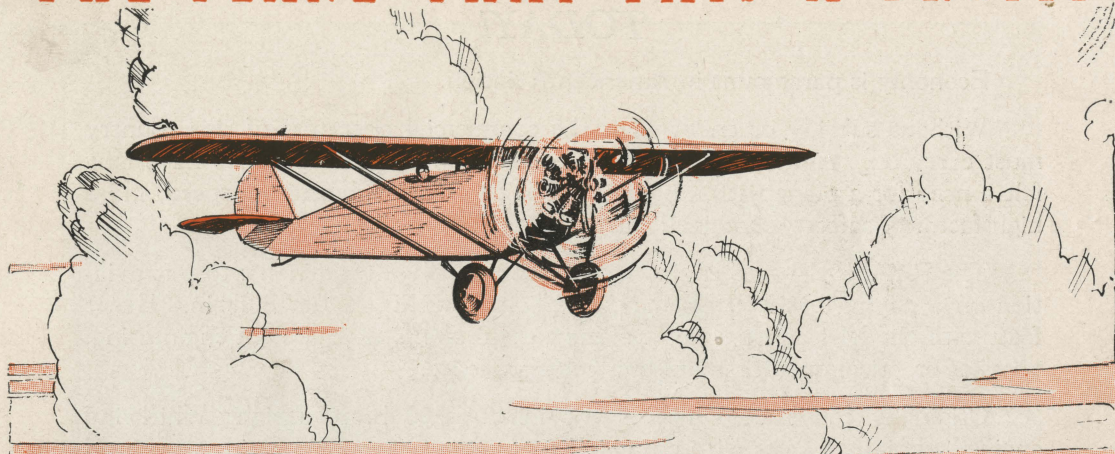


"THE PLANE THAT PAYS A PROFIT"



**RYAN M-1**

*Ryan Airlines, Inc.*

**SAN DIEGO**

A. ESSIG

## TODAY!

Economy is paramount in American Aviation.

Without subsidy or endowment the commercial operators of this country must carry on. Airmail, Airline, and Commercial Airport operators have long felt a need for a plane with a high pay load capacity, high cruising speed, and a high factor of safety—combined with economy of operation.

The RYAN M-1 was engineered with this thought dominant: to put aviation on a paying basis. Efficiency, simplicity, sturdiness, are built-in. Every feature of the M-1 construction reflects careful planning, thorough engineering, years of practical operating and building experience.

Originally constructed around the famous 200 h. p. Wright Whirlwind engine, subsequent tests with power plants of from 90 to 200 h. p. have proved the adaptability of this plane for many purposes, with efficiency never before believed possible.

The RYAN M-1 is truly "the plane that pays a profit."

T. C. RYAN.



## THE RYAN M-1

It has long been realized by those who have studied the problems of Air Transportation that the airplane would not come into general use until it had been developed to the point where it was possible to fly at a reasonably low cost.

New planes now on the market present real, worth-while values; they are the airplanes of today; they are a marked improvement over the airplanes of yesterday.

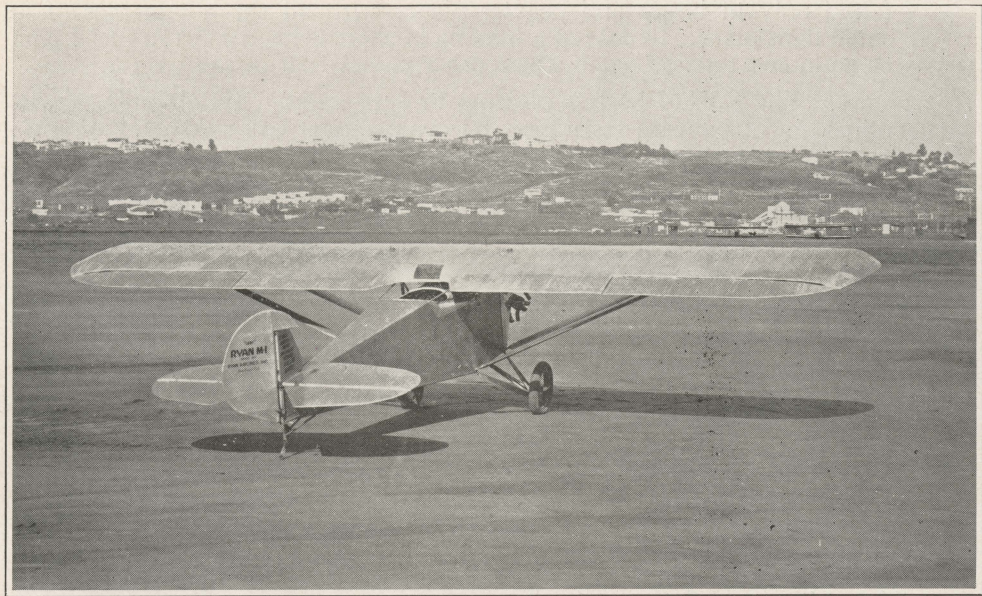
*The RYAN M-1 is an advance step in the science of airplane engineering. It is the airplane of tomorrow—available today.*

### AN ADVANCE TYPE AIRPLANE

*General type:* The RYAN M-1 is essentially a moderate sized, ruggedly built commercial airplane, with a high pay load and useful load capacity and a high cruising speed. It is built either as a mail or express plane, or with passenger cockpit accommodating two in comfort.

It is an externally braced, high wing monoplane, a type almost universally used in Germany where economy is imperative. It is recognized as the most efficient known.

The RYAN M-1 is a practical American commercial airplane combining the highest efficiency with all around airworthiness and serviceability. As a cross-country plane, it is ideal, possessing many advantages



found only in larger and heavier planes with all the advantages of a small light plane. In case of a landing in short fields the RYAN M-1 can come in and take off again where other planes float or roll too far.

*Appearance:* The RYAN M-1 is pleasing in appearance. Its clean lines and minimum of parasite resistance, its compactness and symmetry of proportions are striking. In the air it is as beautiful and graceful as a soaring bird.

*Engineering:* The design of the RYAN M-1, both aerodynamically and structurally, is the embodiment of the most advanced scientific and engineering principles. Three technical designing engineers on the RYAN M-1 are rated among the few leading aeronautical engineers in America. Every detail of the construction of this monoplane as well as the airplane as a unit has received endless thought and care in its design.

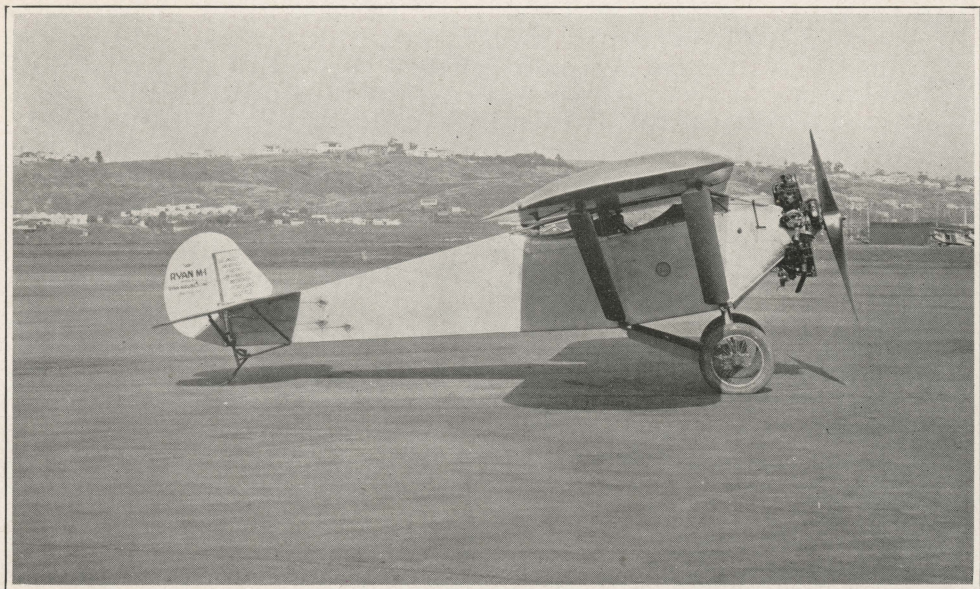
*Adaptability:* The RYAN M-1 possesses the unusual and very desirable feature of being readily adapted to a number of engines with unusual performance per horsepower with each motor. The demountable nose makes it possible to utilize this monoplane for a variety of uses. Owners may have low and high powered motors and exchange them as the type of use demands, thus giving service equal to the ownership of two or more planes. With the demountable nose it is possible to make a change of motors in twenty minutes, eliminating the necessity of a large number of reserve planes for airlines and flying companies.

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*Flying qualities:* "SOME AIRPLANE," the inevitable remark of every pilot when he taxis in from his first hop in the M-1. It practically flies itself in still air; response to controls is instant in all conditions and positions of flight. It performs every maneuver and stunt perfectly, with the exception of the tail spin. It will not spin. It has the very remarkable quality of settling flat after it loses flying speed. There is no tendency to fall into a spin or dive. All the controls are responsive even in this position of flight.

*Factor of safety:* The factor of safety throughout the plane is very high, being in accordance with Army and Navy requirements for fighting planes. This makes an extremely rugged and strong airplane both in the air and on the ground.

*Wires eliminated:* The complete elimination of exposed brace wires and corresponding reduction in resistance is also an important feature from the operator's standpoint. Wires require constant attention, maintenance, inspection and frequent readjustment and replacement. No rigging is necessary on the RYAN M-1 as there are no wires to rig.

*Wing mounting:* The wing mounting is unique, the wing being attached directly to fuselage structure. The cowling for cockpits is built ten inches below the wing permitting the pilot to see underneath the wing, straight ahead and up. Passengers also have excellent vision from the passenger compartment.



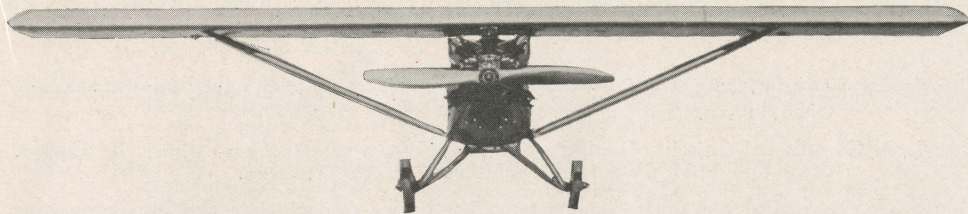
*Door for cockpits:* The deep fuselage construction makes possible the use of doors to enter both cockpits. The doors are ample in size and very convenient.

*Advantages of the monoplane:* The high wing monoplane construction has many practical advantages over a biplane in actual every day operation. The wing is above the heads of people walking on the ground, thus saving the damage suffered by the lower biplane wing when passengers step through it in climbing into cockpits; lean against it, sit on it or otherwise unintentionally damage it.

In entering the passenger's or pilot's cockpit, one walks under the wing, without stooping, opens the door in the fuselage and steps in. There is no climbing or crouching to be done.

In the event of a forced landing where it is impossible to avoid high grass or a fence, this type of split landing gear, high wing monoplane will roll through with the danger of nose-over at a minimum. The damage suffered by a biplane under similar conditions would be very great.

*Troubles eliminated:* One objective in the design of the RYAN M-1 was the elimination of annoying features of maintenance. Thus in a plane of this type built extra strong for hard service with a minimum number of parts, the operating expense and depreciation are very low. Replacement in case of damage is easy.



### PERFORMANCE OF RYAN M-1

	WRIGHT WHIRLWIND	SUPER RHONE	HISPANO SUIZA	CURTISS OX-5
Cruising speed.....	115	105	110	95 m.p.h.
High speed.....	135	112	125	100 m.p.h.
Landing speed.....	45	38	45	40 m.p.h.
Initial climb per minute .	1,200	900	1,000	800 feet
Climb in ten minutes....	9,000	6,000	7,000	5,000 feet
Service ceiling.....	17,500	12,000	15,000	9,000 feet
Pay load.....	600	400	500	300 lbs.
Cruising range.....	500	500	400	500 miles
Horsepower.....	200	120	150	90 h.p.

## *Specifications*

*Engine*—Wright Whirlwind, 200 h.p.; Super-Rhone, 120 h.p.; Hispano-Suiza, 150 h.p.; Curtiss OX-5, 90 h.p.

*Fuselage*—Constructed entirely of welded steel tubing, truss type using no wires. Its extreme depth and width make it an exceptionally strong structure.

*Wing*—Constructed of wood, with laminated spruce beams throughout. Ribs are very strong and rigid. The entire wing is light and durable.

*Landing Gear*—Split type landing gear giving maximum of ground clearance, minimum resistance and greater strength. It is constructed of Chrome Molybdenum steel tubing.

*Motor Mounting*—Constructed of Chrome Molybdenum steel tubing, exceptionally strong and rigid. Quickly detachable by removing four bolts.

*Wing Struts*—Steel tubes streamlined forming high speed airfoils giving minimum resistance and creating a considerable useful lift.

*Tail Skid*—Spring leaf type steerable on the ground.

*Epenage*—Built entirely of steel tubing. The Stabilizer is adjustable from the pilot's cockpit in flight.

*Cockpits*—Roomy and comfortable. Passenger cockpit has seat 36 inches wide and high back, generous leg room in front and baggage space under seat is provided. The passengers sit low, being well protected from wind. However they have perfect vision on either side, there being no lower wing to obstruct the view.

*Cargo Compartment*—When plane is used exclusively as mail and express plane the 36"x44"x48" compartment is ample space for five full sized mail bags. Entrance through large door on side of fuselage.

*Gas Tanks*—Located in wing on each side of fuselage, an ideal location from the standpoint of safety and simplicity. Each tank holds 28 gallons, or a total of 56 gallons in both tanks, giving a 500-mile cruising range. Gravity feed to carburetor.

*Pilot's Cockpit*—Stick control is used for the ailerons and elevators; the rudder is controlled by pedals placed at a natural leg angle so that long cross-country trips can be made without fatigue. The pilot is so protected from airstream by the contour of the wing that he may fly the plane without helmet or goggles in comfort.

*Equipment*—Altimeter, tachometer, temperature gauge and oil pressure indicator.

*Other Features*—Independent aileron control, independent elevator control, low center of gravity, inherent stability, a high factor of safety with a minimum of 7-1 throughout plane, conforming to government specifications and the National Aeronautical Safety Code.

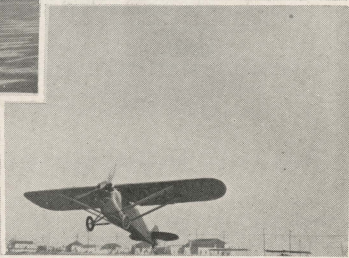


## RYAN Monoplanes

For WRIGHT WHIRLWIND  
SUPER RHONE  
HISPANO SUIZA  
CURTISS OX-5



Sensational Performance



## Outstanding Performance Features of the Ryan M-1

*Cruising Speed*—One hundred fifteen miles per hour with Whirlwind engine. This distinctive feature of the RYAN M-1 places it in a class by itself among commercial airplanes.

*Cruising Range*—Five hundred miles without refueling is real cross-country performance. It means that longer distances may be covered during the daylight hours; trips are more pleasant and safe.

*High Pay Load*—The major reason why the RYAN M-1 is "the plane that pays a profit," is the fact that the total useful load including pay load plus gas, oil and pilot is equal to the weight of the plane itself. This remarkable performance is more forcefully brought home when one sees it take its rated load off the ground with a run of only 390 feet and then climb like a pursuit plane.

*Economy*—Ten miles to the gallon of gasoline. Two thousand miles to the gallon of oil. Minimum of engine time per mile due to high cruising speed. Highest quality material throughout, thus greater length of life, lowest rate of depreciation. Even the initial cost of the RYAN M-1 is low.

*Lifting Ability*—It is interesting to know that although the pay load of the RYAN M-1 is given as 600 pounds with the Wright motor, the little plane has actually lifted a total useful load of 1500 pounds. Its own total weight empty is 1,100 pounds.



## Compare the Results

In the following table the RYAN M-1 is compared with the regular 400 h. p. D-H Mail Plane, now in use over the transcontinental airmail route.

	D-H Mail	Ryan M-1
Pay load.....	400 h. p. 400 lbs.	200 h. p. 600 lbs.
Landing speed.....	58 m. p. h.	45 m. p. h.
Cruising speed.....	90-95 m. p. h.	115 m. p. h.
High speed.....	121 m. p. h.	135 m. p. h.
Gas per 100 miles.....	22.5 gals.	10 gals.

The performance of the Ryan M-1 is better with only half the horsepower.

### OUT-PERFORMS PURSUIT PLANE

In a contest between a stock RYAN M-1 and an Army Air Service MB-3A pursuit plane it was found that the RYAN M-1 could turn inside the pursuit ship and generally out-maneuver it. From a standing start the RYAN M-1 climbed to 2,300 feet while the Army plane climbed to 2,000. The pursuit plane is constructed to carry *no pay load* with the exception of two light machine guns. The pursuit plane is also equipped with a 300 h. p. motor while the monoplane has only 200 h. p.

A FEW USES FOR  
*“The Plane That Pays a Profit”*

1. Air Mail Lines
2. Air Passenger Lines
3. Air Taxi Service
4. Special Delivery Service  
(Photos, Movie Films, Medicine, etc.)
5. Short Flight Passenger Service
6. Moving Picture Work
7. Aerial Advertising
8. Smoke Writing
9. Crop Dusting
10. Aerial Photography  
(Obliques, Mapping, etc.)
11. Student Training
12. Personal Business and Pleasure

*Manufactured by*

**RYAN AIRLINES, Inc.**

SAN DIEGO, CALIF.

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2914 L AV  
NATIONAL CITY CA 92050



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