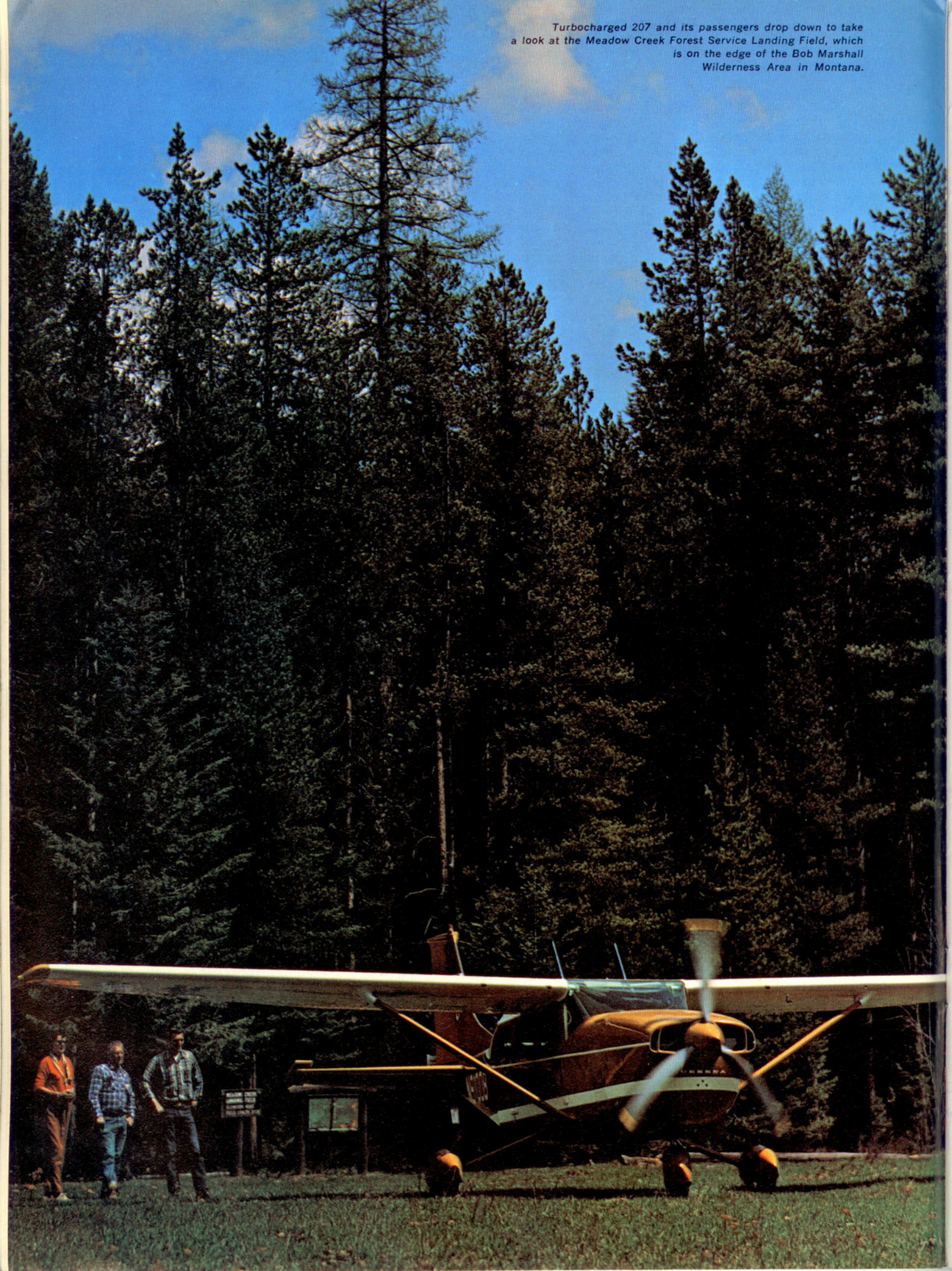


Turbocharged 207 and its passengers drop down to take a look at the Meadow Creek Forest Service Landing Field, which is on the edge of the Bob Marshall Wilderness Area in Montana.



■ Did you ever have the feeling that someone, Big Brother or other, was following you in flight? It's a natural reaction in Cessna's "Big 7," the turbocharged 207T. When they stretched this model, they weren't kidding. It's over 14 feet from the false firewall to the back of the cabin, so learn sign language or plan on passing notes to anyone in that aft jump seat. Overall length is 31 feet 8 inches, 24 inches longer than the 337 Skymaster.

There's no getting around it: the 207T is a big airplane with a gross weight of 3,800 pounds. Addition of the 9½-cubic-foot, 120-pound forward baggage compartment has not only made C/G loading easier but has added a buffer zone for engine noise and vibration.

Ours was more than a passing acquaintance with N91008. We had the opportunity to fly this new bird for nearly 22 hours in a week, covering a large area of the West between Los Angeles and the Canadian border. We went into some short fields, some high, some Forest Service areas. We flew over the Bitterroot Range to see the "Chinese Wall" and then topped the lonely Cascades between Northern Montana, Idaho, and Washington. We even made a "wet" IFR departure. Our week with the 207T was a rewarding sample of comfortable cross-country travel in a big airplane designed specifically to make money for fixed-base operators.

Since the 207 went into production, 25% of the units have carried the factory-equipped AiResearch turbocharger. This high-altitude package will carry full sea-level takeoff manifold pressure of 35 inches to 17,000 feet, with a service ceiling of 24,200 to 26,500 feet, depending upon the load aboard. That's why a 76-cubic-foot, high-pressure (1,800 p.s.i.) oxygen bottle is located aft of the baggage compartment as standard equipment on the turbocharged models. Seven oxygen outlets are built into the cabin and controlled by a handy shut-off valve in the overhead area between the pilots' seats.

While it isn't mandatory (yet), any pilot who plans to spend much time behind the controls of a high-flying turbocharged aircraft should attend a high-altitude indoctrination course, available from either the FAA or a number of military bases. If you're going to be tool-

ing around at "25 Angels," you'd better know all there is available about oxygen and the lack of it. At 25,000 feet, for example, the time of useful consciousness for an average, healthy adult is approximately three minutes.

Since oxygen is a built-in part of the turbo package, it's worth the space to remind all pilots and passengers that smoking and oxygen masks do not mix. Actually, any grease around the mouth—chapstick, lipstick or suntan lotion—can become a flash-fire hazard. So, have that good-looking gal who flies with you wipe off the lipstick before donning the tolerably comfortable, rebreather-type oxygen mask.

The 76-cubic-foot bottle will supply the pilot for only 8½ hours at 20,000 feet. Add three passengers and the supply will last 2 hours and 50 minutes. With optional long-range fuel tanks of 84 gallons (77 usable), the 75% no-reserve range at 20,000 feet is 4.7 hours.

So, it's fairly easy to see that the FBO who uses a 207T to advantage will probably be flying into high-altitude fields, probably on a fairly short haul, and will get his best efficiency without burdening his big beast with full fuel tanks. Standard tanks are 29 (usable) gallons each, and the fuel selector located at the base of the center panel is either left, right or off. To switch from one tank to the other, you must pass the selector across the "off" position, but in our extended flying with N91008, we never had so much as a sputter.

The turbocharger and associated oxygen equipment weighs 110 pounds. If the aircraft is to be used strictly for sea-level operation, this cuts into your takeoff gross weight so that the 207T will not carry its own weight, as will the unblown 207. However, just as soon as you begin to add altitude and/or heat, the turbocharger more than pays its own way.

It's one reporter's opinion that you'll see a steady increase in the acceptance of turbochargers. A resulting higher volume of production hopefully should bring the cost down. As it is now, the "T" in the 207T costs the customer \$4,725. And, if he's flying into any high airports, going on long cross-country flights where favorable winds are available, it's worth every penny of cost and weight.

The factory demonstrator was a "full house" model, complete with dual radios, ADF, autopilot and all possible accessories. By adding the weight of the "goodies" to that of the basic airframe, we came out with a rather heavy bird that weighed 2,225 pounds before fuel, baggage and people. That's 125 pounds more than the sample airplane that was used for 207T loading problems. However, there were just three of us in the cavernous cabin, some camera gear, a bit of baggage and full 77-gallon (usable) long-range tanks. As near as we could figure it, we were 338 pounds under gross weight on takeoff.

The "we" on this trip included my wife, Ruthie, and Jim Smith, Union Oil's supervisor of airports and special accounts. Most of Jim's 1,500 hours in the air have been in Cessnas. He was formerly single-engine sales representative for AirFlite, the Southern California factory distributor.

It was a dreary, drizzly day when we picked up N91008 at AirFlite in Long Beach, Calif. A check with the weather-or-not man disclosed that we could go IFR to on-top (which I don't like to do on a first hop in an airplane that's new to me) or circle nearly halfway down to San Diego to work our way up through a broken overcast to on-top. This roundabout route resulted in a no-perspiration 2 hour and 40 minute first flight to Tonopah, Nev.

We used recommended power settings of 27½ inches and 2,450 r.p.m. at 11,500 feet and burned 16 g.p.h. Our outside air temperature was plus 7° and our airspeed trued at 160 m.p.h. This is just about on the money for Cessna's Owner's Manual.

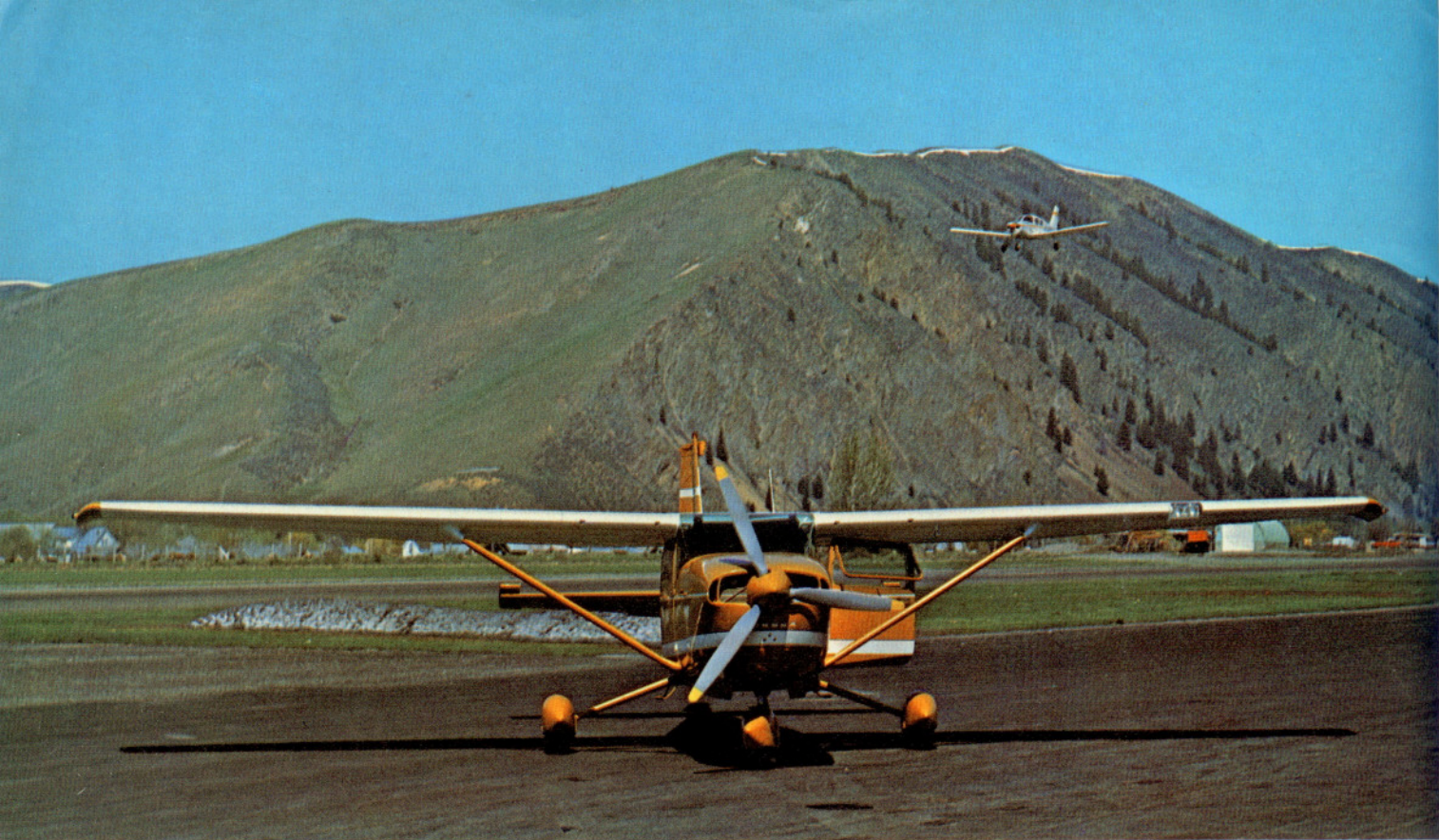
There's a handy three-stop flap selector (10-20-30°) that requires moving the flap handle out to the right to bypass each stop. Thus you can reach over and obtain the flaps you want without taking your eyes away from more pressing items.

Ten degrees of flaps are recommended for maximum performance takeoffs and will shorten the ground roll by about 10%. You soon get the feeling that you're in a big airplane; the takeoff ground roll at sea level under those rare standard conditions is 1,100 feet, the wing loading is 21.7, and the power loading 12.7. Actually, you can land the

A Week With The Turbocharged 207

High-flying Cessna Skywagon meets all demanded of it in flights over rugged terrain of western United States. Its pilot is impressed with interior capacity and its flight characteristics at higher altitudes. It has service ceiling of 24,200 to 26,500 feet

by DON DOWNIE / AOPA 188441



A visit is paid by the 207 to Friedman Memorial Airport at Hailey, Ida., which is near Sun Valley.

fully loaded (3,800 pounds) 207 in 765 feet, so you'll be able to get into many short strips that you'll not fly out of without off-loading people, baggage and perhaps fuel. Take 1,000 pounds of weight out and you cut the takeoff distance in half.

We topped off with Rick and Angie Blakemore at Tonopah—she still handles an efficient gas hose—and headed north with approaching sunset the only factor governing our overnight stop. Of course the 207 is fully equipped for both night and IFR flying, as we found out later, but it isn't the most prudent procedure, in this reporter's logbooks, to go deliberately out at night on your second hop with a ship that's new to you.

The normal turbocharged power reduction after takeoff is to 28 inches and 2,500 r.p.m. Since it's "SOP" to reduce the throttle before coming back on the prop, we unscrewed the vernier throttle to about 26 inches and then came back on the prop control to 2,500 r.p.m., which would, under normal conditions, boost the manifold pressure back to 28 inches.

It ain't necessarily so! There's an automatic waste-gate on this turbo installation that "dumps overboard" any manifold pressure over the 35-inch redline. If this waste-gate remains open, the turbocharged engine will react just as a normally aspirated engine when r.p.m. is varied. However, under conditions when the automatic waste-gate remains fully closed—as on a hot, dry takeoff from Tonopah's 5,424-foot elevation, the 207T Owner's Manual explains it this way: "If turbine speed increases, manifold pressure increases; if turbine speed decreases, the manifold pressure

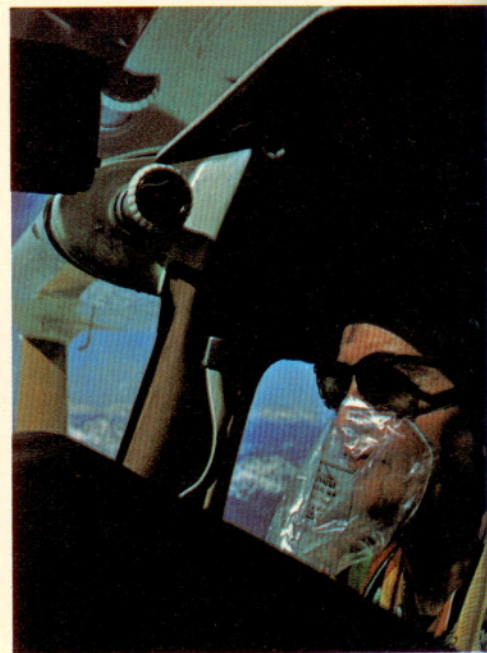
decreases. Since the compression ratio approaches three to one at high altitude, any change in exhaust flow to the turbine or ram induction air pressure will be magnified proportionally by the compression ratio and the change in flow through the exhaust system."

Confused? That's what "the book says."

Here's how it worked out for us—and I've flown turbocharged models on nearly a dozen previous flights, so it wasn't in not knowing the basic principles that the problems began. I just forgot them and went by the big numbers in the book.

1. I came back on the throttle at 28 inches. 2. I came back on the r.p.m. from redline of 2,700 and 30 g.p.h. to 2,500 r.p.m. and 20 g.p.h. Wing flaps came from 10° to zero. Things went along fine for about 10 seconds, then N91008 slowly began to settle. With the fuel flow down to about 16 g.p.h., my first thought was a ruptured or clogged fuel line, a pump, or a malfunction in the injection system line, so I lowered the nose and started a gingerly turn back toward the broad, beckoning runways at Tonopah. I could feel the big ship sagging. It wasn't comfortable.

Then a quick scan of the full engine panel on the right side of the plane showed that I'd been trapped into the "bootstrapping effect" of the turbo-charger and had come back too far, too fast on my power reductions. A forceful reapplication of prop and throttle put us back into a steady climb. On my second try, I made the power reductions in three easy stages and stabilized at the



The author's wife, Ruthie, demonstrates an oxygen mask used when N91008 reached the higher altitudes. The pilot and passengers of the 207T went to the oxygen bottle several times during the week with the plane in the Northwest.

required 28 inches and 2,500 r.p.m.

We followed Highway 93 past the corner of Elko and spent an interesting evening at an oasis in the high desert called Jackpot, Nev.

At the time of our visit, Jackpot's airport was oiled at both ends with hard-packed dirt in the center. By now it should all be oiled. N91008 had an optional three-blade propeller that has



Mrs. Angie Blakemore fuels the 207T at the Tonopah, Nev., Airport.

Color photos by the author

one inch more ground clearance than the lighter, two-blade fan. However, we planned a maximum-effort takeoff the next morning to keep all the paint on the prop tips.

Elevation was 5,217, and the temperature had already come up to 80°F. Takeoff to the southeast is slightly downhill. I trimmed in full right rudder, dropped 10° of flaps and applied full throttle on the oiled section of the airport. Ruthie, Jim Smith and I estimated this oiled section to be very little over 90 feet long. As the brakes came off, we accelerated rapidly. The airspeed needle was passing the 60 m.p.h. mark (that's a calibrated 72 m.p.h. with 10° of flap according to "the book") so I came back on the wheel. The stall-warner blared, but the big "T-bird" struggled into the air in much less distance than that indicated by factory specifications. True, we were flying in ground effect for the next couple of hundred feet, with the downhill strip slowly slipping away, but we were in the air.

"The book" says that 71 m.p.h. is minimum at sea level, but this big bird will stay in the air under ground effect (less than half the span of the wing above the ground) at slower speeds. We'd flown 2:20 from Tonopah and burned out some 240 pounds of fuel, so with our less-than-gross weight, this kind of performance could be expected.

Under these conditions, it takes a heavy right foot to keep the nose out in front, even with full trim, because you have 300 turbocharged horses working for you at 2,700 r.p.m. (five-minute

takeoff rating) and you can expect a good chunk of torque. It's there. This "max performance" takeoff was most impressive.

We continued northward to photograph and research a travel feature in the colorful Kalispell, Mont., area and then headed toward the Pacific Ocean. We climbed to 14,500 feet approaching the Cascades and sucked a little oxygen. With 2,500 r.p.m., 28 inches and 18 g.p.h. indicated, we trued out at 170 m.p.h.

There's only one possible place to land as you approach the glacier of the Cascades from the east. The U.S. Forest Service has a 2,700-foot emergency strip along the Stehekin River. It looked mighty good as we crossed the blue-white grandeur of the Cascades. Here's rugged, inspiring country that helps reinforce a pilot's belief in something bigger than people.

Part of a day was spent at Bayview, north of Seattle, watching a search and rescue exercise performed by the state of Washington. The beacons worked predictably well, but there was no air-carrier participation.

Then we headed down the Pacific Coast to return N91008 to its base in San Francisco. We should have flown further that afternoon, but elected to RON (remain overnight) at the neat, colorful field at Cottage Grove, Ore., where you can taxi almost up to the front of a famed eatery and motel called "The Village Green."

A telephone call to Eugene's FAA/FSS advised that there was local fog, tops 4,500 feet, with everything south of Medford in the clear. We discussed the weather possibilities with FBO Al

Pitcher. He cocked a knowledgeable eye out the window, advised that the ceiling was rising and that we "might get through underneath all the way. The only really tight spot is Sexton Mountain Pass just north of Grants Pass."

We headed south under a rising cloud deck, passed Roseburg with plenty of "head room" and ran out of adequate ceiling just north of Sexton Mountain. Then came that famed 180° to join the cowards' club back at Roseburg. A near-quorum of local pilots concurred that this was the type of weather that "just might sit in here all day," so out came the IFR charts and we doublechecked the simple departure procedure on course south over the Roseburg VOR. Tops were reported below 5,000 feet, and Medford, 60 miles south, was wide open. We filed IFR to on-top.

The "Big 7" has plenty of speed to mix it with the endless stream of jets that funnel in and out of SFO International. We held east of the field for perhaps three minutes, and the tower squeezed us in between 727s. Our request to "land long" was approved. This keeps you above the possible wake turbulence of the heavy transport ahead and cuts down on taxi time to Butler Aviation's new hangar complex.

It would have been far simpler to fly N91008 back to Long Beach than to join the queues at the airline side of the terminal, but her home base was SFO. All good flights must come to an end, and the new 207T proved to be everything she's supposed to be—with something to spare. She'll certainly get off the ground at altitude in a shorter set of "numbers" than you'll find in the book, and that's a rarity these days. □