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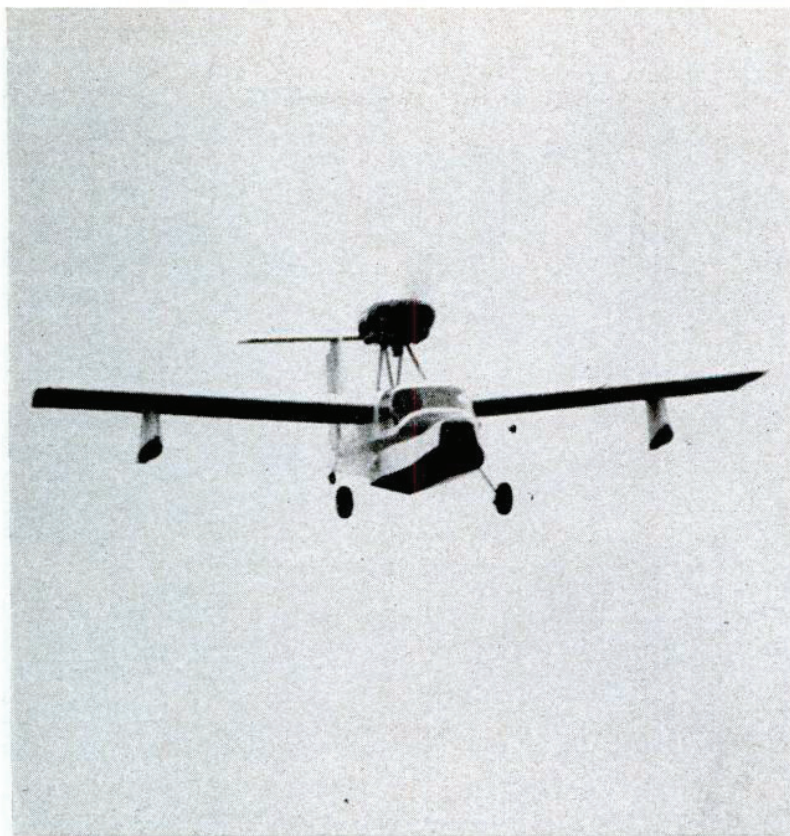


Cleveland: Aug.30 Reno: Sept.20 Frederick Winners



Opposite: Pittsboro, North Carolina





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### **First Flight:**

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# Thurston Teal

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Ducklings are ugly, and amphibians aren't the loveliest creatures in the air either. Both, however, make up for their homeliness with some very special qualities: They can walk, fly and swim/by James Gilbert

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PONDER, FOR A MOMENT, the small amphibian as an art form. Desirable, for a start. Immensely desirable, for to the orthodox joys of flight it adds those incomparable delights of simply messing about in boats: the slap-slap of ripples against the hull, the joy of mastering wind and water in a perfect docking, the glorious, resilient smoothness of water as a runway. And, of course, in an amphibian you are freed from allegiance to airports; any lake or river is an airport, you can take your pick of a trillion airports anywhere. And still go back and flounder about on the concrete if you so desire. So it's hardly surprising that the skies are filled with a million small amphibians.

Well, of course, they aren't. Because there is another side of the coin. An amphibian must have retractable gear,

which puts the cost up and the useful load down. To withstand the hammering of rough-water operations, the hull must be immensely strong, which puts the cost up and the load down. There have to be balance floats, which put the cost up and the load down. The propeller must be mounted as high as possible to get it out of the spray that engulfs any water airplane at the start of its takeoff run, which means either mounting the whole engine up on stilts or else a helicopter-complicated system of extension drive shafts, and either way (you've guessed it), up goes the cost and down comes the useful load. And with floats and powerplant stuck out in the breeze—not to mention the angular hull profile necessary for good water handling—you ain't going anywhere very fast. What do we have? An exceed-

ingly expensive airplane with a rotten performance.

Nor is that an end to the problems of designing the small amphibian. We all know there are only two sorts of pilot: those who have landed gear up and those who are going to. But consider the poor amphibian pilot; on land he has to have the gear down, but to land on water he must have it up. Woe betide him if he gets confused just once and lands on the water with the gear down, for an amphib with the gear down noses straight over just as soon as the wheels touch the water. Can you imagine what that does to amphibian insurance premiums?

And, of course, none of those trillion lakes have tiedown or even gas, unless you can find a marina. Most of them do





## Thurston Teal

have sunken, crocodilelike logs floating submerged just beneath the surface, greedily awaiting the chance to gouge open your hull. And even if you do manage to taxi the thing to the beach before it sinks, what value has a wrecked amphibian beside a lake miles from civilization?

In consequence, the number of small amphibians in production anywhere in the world today can, as the old cliché runs, be counted on the fingers of one hand. There's the Lake, which has come closest to success; the Italian Riviera; the Twin Bee, a hopeful conversion of the old Republic Seabee; Volmer Jensen's splendid homebuilder's delight called the Sportsman; and some ambitious conversions of the old Grumman twins by enterprising McKinnon Enterprises over there in Oregon. That, apart from some low-key military experiments at high cost, is the sorrowful state of the amphibian art today.

Yet one can't help having the feeling that it need not be so. Amphibians are such a delight to fly. And we all know that problems exist only in order that they may be overcome. The problems facing the potential designer of an amphibian are formidable, but by no means impossible in theory to overcome. If there is one man who has devoted his life to fighting this hydra while at the same time earning a living, it is Dave Thurston. Thurston is a native of New York with 28 years of mixed experience in the aircraft industry, including 14 years labor

in aircraft design with Grumman. While at Grumman, he designed the G-63 Kitten, a sort of fat Globe Swift that was constructed and flown in prototype form at the end of the war. It was to have been Grumman's entry into the colossal market for general aviation airplanes that everyone was then forecasting, but somehow Grumman, wiser than most, decided maybe that colossal market didn't exist, and they canned it. Undismayed, Thurston went on to the G-12 Kitten II, with twin fins and nosewheel gear—a sort of fat Ercoupe, if you can imagine that. Grumman canned the Kitten II. Meanwhile, Thurston had come up with the G-65 Tadpole, a very pretty amphibian not at all unlike today's Lake. When Grumman canned that, Thurston finally took the hint and left to start the Colonial Aircraft Corporation, which designed and built the Colonial Skimmer, which explains why the Tadpole, the Skimmer and the Lake are all rather similar: same chap designed them all.

The Lake is still being built, in small quantities. Powered by a 180 Lycoming, it carries a useful load of 845 pounds, cruises at 114 knots and costs a whopping \$27,000 basic. The Lake factory is in Sanford, Maine, and Dave Thurston is no longer part of it. You'll find him on the other side of Sanford Airport, for he is now the president of the Thurston Aircraft Corporation, formed to manufacture the Thurston Teal, which is, as you must by now have guessed, a light amphibian. If the Lake is a tiny amphibian regard-

less of expense, the Teal is a tiny amphibian on the cheap side. A 150-hp two-seater, it is intended to be built and sold for a mere \$15,000, or in a pure seaplane form for no more than \$12,000.

Recently, the day came for the Teal's public unveiling in prototype form. And since very little of any real or lasting importance ever happens in Maine without a clambake and lobsters, the fledgling Thurston Aircraft Corporation set up a combined First Flight and Clambake with Lobsters, and invited FLYING to it. Suddenly deciding that this was one of those deeply important stories that could only properly be researched in the field (we are partial to lobsters), we set off.

Arriving, we begged a ride across the field to the premises of the Thurston Aircraft Corporation, where the lobsters were sizzling under their soggy blanket of seaweed. Nearby, the prototype Teal, looking every inch a prototype in its bare metal finish, awaited the master's word to start up. A small crowd surrounded her: silver-haired Dave Thurston himself, his employees, well-wishers and various backers—comfortably plump Wall-Street types who had driven up in their comfortable Cadillacs and who were even now casting longing glances in the general direction of the lobsters. The word was given, the 150 Lycoming clattered into life and the Teal began to taxi to the nearby runway.

Do you know that vague feeling of foreboding you sometimes get? An aura of despair, a formless dread that some-



thing unpleasant is about to happen? We had just such a feeling then. We somehow felt we wanted to tell Dave Thurston: "This public first flight is mere foolishness, put it off till the plane is more developed." But the Teal, in the hands of Winfield Young, a test pilot with 20,000 hours experience, 2,500 of them water-based, was already airborne. And strongly the new bird flew, too; to and fro she went, then quickly came in for a landing. As she touched down, we breathed a real sigh of relief. Feelings of nameless foreboding, indeed!

Behind the saplings, on the runway, the Teal swung viciously. Came the squeal of a locked wheel dragging on the concrete. The swing stopped, then began the other way. The Teal left the runway, fell over on its side, and with a sound worse than the clatter of ten thousand dustbins, dug a wing tip into the turf and spun round. Before the wreck had come to rest, everybody was already running, trampling the daisies and scattering the swallowtail butterflies. Strong men flinched and pretty girls openly sobbed.

Actually, it wasn't half as bad as it looked. Young was unhurt; the Teal had collapsed one gear leg (a torque tube had failed), graunched the bottom of the hull and torn off a wing-tip float that had somewhat mangled the wing skinning. A silently despondent inspection of the damage followed. Was it our imagination, or did we see one of the Wall Street bankers step forward to Thurston, a blank check fluttering from his fingers?

(continued)



The Teal's first public flight was also its last for awhile. During rollout in a slight quartering tailwind, one of the pilot's feet slipped off the heel brake, and the sound of a ground loop was heard throughout the land. Damage: wounded pride, disappointed backers, a collapsed gear leg and a torn wing-tip float.



# Thurston Teal

With only \$125 worth of repairs after that first flight, the Teal will fly again. Thurston plans to produce 100 models a year, with a slight modification—twe brakes.



But despair feeds on empty stomachs, and the clambake, smoking and spluttering, begged attention. Soon everybody had a glass in one hand and a loaded tray in the other. The Wall-Street types, chubbily resilient, made no bones about tucking their napkins into their collars and letting the butter run stickily down their chins, and we must confess we managed no less than three whole lobsters ourself.

Gorged, we sought out Winfield Young and asked what happened. It seems there had been a slight quartering tailwind as he touched down. The Teal was cursed with a free-swivelling tailwheel and heel brakes of the same dreadful type familiar to every man who ever flew a Piper Cub, and Young's foot had simply slipped off the heel pedal. We sought out Dave Thurston and asked him, what next? "We're going to toe brakes, which we should have done in the first place," he allowed. "There's no more than about \$125 worth of damage."

We wandered back to where the Teal still lay on its side. Its design clearly had that simplicity that bespeaks the

quest for low manufactured cost. Straight, untapered wings and slab-sided fuselage. A slab T-tail atop the fin. A shoulder-wing layout, like the Lake. Sail-shaped balance floats very like the Lake's. The Teal has no hydraulics; gear retraction is manual, as in the Mooney, and there are no flaps at all. Conventional gear carries advantages other than those of purely low manufactured cost: Beaching the airplane on sand is easier, and the airplane is a little easier to maneuver on a seaplane ramp.

Dave Thurston told us that he expects FAA certification to be obtained by the end of September or early October. "We designed the airplane for utility category certification," he said. "We will probably request certification in the normal category later, which will give us 10 percent more useful load. The first production airplane should be out by February, we're doing some tooling now." Production rate? "We are planning two a month at first, rising to five a month by next July. A hundred a year is our target." It may not fill the skies with a million small amphibians, but it's a start. †

## Thurston Teal

### Manufacturers' specifications:

Basic price: \$15,000 (amphibian)  
\$12,000 (seaplane)

Engine	150-hp Lycoming
Propeller	Tractor, fixed pitch
Wing span	31.9 ft.
Length	23.6 ft.
Height	8.9 ft.
Wing area	157 sq. ft.
Wing loading	10.8 lb./sq. ft.
Passenger & crew	2
Empty weight	1,125 lbs.
Useful load (amphibian)	575 lbs.
Useful load (seaplane)	660 lbs.
Gross weight	1,700 lbs.
Power loading	11.3 lbs./h.p.
Fuel capacity	25 gals.
Oil capacity	2 gals.

### Performance

Takeoff distance (land)	650 ft.
Takeoff distance (water)	1,050 ft.
Rate of climb	1,050 fpm
Maximum speed	102 kts.
Cruise speed (75%)	100 kts.
Range	330 nm
Stall speed	49 kts.