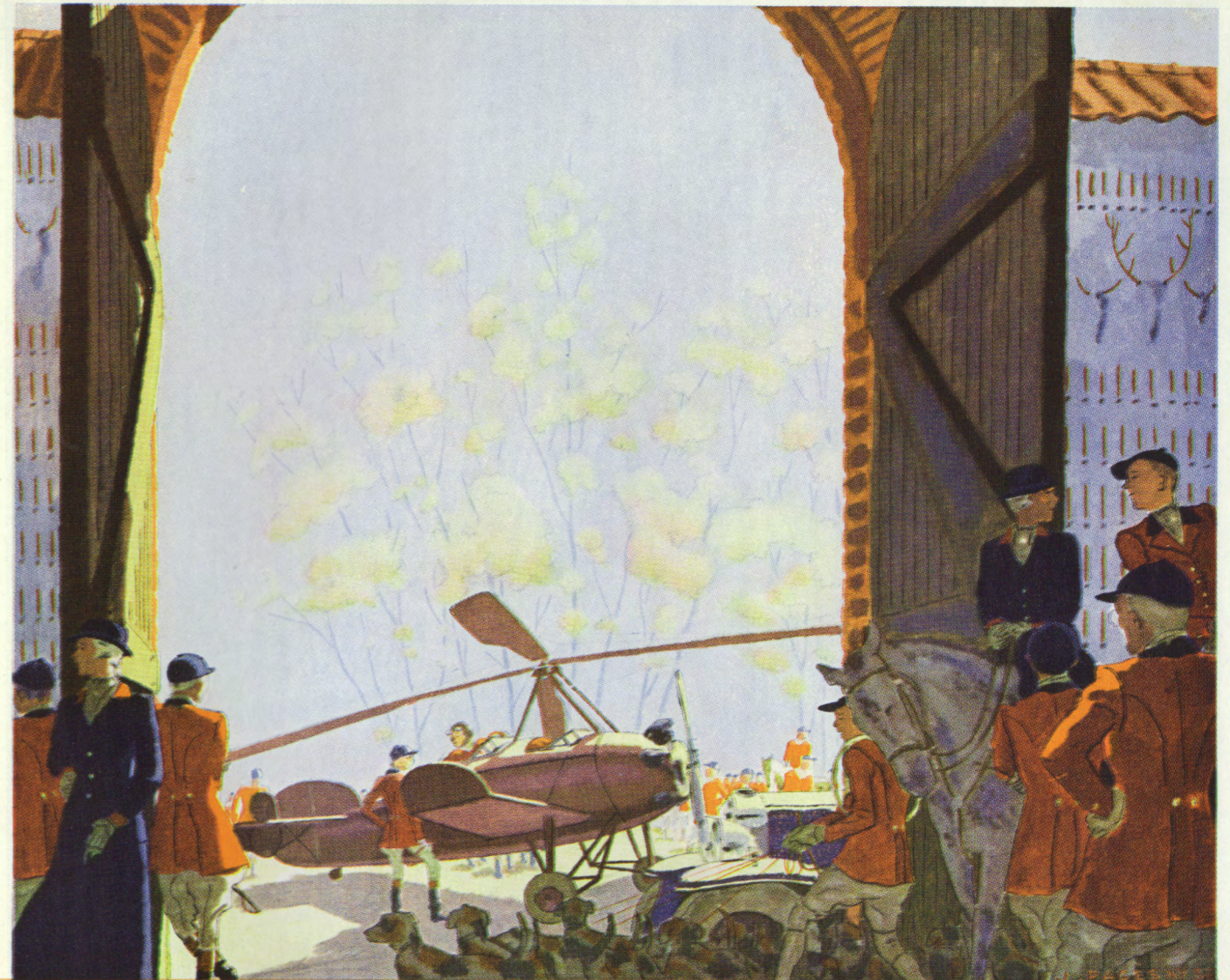




PITCAIRN
autogiro



Historical Highlights

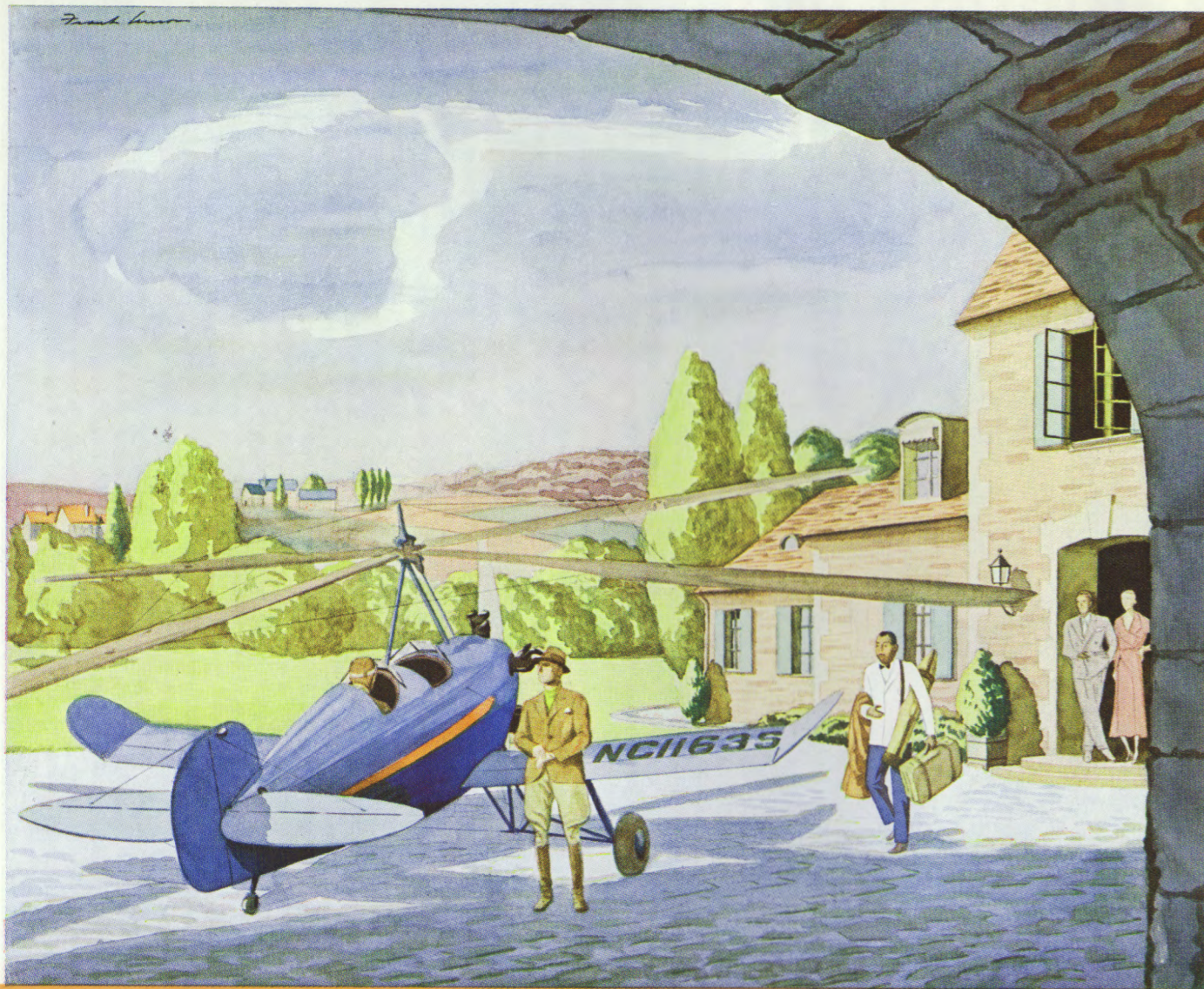
Although the first successful Autogiro flight was made at Madrid, Spain, in 1923, it was not until 1928, after Cierva's craft had proved its practicality by flying all over Europe, that America first saw one of the "flying windmills."

The first American flight was made at Pitcairn Field by a British built, American powered Autogiro. Since then, the Pitcairn Autogiro has made its own history.

The first American built Autogiro was a Pitcairn—constructed for the Autogiro Company of America. The first Autogiro ever sold for commercial use in America

was the Pitcairn bought by the *Detroit News*. The first American Autogiro ever sold to a private owner for amateur flying, was a Pitcairn.

Thousands of individual flights, covering many hundreds of thousands of air miles, have more than adequately demonstrated the security and practicality of the Pitcairn Autogiro in the hands of private owners. With this security established, the latest refinements and improvements resulting in added speed and greater comfort, make the Pitcairn Tandem Autogiro the ideal aircraft for the private owner.



Designed to fill a vital need in the field of aviation—

Men took to wings in 1903. In nearly three decades of war and peace, the growth of aviation has been tremendous. Air mail and transport lines cover not only our own country, but the world. Yet the very growth of aviation has served to accent and emphasize the fact that the airplane is a specialized craft. Like the automobile, the airplane owes its existence to an ability to provide swift transportation.

Unlike the automobile, the airplane provides this transportation in a limited or special manner. Millions of individuals—amateurs—own and operate automobiles. A comparatively few highly trained pilots—experts—operate airplanes, and those mostly for mail and transport or military use.

When the airplane was only twenty years old, Juan de la Cierva foresaw the opportunity for growth in the use of a new type of aircraft. He had designed and built airplanes, among them one of the very first trimotored, large size craft. He foresaw that as airplanes increased in size and speed, they automatically increased the requirements for space in which to take-off and land,

and automatically placed a greater burden of responsibility upon the pilot.

He set about to design a craft that would have speed with inherent security sufficient to permit the average man to learn to fly it. He knew that such a craft should be one that does not require high speed for safe flight, and which can be landed at low speeds, or, if possible, at no forward speed. He wanted a craft that could be flown from and landed upon its owner's property or some other convenient place, to free its owner from entire dependence upon the large airport.

He found that type of craft by creating the Autogiro. The Pitcairn Autogiro is a craft primarily created for the private owner. The rotor provides sustentation, and security of flight is divorced from the necessity for high speed. Yet present Pitcairn Autogiros are capable of flying at high rates of speed—over 100 miles an hour. Less time is required to learn to fly and a heretofore unheard of security is provided, even while learning. The amount of space required to land is only a fraction of that necessary for any other type of aircraft.

THIS YEAR OWN AND ENJOY A PITCAIRN AUTOGIRO *Perhaps the stone-paved courtyard here may permit the Pitcairn Autogiro to taxi closer to the door than on most estates, yet many country estates have ample room upon the lawn for a Pitcairn Autogiro to land and take off, and many more have nearby fields or meadows which permit this aircraft to bring all of its time-saving utility almost to the very door of the owner. With its security amply demonstrated, the convenience afforded by the Pitcairn Tandem is something that every sportsman, or business man may consider for utility and enjoyment.*



The Pitcairn Tandem, ready to leave the lawn of a country home, with engine and rotor blades started in motion. (Right) Blades have reached take-off speed as shown by the characteristic upward coning position.



Why rotating "Wings" provide inherent security in flight

Everyone knows that the fundamental requirement of all heavier-than-air flight is that the craft's lifting surfaces must be driven through the air at high speed.

The lifting surfaces of the airplane are its wings. These are rigidly fixed to the body of the craft. Airplane wings can move rapidly through the air only when the entire craft moves at the same rate of speed. The lifting surfaces of the Autogiro are its rotor blades. These are free to move about a central axis, and they travel at a high rate of speed in a rotary direction, even though the craft itself may be standing still.

The only way that the airplane's lifting surfaces can be moved rapidly through the air, is to pull the entire craft forward by engine power exerted through a propeller. While the Autogiro is in the air, its rotor blades have no connection whatever with the engine. Blades are moved rapidly at a practically constant rate by natural forces alone, independent of the Autogiro's forward speed.

This lifting force is not enough to lift the machine straight up from the ground. It insures, however, that

very little forward speed is required to sustain it in flight. It is for this reason that the Autogiro can fly slowly, can take off at low speeds after a very short run, and can land in small areas with little or no run after the craft touches the ground.

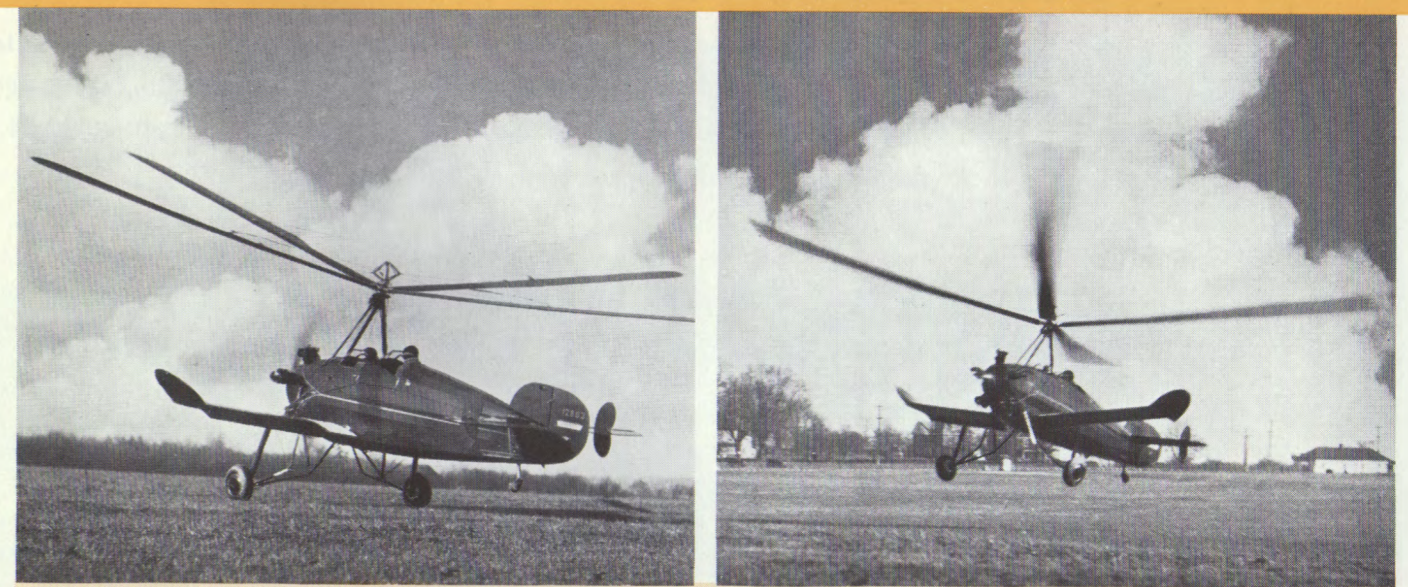
Rotor blades have no connection with the engine while the craft is in the air. Before taking off, engine power is used to start the blades in motion, by the use of a clutch. As soon as the blades have reached required rotational speed, the clutch is released. At the time of take-off, while flying, and while landing, at all times while the craft is in the air, there is no connection with the engine.

Blades are rotated continuously while the craft is in the air, by natural forces alone. It is this continuous lift or sustentation, regardless of the engine or of forward speed, which gives the pilot the ability to descend slower than a man in a parachute, and to come down nearly straight or to glide forward, even in the case of engine failure. More important still, this constant and continuous lift offers a tremendous increase in security to the private owner, and to the novice while learning to fly.

SECURE AND PRACTICAL FOR RECREATION AND UTILITY

The open areas surrounding almost any country club offer room for the owner of the Pitcairn Autogiro to fly directly to his golf game. Requiring little room to take off and even less to land, the Pitcairn Autogiro can go direct to the scene of sporting contests. In many cases the infield of a

racing track, a polo field, open areas in many locations free the owner of the Pitcairn Autogiro from the requirement of seeking a safe landing place only on the long runways of the large airport. This alone would make it the ideal craft for the private owner, yet it has the added feature of proved security.



When the rotor blades reach sufficient rotational speed wheel brakes are released and the take-off run is started. (Right) A few yards' run and the ship is in the air.



CHART No. 1

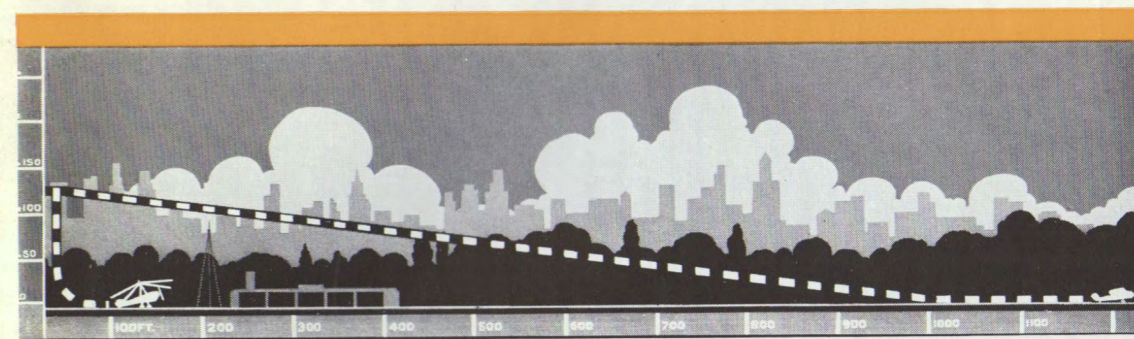


CHART No. 2

What the Pitcairn Autogiro will do . . .

Charts on this page were secured by comparing a Pitcairn Autogiro with a Pitcairn Mailwing airplane, each with engines of the same power and make. Unless otherwise stated, figures refer to performance in still air.

Chart No. 1 shows (by the solid lines) the shorter take-off run and steeper climbing angle of the Pitcairn Autogiro compared with an airplane of equal power, shown by dotted lines. The two upper lines show performance in a thirty-mile wind, the two lower lines in still air.

Chart No. 2 shows comparative areas required for safe landing. From 150 feet above the field, the airplane makes a normal glide of 1,000 feet and a ground run of 200 feet more before stopping. The Pitcairn Autogiro can, of course, glide to a normal landing, but an experienced pilot can bring the craft down almost vertically to land with no forward roll.

Chart No. 3 illustrates the principles of support in three types of aircraft construction. In biplanes the wings are trussed to the fuselage on each side by bracing. In monoplanes the same is the case, or the wings may be built without external bracing as in cantilever construction. In the Pitcairn Autogiro, the weight is suspended from above—and the rotor blades are held extended, as they rotate flexibly, by centrifugal force, equivalent to several tons.

Chart No. 4 illustrates the Pitcairn Autogiro, descending even more slowly than a man in a parachute.

Chart No. 5 indicates how the constant support of rotating blades provides inherent security where obstacles are present on take-off. If the engine fails, or an obstacle cannot be cleared, the Pitcairn Autogiro can be landed safely.

Chart No. 6 illustrates the relative space required for a turn in the Pitcairn Autogiro and an airplane of the same power.

Chart No. 7 gives a graphic representation of the minimum speed required to sustain aircraft. In $12\frac{1}{2}$ seconds the airplane must fly 1,000 feet—approximately the entire length of the George Washington Bridge across the Hudson River at New York. This is the *slowest* it can fly and not lose altitude. The Pitcairn Autogiro, in the same length of time, need fly only 400 feet without losing any altitude.

Chart No. 8 illustrates why the Pitcairn Autogiro cannot go into a spin. Rotational speed of the rotor is independent of the fuselage of the craft. No matter what happens to the engine, no matter what may happen to forward speed, the rotor blades rotate freely as long as the craft is in the air, with the craft suspended below them.

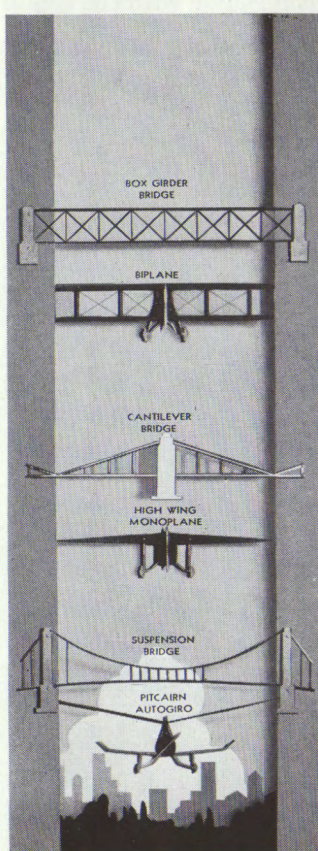


CHART No. 3

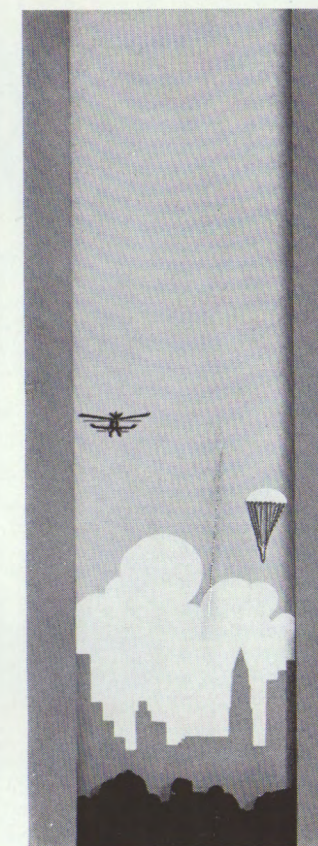


CHART No. 4

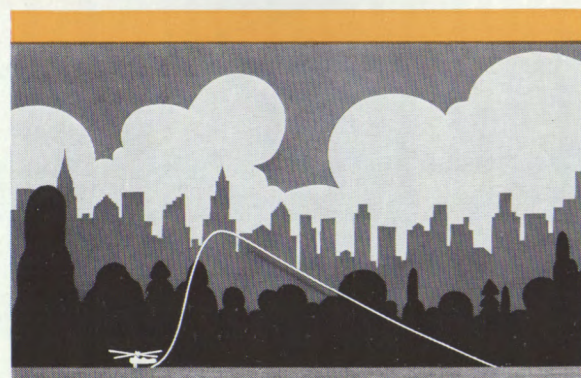


CHART No. 5



CHART No. 6

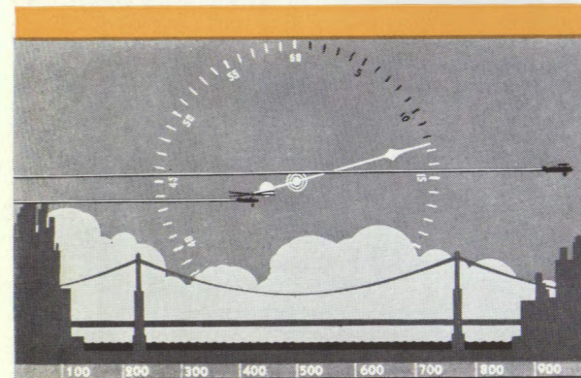


CHART No. 7

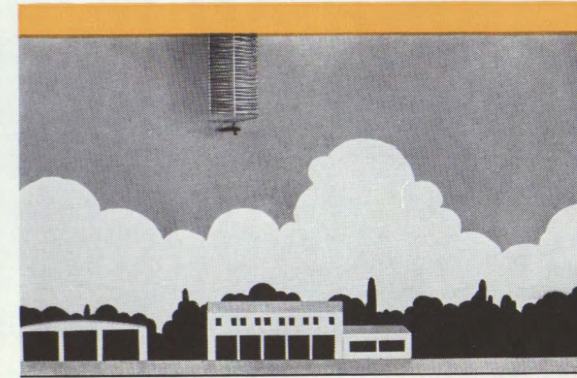
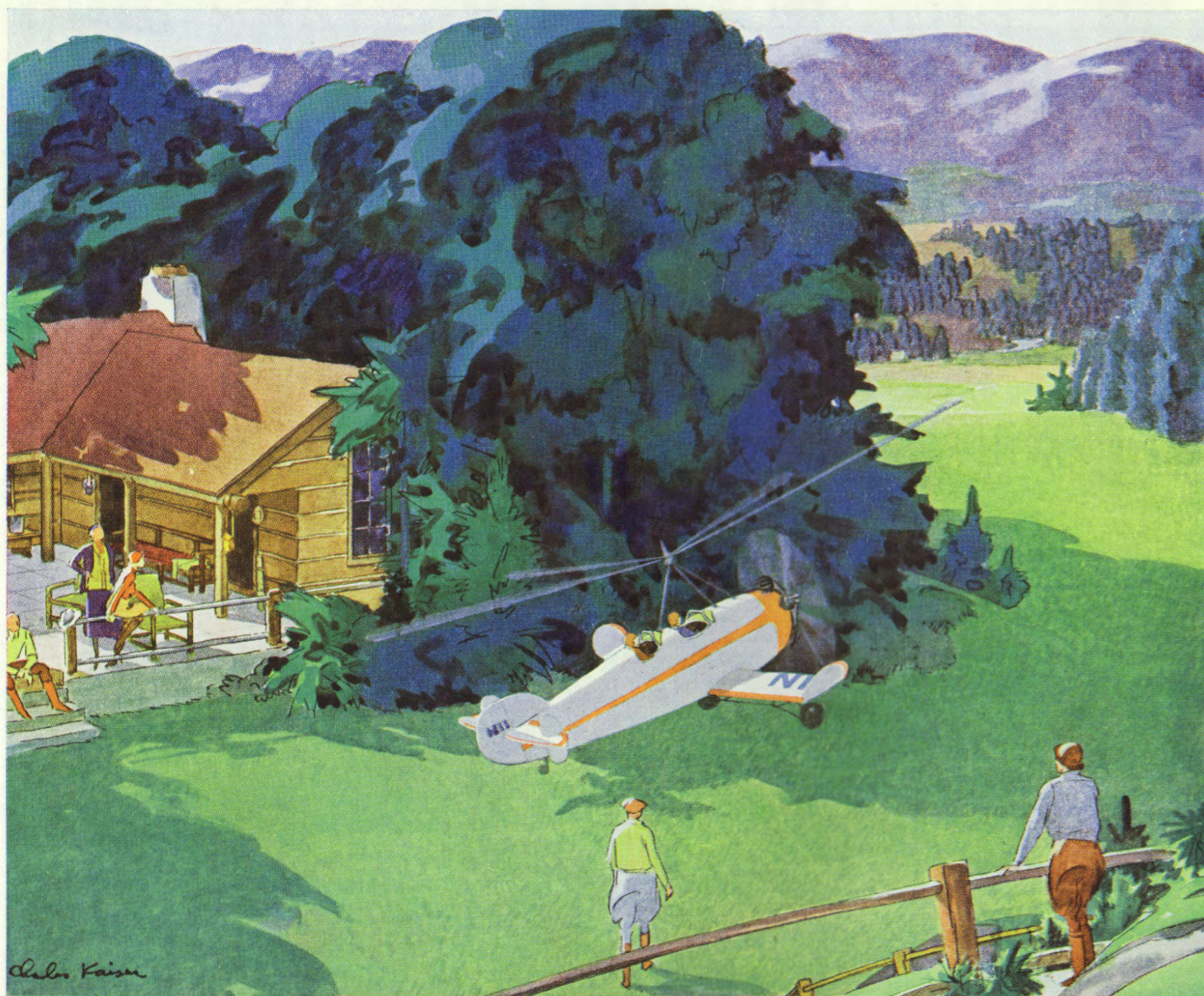


CHART No. 8



Everyday use has proved the Pitcairn Autogiro practical for a vast utility

Ownership of a Pitcairn Autogiro is no longer something to be considered for the distant future. It is something many sportsmen are enjoying today—something business men are enjoying for its practical utility in time saving and its security, as well as the sport it provides.

Some private owners are making almost daily use of their Pitcairn Autogiros. One, for example, flew more than 266 hours in less than 135 days—and nearly two-thirds of the time was in cross country flight.

Several Pitcairn Autogiros have crossed the continent from coast to coast and back again, both in the United States and Canada. A Pitcairn Autogiro, after flying for more than five hundred hours in this country, covering thirty-two states and carrying more than a thousand passengers, has since flown to Havana, and from there to the almost inaccessible ruins of Mayan civilization in Central America, and back again to the United States.

More than thirty-three thousand miles have been covered by one Pitcairn Autogiro in more than four hundred flights. Another Pitcairn Autogiro has made

more than twenty-three hundred separate flights, visiting eighty-nine cities and towns, while still another has carried four thousand, seven hundred passengers, and has flown five hundred and fifty hours.

You may, yourself, have seen some private owner of a Pitcairn Autogiro take off or land in some open space near his own home, to taxi almost to his own doorway. Even the owner who prefers to maintain his Autogiro at a public airport knows that he can fly to places that are inaccessible to conventional airplanes and land and take off in security from almost any open piece of ground.

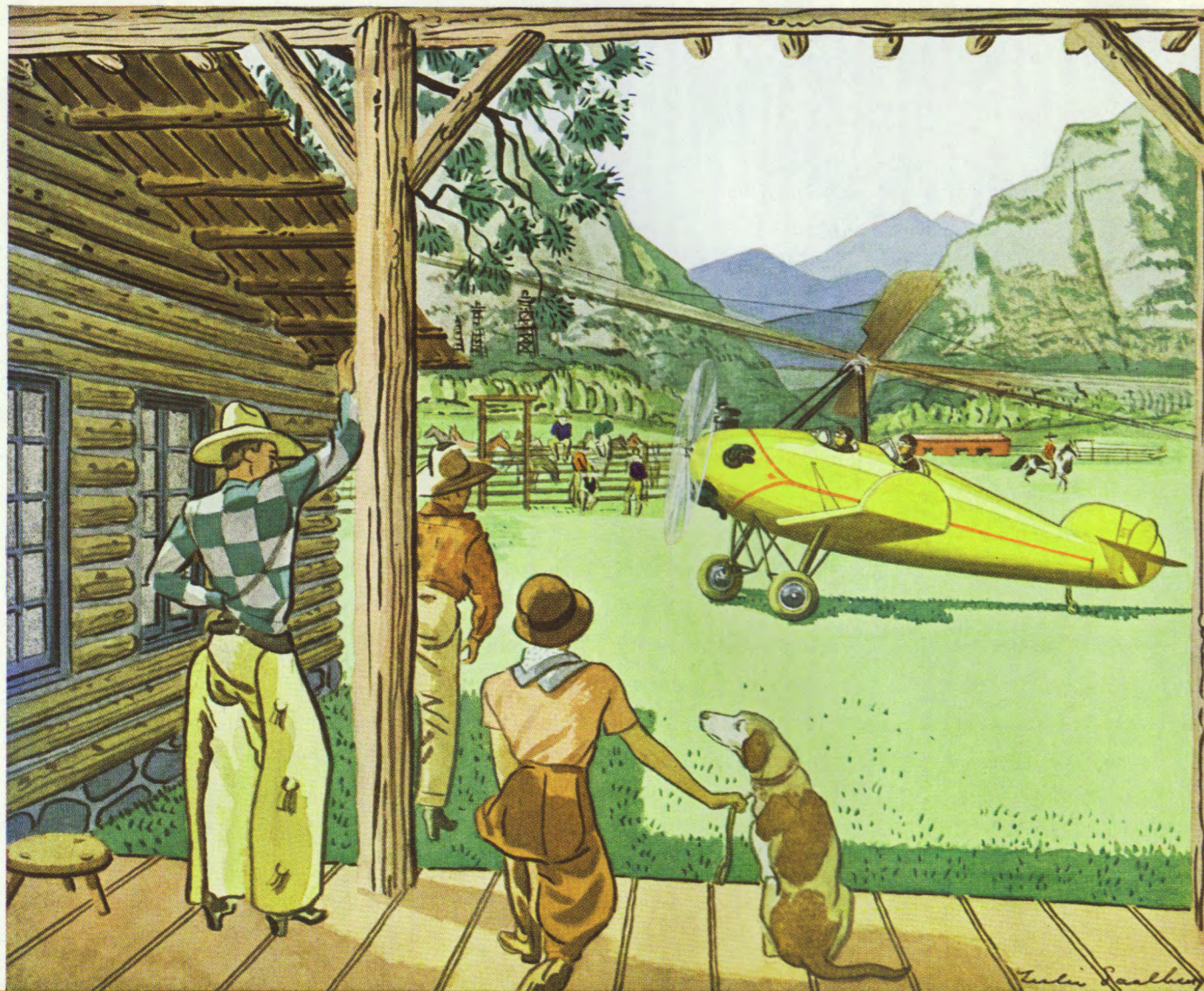
If you have a country estate with sufficient room to take care of the modest space requirements of the Pitcairn Autogiro, you now may consider it as something just as practical for you as a fine motor car.

If your home does offer sufficient space, or there is some open area nearby, arrange for a demonstration of the new Pitcairn Tandem at the spot where you would use it. Let it prove its practicality for your own requirements—and it will quickly prove its utility.

ADDS PRACTICAL SECURITY TO THE SPORT OF FLYING *The very isolation of the mountain-high, tree-shaded hunting or fishing camp that makes it so desirable, also makes it hard to reach and infrequently enjoyed. Freed from dependence upon train schedules and steep and narrow roads, the owner of a Pitcairn Autogiro can fly direct to week-end comfort. Freed from dependence upon the large airport, he can land in any available clearing, often nearly at the door. Utility for the private owner is the primary purpose of the Pitcairn Autogiro, with security well established by the experience of Pitcairn Autogiro owners.*



The Pitcairn Tandem with such a wide choice of landing areas can fly low and slow in security as well as high and fast. (Right) Descending to land in a restricted area inaccessible to other heavier-than-air craft.



Characteristics and features of the Pitcairn Tandem

In addition to the characteristics of any Autogiro, the Pitcairn Tandem has new features of its own for greater speed and comfort than before, and for a more practical enjoyment of the sport of flying.

The Pitcairn Tandem is so named because of the arrangement of the cockpits, one behind the other. This permits a design with less width and affords more speed per horsepower. It gives full visibility to both pilot and passenger. Tandem seating provides greater ease of handling for novice and amateur pilot. Both cockpits are equipped with controls, so that the Pitcairn Tandem can be piloted from either forward or after cockpit.

General specifications: Fuselage: Weight Empty, 1,310 lbs.; Gross Weight, 1,900 lbs.; Useful Load, 590 lbs.; Length of Ship, 19 ft., 5 ins.; Span of Ship, 21 ft.; Wing Area, 57.6 sq. ft.; Ground Height, (clearance to rotor hub) 10 ft., 6½ ins. Rotor:—Diameter, 40 ft.; Blade Area, 106.5 sq. ft.; Disc Area, 1,260 sq. ft. Power Plant:—Engine, 160 h.p.; Gasoline Capacity, 30 gals.; Oil Capacity, 3½ gals. Equipment:—Combination pump and gravity fuel system with wobble pump; Dual

Controls; Motor Starter; Cockpit Primer; Metal Propeller; Roller-bearing Semi-low-pressure Wheels; Parking Brakes; Tail Wheel and Landing Gear with Oleo Shock Absorbers; Fire Extinguisher; Navigation Lights; Leather Upholstery; Safety Glass Windshields front and rear cockpits; Full complement of necessary instruments including compass; Cadmium plated fittings.

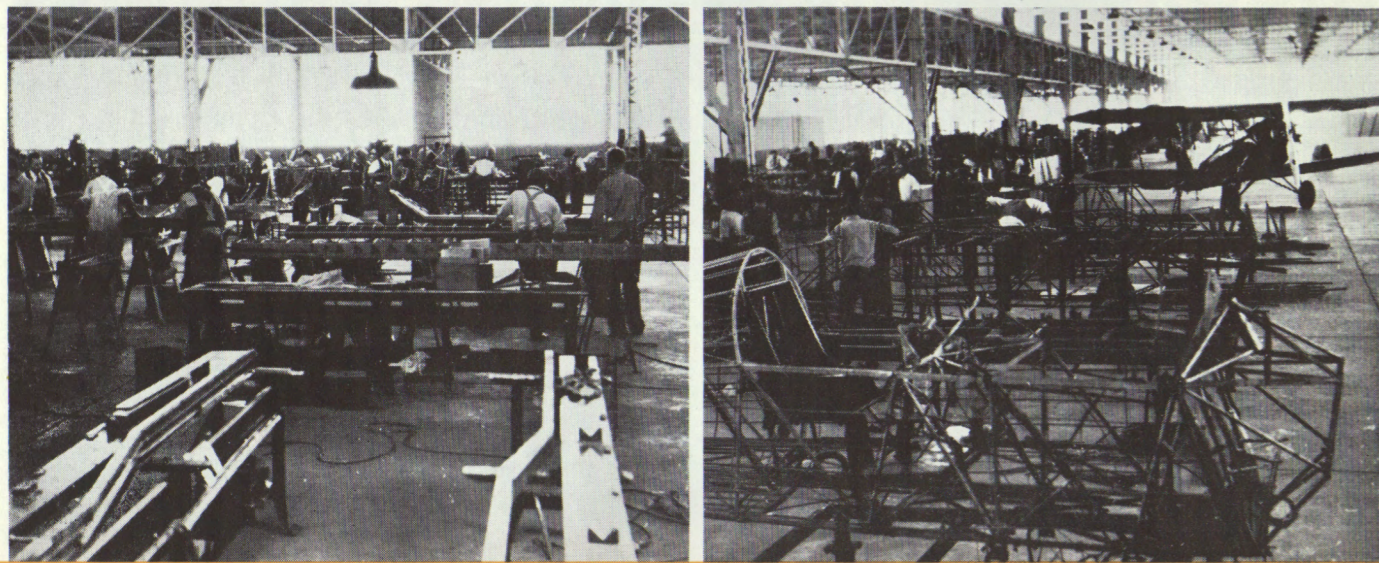
If there is anything else you would like to know about the Pitcairn Autogiro, write for additional information, which will be supplied promptly. Better yet, arrange for a demonstration to prove the utility and practicality of this craft, at the point where you would use your own Pitcairn Autogiro.

Pitcairn Dealers have factory-trained pilots and service men, to take care of every requirement of the private owner, from original demonstration to personal instruction in flying, and in the care of your craft after it is purchased. The Pitcairn Tandem truly is the ideal craft for the private owner flyer. Arrange for a demonstration now, and enjoy the fun and utility of flying throughout this year.

SWIFT, SECURE TRAVEL—WHERE DISTANCES ARE GREAT *The Pitcairn Autogiro is a cosmopolitan craft—at home in any part of the country. In the West, the owner flyer may seek in the sport of ranch life, real or “dude,” the same recreation the easterner finds in summer camps among the Adirondacks or Maine woods. In the great open spaces of the West, the ability of the Pitcairn Autogiro to fly from and land on small areas, brings starting point and destination nearer in point of time than other means of transportation. It provides swift travel with the security that distinguishes the Pitcairn Autogiro from other air-craft.*



Constant support independent of engine or forward speed permits almost vertical descent with the engine idling, or stopped (right). The Pitcairn Tandem lands in the length of its shadow, with scarcely any forward roll.



The organization responsible for the Pitcairn Autogiro

The illustrations above show an exterior and two interior views of the complete and modern plant of Pitcairn Aircraft, Inc., at Willow Grove, Pa. At the top is a bird's-eye view of the plant. At the lower left is a glimpse of rotor blade and wing construction, and at the right, the welded steel tubing fuselage construction.

Pitcairn Aircraft, Inc., is a company with a long and successful record in the aircraft industry. From the

earliest Pitcairn Orowings, the Pitcairn Mailwings of a successful air mail career, down to this newest Pitcairn Tandem Autogiro, Pitcairn products have always been recognized for excellence in design, material and craftsmanship. The Pitcairn plant is modern both in construction and equipment, manned by a personnel that has earned an enviable reputation in the field of manufacturing, piloting and servicing aircraft.

PITCAIRN AIRCRAFT, INC., PITCAIRN FIELD, WILLOW GROVE, PA.
Licensed to build Autogiros by Autogiro Company of America