Pilot Flight Check:

The Bellanca Viking

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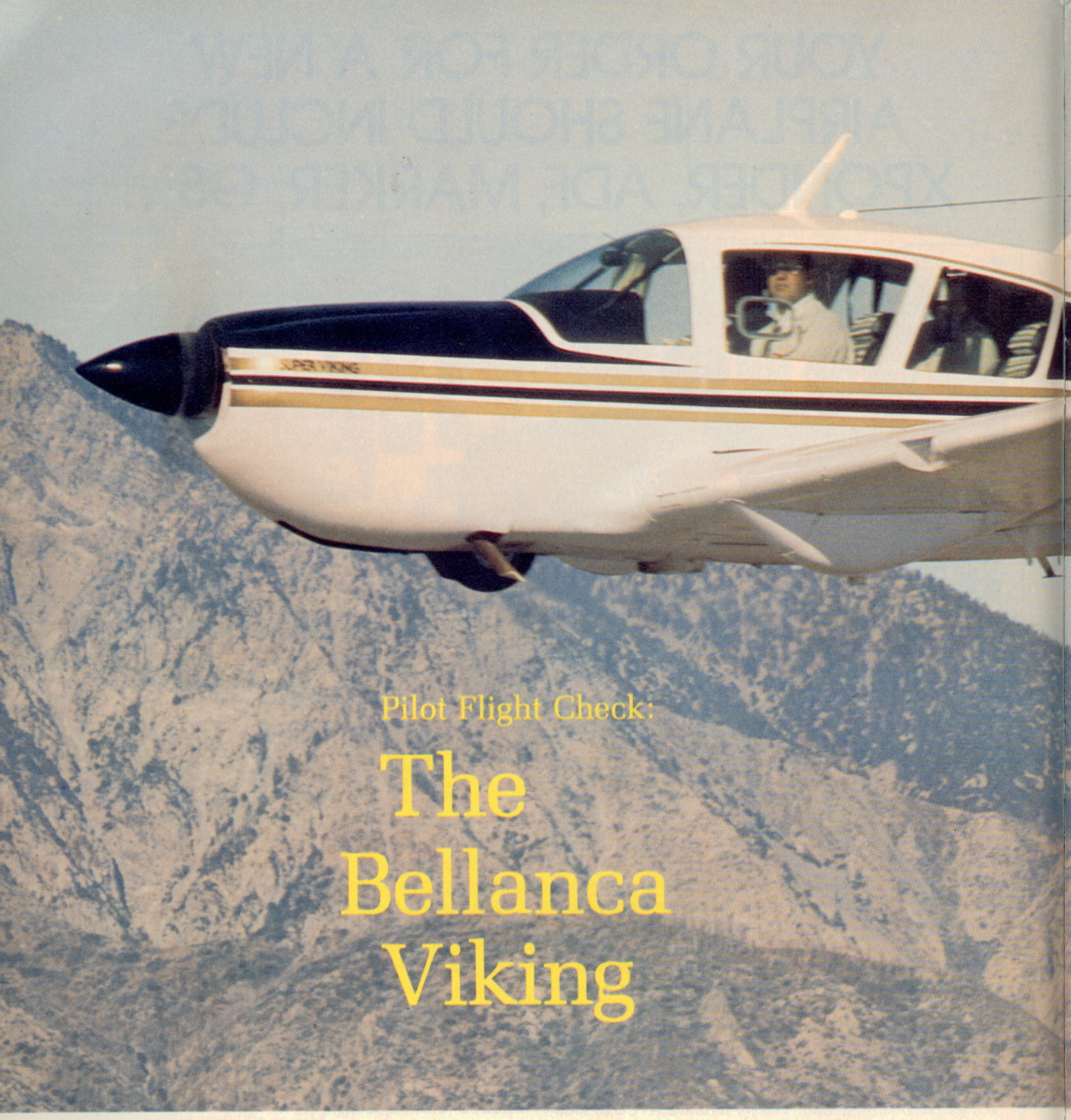
By DON



Pilot Flight Check:

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■■ It had been a frustrating, awe-inspiring, turbulent and educational three hours, but now the backbone of the Rockies was behind us. We pointed the nose of Bellanca's new Viking, N4187B, toward the welcoming runway at Bryce Canyon (Utah), touched down without incident, and rolled to the hangar at the sunset end of the field.

We were now one brief flight from our California home. During this West Coast delivery, we'd sampled all the fine points and subtleties of the Viking.

Earlier on this day, we'd taken off from Boulder, Colo., planning on a crystal-clear, sightseeing flight over the Rockies. Our flight plan was via Kremmling and Grand Junction where the enroute instrument minimums go to 13,000+ feet. The FSS reported 15-knot winds from the west, and we dutifully filed a "mountain watch" flight plan for insurance. After runup, we poured it to the 300-hp Continental and let our indicated airspeed climb above 105 mph so that the goof-proof gear would retract.

We head west to test the cross-country mettle of a high-performance single from the northland

By DON DOWNIE / AOPA 188441

As on any long ferry flight, things seldom work out as planned. Forecast winds were light, but a pilot, who came into the pilot's lounge at Boulder as we walked out, reported, "The wind is really kicking up on the lee side." We could see the first indication of lenticular clouds east of Pikes Peak, so we anticipated a bumpy trip. We wouldn't be wrong.

Swirling whitecaps were kicking up on the sheltered lakes on the eastern slopes of the Rockies, and the turbulence factor went from moderate to occasionally severe. However, the Viking seemed to feel right at home under these unstable conditions, and its superb rate-of-roll made staying right-side-up no great chore.

We cinched down on the lap belts and kept the Griswold-type (Sam Browne) half-shoulder harnesses in place as we probed the restless air. Our rate of climb ranged from something less than zero to 2,500 fpm. We circled away from the hills, climbed to almost 14,000 feet where we could see far to the west, but the plane was buffeted by the mountain-wave condition each time we headed west.

Finally, we paralleled the Rockies, heading south toward lower terrain. With all tanks filled (30 gallons usable of the 34 total in each wing and 15 in the aux), we had ample fuel to go as far south as Albuquerque before turning west.

We debated between landing at Canyonlands, just north of Moab, Utah, or

at the Grand Canyon. However, Bryce Canyon was right on course and high enough so that we'd need less of a climb-out to cruise altitude after topping off fuel tanks and stomachs.

The best way we know to find out about any new airplane is to get a good checkout with a factory pilot and then spend enough time in the plane to find out the subtleties for yourself. That's how we happened to be at Bryce Canyon with one of Bellanca's latest Vikings. Destination of this factory delivery—Los Angeles. List price of the Continental-powered Viking is $45,130, and our ship had $15,445 in accessories, which brought the out-of-the-hangar-door total to $60,575.

We've had a nodding acquaintance with the Viking over the years, but when Ed Lamb, the factory representative for the West Coast, wanted his new demonstrator ferried out, we jumped at the chance. First, Lamb gave us a 30-minute familiarization and checkride in N93525 at Long Beach, Calif.

We found out two things not quite expected from this sleek, high-performance aircraft. The lightly loaded Viking accelerated rapidly at sea level on a maximum-performance (23 degrees flap) takeoff. We were in the air in the 500 feet noted in the operations manual. I flicked the gear lever, located just to the left of the vernier throttle, into the "up" position and waited—and waited—for the little thump that confirms the gear is up. Three green lights show that the gear is down, an "unsafe" light tells you that the wheels are in transit, and no lights at all indicate gear up.

Like other modern retractables, the Viking has an automatic "Auto-Axion" system that will allow the gear to retract only when: (1) you're airborne and the "squat switches" are open; (2) the throttle is wide open; and (3) the airspeed is above 105 mph. Since the Viking will become airborne with flaps at just over 70-mph, you must wait for the speed to build up 30–35 mph so that the gear will retract.

Our checkride was out through the practice area over Marineland. We'd forgotten the great aileron response of the Bellancas—as good as anything we've yet flown. It's a temptation to make tight turns just to enjoy the solid ailerons. (In years past, we've been with Bobby Bishop when he did an aerobatic act with the Viking. It was most impressive.)

We went through a series of stalls and found everything as predicted. The ship paid off straight ahead at the book speed of 70 mph calibrated, with gear and flaps down. There was a mild buffet with little pitching and almost no wing drop. Visibility was good during "dirty configuration" stalls but not so for "clean" ones because of the high-nose angle needed to get a break. Stall recovery without substantial application of power takes prompt power application.

In a turn back toward the Long Beach Airport, we checked to see that the gear truly did extend with the selector handle in the "up" position. This takes place when the airspeed drops below 95–105 mph or the throttle is reduced below 12–14 inches of manifold pressure. It

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Specifications

Engine	Continental IO-520-K, 300 hp
Height	7 ft 4 in
Length	26 ft 3 in
Wingspan	34 ft 3 in
Wing area	161.5 sq ft
Gross weight	3,325 lb
Empty weight	2,217 lb
Useful load	1,108 lb
Baggage	186 lb
Fuel capacity:	
Standard	60 gal usable
Long range	75 gal usable
Oil capacity	12 qt

Performance

Takeoff distance (50-ft obstacle)	1,420 ft
Rate of climb	1,170 fpm
Service ceiling	17,000 ft
Cruise speed:	
75% power	187 mph
65% power	180 mph
Range (45-min reserve):	
75% power	600 mi (std fuel) 780 mi (opt fuel)
65% power	670 mi (std fuel) 915 mi (opt fuel)
Stall speed, gear and flaps down	70 mph
Landing distance (50-ft obstacle)	1,340 ft
Base price	$45,130

worked, but the loud horn warning continued even after the gear was down-and-locked, until the gear selector was moved into the "down" position.

Gear-down speed is 140 mph to pamper the gear doors. Half flaps are recommended at 120 mph with full flaps, 45 degrees, applied only on final approach. There is surprisingly little pitch change as the flaps go down. This can be adjusted simply with the electric-trim button on the left horn of the pilot's wheel.

Like any other high-performance aircraft, the Viking pays some penalty for going fast and far, by having a published full-flap stalling speed of 70 mph. And a warning in the operations manual notes, "with the throttle closed and the flaps full down, a high rate of descent develops very rapidly. If airspeed is allowed to decrease below 90 mph, level off is possible only with the application of power."

As Lamb put it during our checkout, "You land this ship just like a light twin. Keep a little power on to adjust your rate of sink until the wheels touch."

Our other minor surprise occurred after landing. I held the nose gear off as long as possible, and, once it was securely planted, I eased on the brakes to make the high-speed turnoff. Nose-gear steering on the Viking is relatively stiff and quick. Add weight from brake application, and the nose steering becomes quicker. This combination is nothing that a little practice won't cure, but the easier solution is to use minimum braking during roll-out. However, it is possible for a novice Viking pilot, no matter his previous experience, to overcontrol the rudders, and a routine checkride is well worth the effort.

Ed Lamb spelled the whole thing out succinctly, when he commented, "I don't take any demonstrator from the factory that doesn't have brakes on the right-rudder pedals."

So, some 2,000 miles and a couple of days later, we found that N4187B was not at the factory fly-away center at Holman Field in St. Paul, Minn. It was another 130 miles distant, in Alexandria, having an ADF installed. However, it just happened that Bellanca vice president Bob DePalma and J. M. Keating, another vice president of the company, were at Holman Field and ready to return to Alexandria. They had space to take us along.

What better way to see how the Viking is operated at very near its full gross weight of 3,325 pounds? We also found that the baggage compartment was amply large for our two suitcases, a camera case, and some plants, plus factory baggage and brochures. Both DePalma and Keating weighed over 200 pounds, but the Bellanca vice president explained that both mains were down half, so we were within limits.

Since the Viking is spawned in the far north, it's no surprise to find a ski tube, large enough for three sets of skis and poles, extending aft from the hat rack atop the baggage compartment.

We found out that the back seat was large enough (barely) for a six-foot, two-inch passenger but pleasantly comfortable. With an outside air temperature of 42°F, we lifted off in exactly 18 seconds after a ground roll of just under 900 feet. Our rate of climb was 1,085 fpm during the initial climb. Level at 3,500 feet and "24-square" (24 inches mp and 2,400 rpm), we were indicating almost 180 mph.

N9612E had the older type, high-back, front seats styled after a Chevrolet Vega. In new production models the front seats have been redesigned with lower backs so that rear-seat passengers can see the scenery and communicate more easily with those up front. The older, high-back seats present a problem for pilots who want to pick up charts or whatever from the back-seat area and make it virtually impossible to change seats in flight.

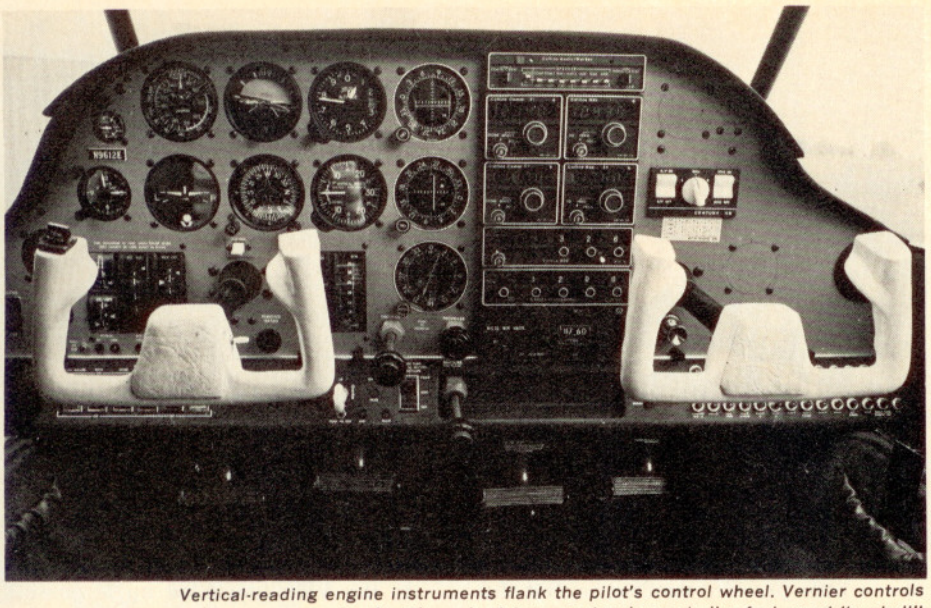
As the Viking gobbled up Minnesota scenery at three miles a minute, DePalma explained that there would be no more annual model changes as such. "We're not going to design obsolescence into our production line. When we see something that can be improved, we'll do it right then," he said, in the surprisingly quiet cabin. "You should not be able to tell the difference between a 1976 model and a 1977 or a 1978.

"We've been building the same basic airplane since 1966, and we're producing less than a dozen Vikings a month, so it isn't necessary for us to change a paint scheme or recontour the tail to have something to talk about. Whenever possible, any improvements we make will be available as a retrofit for earlier models. Our annual sales meetings will be 'business seminars.'"

Minor improvements in the 1976 model include, besides the lower front-seat backs, a cowling change around the nosewheels and nose-gear doors that is said to add perhaps two or three miles an hour. The inside of the fuselage has become one inch wider through the use of more efficient, thinner soundproofing. Fabric in the overhead has been recontoured to give a little more head room.

DePalma called for a landing advisory from the Alexandria FAA/FSS, circled the field and greased-on the heavily loaded Viking. He made the intersection turnoff with almost no braking and rolled to a stop near the factory door.

Anyone harboring the slightest idea of purchasing a Viking should plan a visit to Alexandria and take a tour through the wing factory located in an unprepossessing downtown building. We've been there twice and marveled at the crew of quiet old-timers who can give the history of every wing they've produced, what telephone poles it has cut down during a forced landing, and how long the repair job took. Now, of course, younger Minnesotans are learning the art of forming 1,800 pieces of Sitka spruce and mahogany plywood, resin, ball-bearing fittings, and welded fuel tanks into the smoothest wing we've yet seen. After the completed structure is immersed in a vat of termite-proof Glidden wood sealer, it is



Vertical-reading engine instruments flank the pilot's control wheel. Vernier controls for throttle and mixture, center, have similar feel, need "eyeball" before using. Full radio stack at right is Collins' new Micro Line.

covered with "lifetime" (FAA-designation) Dacron and painted.

Also unusual in today's marketplace is the old-fashioned steel tube, Dacron-covered fuselage, and tail feathers. Again, from its past history, this combination has a unique resistance to sudden stops. A small part of the price you pay for this steel-tube "safety cage" are two one-inch-diameter black metal tubes that go from the firewall to the top of the cabin aft of the windshield. At first, they're noticeable, but after a few hours in the air, you'll forget they exist.

The combination of wood, steel tube and Dacron is more resistant to both corrosion and hail damage than comparable metal structures. Bellanca's files contain letters from owners who have had mishaps and credit the structure of their aircraft for survival.

Viking owners have the option of either a normally aspirated Continental or Lycoming engine, or the turbocharged Lycoming. The Lycomings are listed at 300-hp continuous, while the Continentals are limited to 300-hp for five minutes and 285 thereafter. Expected time between overhaul (TBO) for the Continental engine is 1,500 hours and 1,800 for the Lycoming. Our delivery was behind a Continental that performed flawlessly and took a single quart of oil—that it may not have needed—in the 11½-hour ferry flight.

The Viking is something like a sports car in several respects. When you approach it, the cabin doesn't look too large. However, once you slide into the seats, there's ample room. We walked around "our" airplane, eased into the cockpit and pulled out the checklist. With the many unique features of the Bellanca, you wouldn't expect the instrument panel to be just like the others. It isn't. One example is a handy avionics master switch that simplifies setting up and shutting down the radios. Once you get the engine turning, you simply snap on this rocker switch to activate all the nav/com equipment used on your last flight.

All engine-status instruments are located on the lower left of the panel and are of a vertical read-out design. It's different and takes a little time to get used to, but the system is quite functional. The rpm and manifold-pressure gauges have the same vertical readout as do the fuel gauges. An indicator light comes on automatically for the fuel tank in use, and a simple left-right aux-off selector valve is directly between the front seats.

We taxied out, made an uneventful runup and headed west. It would be less than truthful to say that our first power reduction was uneventful. It isn't easy to do, but after nearly 9,000 hours of flight time these things will happen according to Murphy's Law and we goofed. After the "unsafe" gear light went out, we made our first reduction with the wrong vernier control. The Viking has three of these (throttle, prop and mixture), with the throttle on the left, the prop in the center and the mixture control directly below the prop. The mixture control feels like the throttle while the prop control has indentations on the knob. So if you don't look before you touch, it is possible to unwind the vernier control for the mixture until a sputtering powerplant attracts your attention. This is something you do no more than once since the learning curve is quite rapid.

After squirming around in the cockpit for a minute, we set up the proper power reductions of 25-square and leveled off at 3,500 feet. We saw a slight fuel venting from the left tank at the flap point just after leveling off and promptly changed tanks. Factory recommendations call for a change from the takeoff tank to the other main tank ten minutes after takeoff and at a safe altitude.

One hour, fifty minutes and 31 gallons of 100 octane later at 25 inches and 2,500 rpm (76% hp), we were tied down at Des Moines, Iowa. Two days later, we headed west in clear weather and made a fuel-and-stretch stop at Kearney, Neb.

Following our midafternoon departure, we elected to spend the night in Boulder, Colo., so that we could get a good view of the Rockies the next morning. We were not counting on the turbulence mentioned earlier, which was to come with the scenery.

The last leg of our trip, after the bumpy ride from Boulder to Bryce Canyon, was planned to check the cross-country performance of the Viking. We topped both main tanks and checked with the FSS on the field. Winds aloft were forecast at 12,000 feet from 260° and 9 knots in the local area, 050° at 16 mph over Las Vegas, and light and variable in the Los Angeles area. Density altitude on takeoff was reported as 9,200 feet (actual elevation, 7,586).

With the wheels in the wells and 140 mph on the clock, we made a wide turn, back over the airport, and latched on to Victor 8. Leveled off at 10,500 feet, we trimmed for an airspeed check. We were pulling 20½ inches mp (full throttle at this altitude) and 2,500 rpm, which gave 187 hp (65.6 percent of the 285-hp continuous allowable on the Continental). With an OAT of 2°C we trued out to 183 mph without the nose-gear-door covers that were added later. We were showing a fuel consumption of 14 gph.

It's almost 200 statute miles to Las Vegas and another 202 to Ontario, Calif. Add about five miles to get turned around after takeoff and another eight or nine for vectoring from Ontario's Stage III radar before a smoggy landing at Chino. Our over-the-ground distance was close to 414 miles. We took 33.8 gallons of 100 octane at the end of a 2-hour, 20-minute flight. Adjusting for the advantage of taking off from a high-altitude field, and we came out with a ground speed of 174 mph on 14.6 gph.

We burned 177.2 gallons in 11½ hours for an average of 15.4 gph, but much of this trip was at low altitudes with a slightly rich mixture to favor a new engine. All propeller settings were 2,500 rpm, and all flight times were taken with a watch, not the tach or the Hobbs meter.

That's the new Bellanca Viking, a good, solid airplane. □