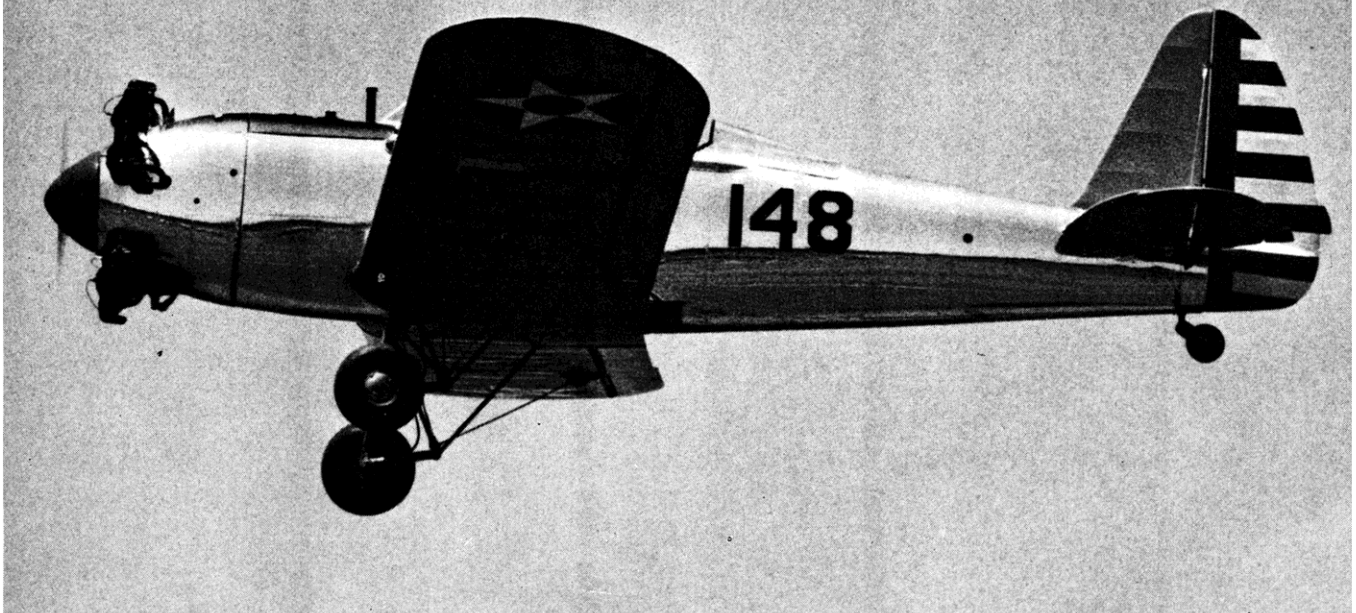


MILITARY TRAINERS

World War Two Military Trainers Have Always Been Popular With Modelers. This is the First of a Series on Military Trainers, from Primary to Advanced.

By Norm Goyer



We're bringing you this series on military trainers, and how they've been modeled in the past, in an attempt to show R/C hobbyists which are the most popular models, then present in-depth articles, complete with close-ups of engines, landing gears, struts, cockpits, surfaces, rib-stitching and cowling details. Armed with this information, a modeler can build his aircraft with the exact amount of detail he desires. The plans we will print in these pages will vary from *very* scale to *stand-off* scale.

Coverage will include those trainers beginning with the Ryan PT-22 (complete in this issue); the PT-19 and its conversions to the PT-26 and PT-23; biplane trainers, including the Waco UPF-7, PT-17 and possibly the Meyers OTW; and the advanced trainer category which, almost universally, was the North American AT-6 (detailed plans of this remarkable aircraft will also appear).

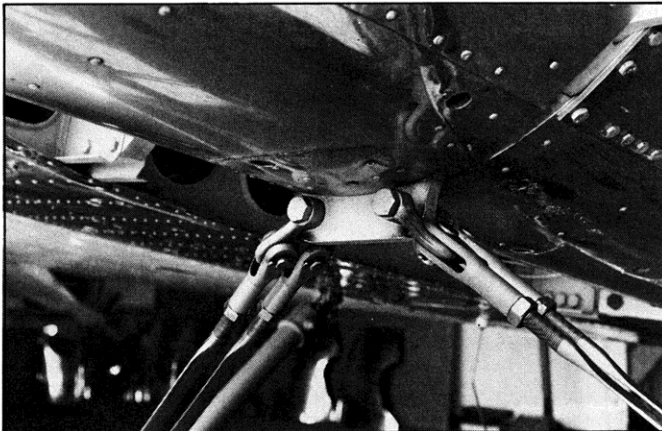
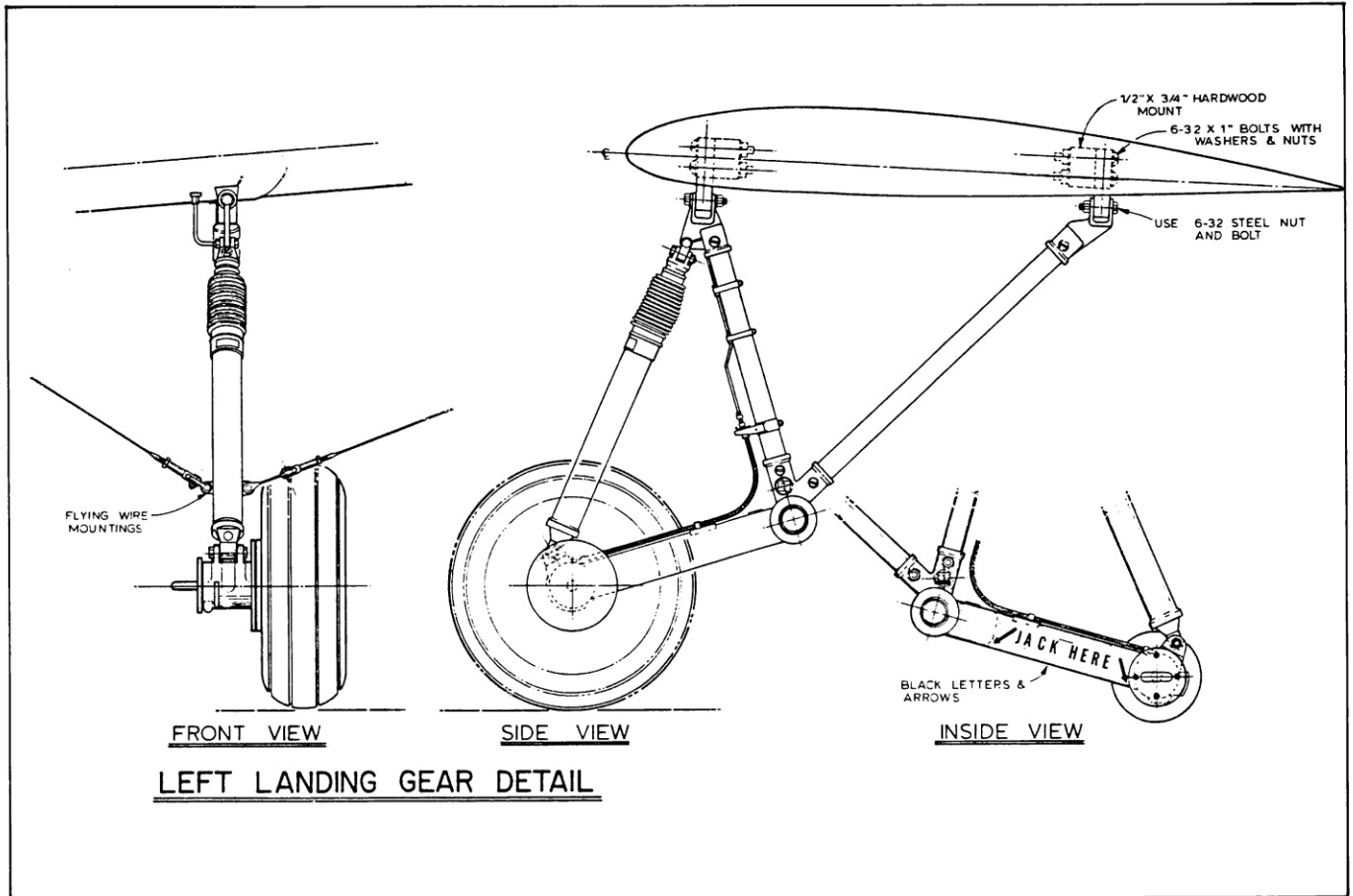
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The concept of military aviation training, employing distinct phases

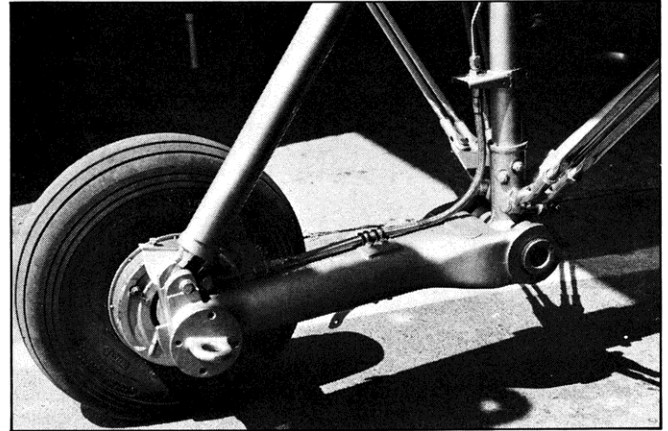


Chuck and Gloria Fuller, with their Ryan, are a familiar sight at many west coast meets. Gloria is Chuck's caller . . . she calls him to empty the garbage, go to the store, etc.





The landing gear bracing wire attachment point under the fuselage.



Details of the landing gear struts which provide such a good ride on landing and taxiing.

specified as Primary, Basic and Advanced Training started during World War II. Because almost all of the *combat* aircraft were taildraggers, it was only natural that the *training* aircraft should be geared to this type of plane, and some of the best pilots ever trained came out of this era. For example, a pilot who successfully completed either Army, or Navy flight training could step into any civilian aircraft ever made, and be able to.

When it became evident that a concentrated effort would be needed to fly it very well, as soon as he had acquainted himself with the operating parameters and the cockpit layout. On

the other hand, very few *civilian* pilots could step into a Stearman, Vultee or North American training aircraft, and even hope to survive, without many hours of re-education. . . in fact, those pilots who were trained in Cessna 150s almost had to start all over again.

Because of the progression of the aviation industry to jets, and to the more modern tricycle gear aircraft, the military also switched over to this type, with the introduction of the Beechcraft Mentor T-34, and the North American T-28. . . a step from which flight training would never quite recover.

In order to provide the pilots needed to fly the aircraft which were being pro-

duced in factories all over the country, around the clock; an intensive recruitment program began. While potential pilots were being rounded up, other agencies were out in the field, purchasing any and all aircraft which might possibly serve as a primary trainer. Previously, the military had used biplanes. . . made of wood, steel tubing and fabric covering, which made excellent trainers, but they were labor-intensive, and the start up time was excessive.

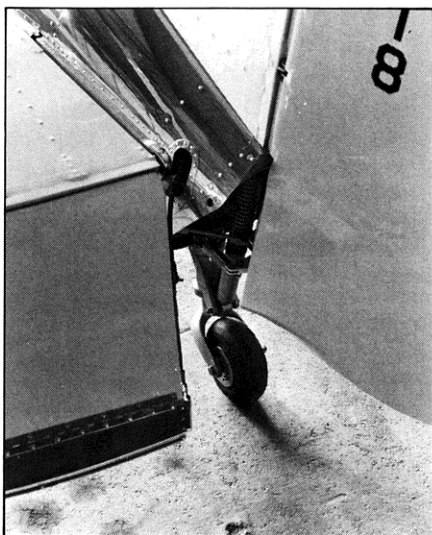
After some investigation, field crews came up with the Ryan ST-A for possible use as a primary trainer, so the complete output of the Ryan Factory in San

Diego was purchased for the Army Air Force. Unfortunately, the little Ryans were powered with Menasco engines which had only been produced in limited numbers, and whose reliability had never been proven. In spite of this, because of the desperate need for training aircraft at this time, the purchasing agent decided that they would go ahead and buy the remaining PT-20s (the *military* designation for the ST-A), with the provision that the aircraft would be re-designed for military training.

The Ryan was the first of many aircraft to be designed by a committee. Starting with a sweet flying aircraft, one in which Tex Rankin had won the World Aerobatic Championship in 1936, the committee managed to change its basic, safe plan to one of the most dangerous, underpowered training aircraft ever built, The Ryan PT-22.

Being military men, they made all the parts much stronger, and consequently heavier, than necessary. They powered the aircraft with a Kinner R-56 engine of 160HP, swinging a big wooden club of a prop at 1850 RPM. In 1951, I bought one of these Ryan PT-22s for \$450, and I can still hear the instructor, as he checked me out in it, telling me to be *very careful* because, as he said, "If you don't handle this little honey just right, it could just go right over the top in a second."

If I recall correctly, the speed envelope on the PT-22 was around

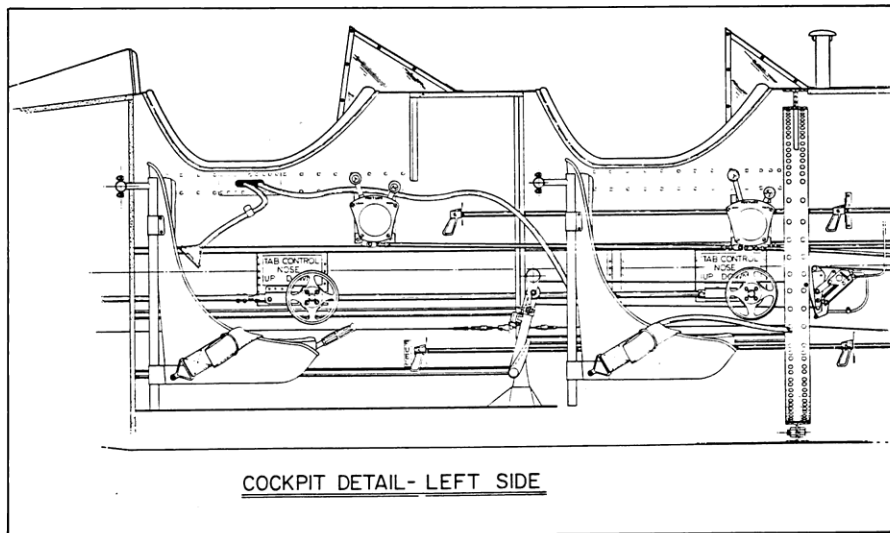


Rear of fuselage, with stinger removed.

15mph; . . . from a top of 90 to a "be careful" 75 (cruise speed to stall speed).

It was in this aircraft, that I learned some valuable lessons . . . many of which have stayed with me all these years.

On one particularly nice day, I had taken off from Atwood Airport in Northampton, Massachusetts, to go play in my airplane, the very first one I had ever owned. After take-off, I



slowly climbed to about 5,000 feet, dropped the nose, applied full power to the John-Deere-tractor-sounding Kinner, then eased the nose up into the start of a loop. Well, I had almost reached the top of the loop, when . . . I ran out of airspeed. No problem, I thought, I have plenty of altitude . . . when that Ryan suddenly dropped, inverted, like the proverbial rock. By the time I was able to right the airplane and start my pull-out, I was traveling well above red-line, so I gently eased the stick back to keep the Gs in a manageable range (translation: Keep the wings on). So far so good . . . then it happened . . . A wide strip of fabric peeled off the wing and flopped over the aileron. This not only made the Ryan very unhappy, but also very difficult to control. Well, I was out over farmlands, and quickly deciding to vacate the premises (without the customary 30-days' notice), I started to climb out on the wing, when I realized that the chute I was using for a cushion was war surplus, and of questionable heritage . . . God only knew when it had been last inspected or packed. So I climbed back into the airplane and, under full power, literally flew the plane onto the ground. That Ryan's fabulous landing gear saved my neck and the airplane too.

Today, many Ryan PT-22s can be seen at warbird airshows and other fly-ins, and they're the pride and joy of their owner/pilots. In military colors, a Ryan PT-22 is, by far, the prettiest of the primary trainers and, when it's modeled with chrome or other type of highly polished fuselage, it can be a prize winner. And that shock-absorbing landing gear works as well on heavy models as it does on the full-size aircraft. In addition, it seems that all the shortcomings of the full-scale aircraft disappear in the model. The usual power-to-weight advantage enjoyed by a model really shows up in a Ryan PT-22, and the extra horsepower and

lighter wing-loading combine to make a model which is pretty to look at, fun to fly, *and* impressive to the judges.

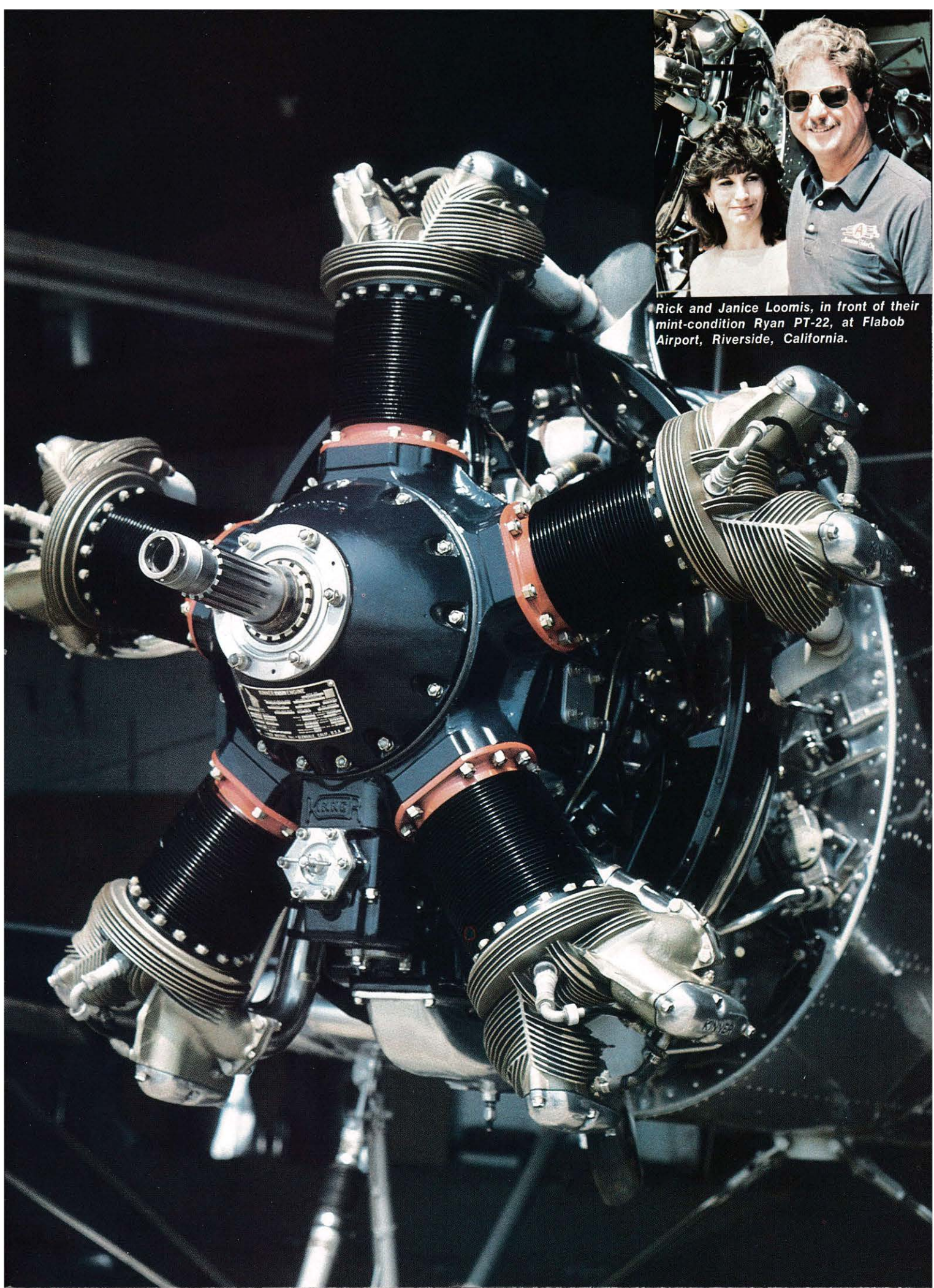
When you add the swept back wings, the big two-bladed wooden prop with its large spinner and the five cylinders sticking out, (and they even had flaps you can put in) . . . you can see why you should consider building the Ryan for your next scale model.

On the West Coast, three names are synonymous with Ryan PT-22s: Chuck Fuller, Buzz Watson, and Bob Sweitzer. Chuck flies a scratch-built, 1/4 scale PT-22; Buzz flew a 1/5-scale Ryan which, I believe, is no longer with us (a mid-air, someone said); and Sweitzer has just released a great set of plans, partial kits and full kits for one of my favorite planes of all times . . . the Ryan PT-22.

While filming the cover shots and the photos of the Great Lakes and the Extra 230 at Flabob Airport, I happened across a particularly beautiful Ryan belonging to Rick and Janice Loomis, of Rubidoux, California. Rick had just stripped the Ryan for its annual inspection, so this was the ideal time to photograph the bird with all the covers off . . . you could see the attach points and all the other details which are usually hidden from view. Rick and Janice had spent many long hours polishing their pride and joy, and the Kinner had just been delivered from the overhaul shop in Santa Paula. Their Ryan is finished in civilian colors of polished aluminum, with white and blue pin striping.

So, fellow modelers out there, by using Swietzer plans, components . . . or the whole kit, and then carefully referring to the detail photos, you should be able to build what could prove to be an award-winning Ryan PT-22.

Next month . . . the Fairchild PT-19! ●



Rick and Janice Loomis, in front of their mint-condition Ryan PT-22, at Flabob Airport, Riverside, California.