

## **THE PIPER VAGABOND**

By LEIGHTON COLLINS

At the airports these days there's a small yellow airplane beginning to show up, around which everyone immediately gathers. It is interesting to note that their attitude towards it is very much as if someone had brought a chubby little baby out to the airport. The airplane is the 65-Lycoming, two-place, side-by-side Vagabond.

While possibly not to all, really small airplanes have an unusual appeal to a lot of us. Maybe the reason is that sort of unconsciously we are thinking that if they get small enough they'll just finally have to be cheap to buy and fly. There are, of course, other considerations as size goes down, but essentially smallness is a virtue as far as cost goes, and it is good to see that while horsepowers are generally going steadily up someone has brought out a new 65 h. p. airplane designed for the private owner.

On approaching the Vagabond for a going over your first reaction is that it is a trim, inviting looking little airplane. After you've done a 360° around it and get the door open, your question mark elongates into somewhat of an exclamation point. The cockpit must surely be the roomiest ever built into a two-place airplane. It is not a relative matter, it is a matter of inches: the seat is wide enough for two big people, with legroom to match.

Next you look at the sunken shelf behind the seat. It is marked for 40 lbs. of baggage, and has a tie-down arrangement for the baggage. There's plenty of room there too.

Your next observation is likely to be the lack of any dual controls at all on the right side. As a prospective private owner that doesn't slow you down particularly, though you might wonder if you could get them as extra equipment if you wanted them. The point does warrant some further discussion, however, which will be taken up farther on.

Getting in, you find the wide door simplifies that process considerably, and once behind the stick you can't remember whether you swung your left leg over the stick or moved your foot around behind it. At any rate, getting over there was an easy thing to do.

The gas tank is visible beneath the instrument panel and looks as if it would hold considerably more than the 12 gallons which it does. There's a not too clear instruction printed on the tank about the gas valve which is beneath the tank. You can reach under and feel it, and if the lever is in line with the tubing the gas is on. It was evidently intended that the gas was to be left on all the time and there's just enough extra maneuvering required to encourage that. It is probably a desirable practice. The only

reason we got in the habit of always shutting gas off was because carburetors leaked so frequently. They don't seem to now, and if they do should be fixed anyhow. You may be a little surprised to find the throttle at the left side of the instrument panel, but on the no-duals basis it might as well be there. You find the throttle travel quite short and make a mental note of that, because opening a throttle abruptly is one of the worst things which can be done to an engine.

The trim tab is controlled by a lever extending out beyond the left end of the seat. The knob on it travels through an arc of about a foot. With it all the way down it stops at a mark labeled "Down." Then half way up, there's a label "Neutral," and finally an "Up" label. With so much travel in the control you anticipate being able to get a fine trim adjustment.

On the top of the rudder pedals you find a nice set of toe brake pedals, with the angle your foot makes with the brakes just right. You'll notice that the rudder pedals have a rather small amount of travel and wonder how sensitive the rudder is going to be.

There's no starter, so in the process of getting ready to be cranked you get the left window open and in passing pick up another impression of good workmanship: the window fits its channels snugly and slides easily back and forth. It does not appear that it will get scratched from being opened and closed a lot.

As you start to taxi out, if you happen to need to make a spot turn, you find it takes quite a bit of power. That may be because of the extra large size wheels and also because the gear is not as wide as what you may have been used to. As you feel out the rudder and steerable tail wheel, you find that while the control is positive enough there is some tendency to use the brakes some to get a little more turn than you can get without them.

The ride on the ground is good. There's good visibility over the nose, and those over-size balloon tires make the ride soft enough. In fact, it's hard to believe you are on a rigid gear. Speeding up a little, you find that the brake pressure required for a quick stop is high enough to remind you what you're doing with your toes, and that you get quite good braking action without the ship getting light on the tail.

The take-off will probably surprise you. Having looked over that wing and estimated some six feet less span than a trainer you expect to run more than you do. Some pilots have mentioned that in a level attitude the stick is tilting back just a little. The tendency being to hold it vertical to the floor, you may get the tail a little too high the first time and stay on the ground longer than necessary.

At any rate, it is quite good directionally in the run and seems to get off in so close to the same distance as a trainer that you can't tell the difference. While the angle of climb is just a little flatter than previous Cubs, the rate is equally as good and there is no

disappointment in the way it gets up. If you've been flying anything other than trainers, your reaction is that it is quite a climber, for it takes you across the airport fence with a lot of altitude. The best climbing speed seemed to be around 65.

Levelling off for cruise, the trim lever has to be pushed down a little from the neutral take-off position as speed is gained. On the ship flown the trim lever evidently did not perform quite like it was designed to as it could be moved quite a bit with no results, then you'd move the stick and suddenly get a lot of results, and have to reset the trim lever and pump the stick again a little to see where you'd come out. This was somewhat confusing at first but was probably one of those new shoes propositions which a little use takes care of.

Cruising at 2250 r.p.m. the indicated airspeed was around 85. The factory gives the ship a top of 102, which presumably means at gross weight at sea level, so figuring the cruise as 80% of the top, which is a good actual-practice low-altitude figure for the long pull on most private airplanes, you feel satisfied that it is at least not another of these 65-70 propositions, which is just a little too slow, even for short distances.

Due to its short tail and less damping in roll due to the short span, you get a little different ride in rough air than is usual in a light airplane. It will oscillate in yaw a little now and then, roll a little more and faster than any previous Cub, and the bumps feel like they do in the faster airplanes. But while noticeable, by way of contrast, these characteristics are small in quantity and the ride is not unpleasant because of them. The best thing in an airplane that flies that way in turbulent air is not to over do on correcting 'every little movement and let the ship do some of the work. If this sounds like the controls are over sensitive they aren't. The airplane is just a little quick in its reactions to changes in relative wind in both the right and left sense and in the rolling direction. But it has enough stability to do most of the correcting for this and the characteristic is just something you notice at first but are by no means annoyed by.

Before starting in to clear a few hurdles with the airplane, it is good to sit back and ride awhile first. It's just a plain nice little rig. And you keep being impressed by how long our two-place airplanes have been too tight for two people. In this one you can really spread yourself out and stretch out and enjoy the scenery.

The vibration situation is not too bad, although they haven't done a lot about it. The Lycoming is rather smooth to start with, so that helps. As to noise, there is a muffler so the real bang is taken out, and the situation is good enough that you wonder if just the least effort in some cabin soundproofing wouldn't really accomplish a lot. Anything along that line would have to come out of the 40 pound baggage allowance, so the margin is slim, but it is understood that in some of the airplanes in which glass wool is used liberally the weight penalty is only ten pounds.

Getting to the stall characteristics, the airplane comes out quite well with one in it. The pitch before roll now required by the book seems to be quite well accomplished. Power off, a slow approach to a stall finally gets you to sliding along with the nose well up, stick full back. Finally it may break slightly in a stall and then fly right out even though you hold the stick back. During this flight at minimum speed the ailerons can be moved freely without failing to work and they also work in a slow speed, power-off spiral.

Power on, solo, the main indication of what you're doing is the amount of back pressure it takes on the stick to get a stall, if the cruising trim is left on. Finally by pulling hard enough, though with very little back-stick travel, the nose drops from a very high position. As it comes down there is just a slight trace of rolling tendency, but the ailerons will work satisfactorily. In a power turn, the radius seems to get quite short and that little nose really races around the horizon. At times it seems almost as if you'll get one of those actual stalls consisting of pitch in the turn which can sometimes be accomplished with an airplane with a short enough tail. But it can't quite catch its tail, as it were, and you just go round and round with excellent resistance to bottom rudder and crossed controls.

With two in the ship the situation is a little different, for with the more rearward e.g. the break in a power stall is much snappier. The nose pitches down in a rather lively fashion and after the permissible period it rather slowly starts off, in this case to the left each time. If you use ailerons at this point it rolls right off towards the down aileron and you've rather quickly gotten to a full nose-down attitude and made almost half a turn before you catch up. This, of course, is going to be bad medicine for the buzz boys, both because the aileron dumps it laterally and because it finally goes off rather fast in response to aileron. One situation aggravates the other. Just what the design problem was is not known. The airplane can be landed tail first without too much effort, so that suggests it could do with a little less elevator up-travel. It also seems that it could do with even a little less aileron travel. The rate of roll of the airplane is quite high when you give it a little ailerons, suggesting there would be a good deal to spare there, and maybe only a very little less would be needed. If the aileron characteristics with two aboard were as good as they are with only one in it, the lateral control characteristics in the stall would be most excellent. It is hard to believe that they can't achieve this if they really want to, and without going to much trouble.

The approach is made with cruising trim, gliding about 60. The nose isn't heavy with this trim and speed and it has the advantage that if the pilot had to go around he wouldn't have the problem of the ship suddenly being so tail heavy if he gunned it. If you do that with the trim lever all the way up, it requires a rather surprising amount of forward pressure on the stick to keep the nose down to where it should be.

The approach path seems just right at 60. You are pretty well going where you're looking and you get this sink at a speed that is well above any critical speed. In the flare and landing, in rough air, it requires a little more attention laterally, but it hangs on

nicely and finally sits down as only a Cub can. You sense, on touchdown, that the landing speed is up somewhat, but it is still low and with such good visibility and directional stability and control in the roll you like the airplane even better by the time you stop than you did before you started out.

The price of \$1990.00 includes only the airplane. Even a primer is a few dollars extra, as are also a carpet and a cabin heater. But that doesn't matter, for one way or the other these things have to be paid for. The big thing is that here for just very little more than a Ford car is the most appealing small airplane ever built. And, too, it has a very marked touch of quality to it that never existed before in our lowest price airplanes. Pride of ownership is a potent factor in a thing of this kind and you are going to see a lot of it among Vagabond owners.

Or, at least, such were the impressions after something less than an hour of flying off a smooth runway in about a 15 mile wind in moderately rough air, from Staten Island Airport, N. Y.

Now would be a chance to really find out about this little airplane: ferrying one from Lock Haven to Wichita. The trip was looked forward to eagerly.

The bus to Lock Haven comes right by the railroad station door at Williamsport shortly after the train arrives. It is a pleasant ride down to Lock Haven on a bright spring morning. By pulling the string, you can get off the bus a couple of blocks from the factory without going on into town. This was sure going to be a day. Clear, light winds, and a chance for an early start.

Things have thinned out a lot at Lock Haven and you miss the many friends of a decade who aren't there now. Lots of bare desks in the offices, the Sales Office moved over to the airport.

There's somewhat the atmosphere of clearing after a storm, of a fighter who's gotten up off the floor, suddenly clear headed and on his toes.

You sort of catch the spirit over there that while maybe they are not out of the woods yet, they are accelerating again and are a wiser, hardier lot, more attached than ever to a tradition that is singularly theirs: low price airplanes that, as they once said it, everyone can buy and fly.

It was 11:00 A. M. by take-off time, after a trip down the Vagabond production line (seven a day), and a few paper preliminaries on the ferrying job.

On leaving, the papers included a check for \$85.00, which seemed quite liberal for what was planned as a day and a half junket.

While the usual way of getting acquainted with an airplane is customarily to do a few stalls, maneuver it a little, and shoot a few landings, you really learn most flying in a straight line. Soon after the take-off at Lock Haven the air started getting rough. The wind was light, but from the southeast. Hindering winds are always depressing. Rough, yes, quite rough. Stiff ailerons, lots of roll with some yaw. And that trim tab. Hard to get it just right. You move it a little for more nose down and nothing happens. Then you move it a little more. Still nothing. Then once again, and it's too much. Then you go through a similar lag and overshooting raising the lever. Hinges on the trim tab binding? Cable stretch?

Noise? Vibration? It is mighty steady, as far as anything rattling or shaking, and oh, so roomy. But you can tell it is going to be a wearing airplane for a long trip, that the noise and vibration is just those few percent too high to permit any satisfactory degree of comfort.

Then you get to looking around and find a shipping tag stuck in the upper left wing root, saying that you should never use partial carburetor heat. That it ought to be either off or all the way on. And you wonder how important that is, and why, and realize that certainly that card is going to disappear in a hurry and lots of people are going to use partial heat as is customary.

An hour sometimes goes by rather quickly and the first one did, bringing up Altoona, 70 miles. The airspeed had been indicating between 80 and 85 at 2300 r.p.m. 70 wasn't bad what with that wind. Then for the climb to 3,000' and to swing more southwest and clear that wide hump of ground backing up Altoona on the west. The little Vagabond gets right on up.

The ability of the human machine to simplify a constantly repeated mechanical task is really remarkable. You get in rough air in any new airplane and the chances are that at the end of an hour you will discover that you aren't flying it at all like you were when you started out. Due to the amount of roll in this airplane in rough air you'd wear your arms out before long trying to coordinate in the usual manner. At the end of an hour you find yourself with your arm and hand resting comfortably on your thigh and that you are actually flying the airplane with your fingers. Mainly you just hold it straight with the rudder and do nothing to correct a small amount of roll. If the roll is considerable or prolonged, just a little sidewise stick movement with your fingers and it levels up. So, without quite realizing just when you started doing it, you become aware that this is an airplane to be flown principally with rudder in rough air.

Turning over towards Pittsburg-Bettis at Altoona, the wind must have shifted somewhat, for much too soon and a few miles too far south, the river was hit below Bettis.

The landing wasn't good. Lots of turbulent air there, and going in northeast the ship must have been flared a little high and in a gust, for suddenly it dropped a few feet. It thumps down pretty hard. Mental note: flare out closer to the ground.

The time from Lock Haven to Bettis was 1:45, or 86 m.p.h., gas consumption 5.4 gallons, or just a hair over 3 gallons per hour. Lock Haven to there, \$1.78 for gas in a plane which could just as well have been carrying two as not. Depreciation for the 1:45 maybe 75c. Maintenance surely not over 50c. So outside of insurance and hangar, \$3.03 for what would surely be a \$25.00 trip for two on the train. Figures like that make you feel that we've got something so fantastically good in private flying, yet for some stupid reason don't seem to be able to tell the public about it.

It was at Bettis that the first opportunity came to see public reaction to the Vagabond. Three people walked up to it at the gas pit and after looking it over rather briefly, one said, "Well, what is it?"

"It's a Cub."

"A Cub? It can't be, they don't build a side-by-side."

"The fuselage reminds me of a Monocoupe somehow," another one spoke up.

"What kind of engine is that?"

"A 65 Lycoming," was the answer.

"They don't make 65 Lycoming any more though."

Then they all took a closer look at the airplane. People are completely ruthless in their appraisals of new airplanes, especially if they find they are talking to only a factory or ferry pilot. They looked hard trying to find something they could get their teeth into and seemed a little non-plussed.

"What does it cruise?" one of them finally asked.

"Somewhere around 85 on three gallons per hour."

Obviously he didn't believe it.

An instructor passing by said he'd flown one and rather liked it, but' it was too tinny. It isn't tinny. He meant too noisy. No one knows better than instructors what a day in a too noisy airplane can do to you.

A quick hamburger and cup of coffee later, the group was still giving the little Vagabond a going over, and by that time were really anxious to talk. After all, it is simple and plain, but neat as a pin and with a touch of something about its lines that sort of pulls you to it.

Surprisingly, no one asked the price until the very last, and when they found it was only \$1990.00 it looked as if the trip would be delayed for sure.

But in ferrying the idea is to keep moving.

The winds seemed to be mainly from the south to Columbus, Ohio and two hours and 6 gallons later a landing was made at Ohio State University's Don Scott Field northwest of town in about a 25 m.p.h. south ground wind. 80 m.p.h. had been the ground speed for the hop, which seemed impossible when most of the time a 20 degree correction for drift had been used. No question of compass error. It was right on the money. And, incidentally, that gas gauge works well. After 1 hour, if you're really filled at the start, it's just a little below the 1/4 mark. At the end of the 2nd hour, right on the 1/2 mark if you're burning 3 gallons per hour.

The landing at Columbus was sort of catercornered across the runway intersection, with a roll of only about 50 feet, so there was more wind than realized, and with somewhat more than moderate gusts. Taxiing way into the hangars, cross-wind, the ship tended to tip to the right side once. Maybe too much taxiing speed. The ship feels heavy on the ground and you tend to taxi it too fast in wind. Or gear a little narrow for that much cross wind taxiing? Or just a freak paved runway thermal effect you begin to run into as summer comes? Or could it be only that little too much dihedral again?

That's a nice field, Don Scott, quick service, a small restaurant open from 9 till 1:00 P. M. Two paved runways. No tower. Good place for a non-radio equipped ship.

The ride to the next stop, the paved municipal field east of Terre Haute, was obviously going to be at a slower pace, for the wind was now from the southwest with a lot of turbulence. It was expected that the ground speed would be around 60, and since the distance was 235 miles, allowing for no wanderings off course, Indianapolis seemed a more likely limit on the flight than Terre Haute. But, somehow, no matter what the wind, if you keep a light-plane low it seems to get along better than you expect. Terre Haute was reached in three hours flat, landing to the southwest, with still a good ground wind. 9 gallons filled it. Average ground speed 75. It certainly seemed impossible if the cruising speed is only around 85 55 or 90. Which just goes to show how long it takes to find out what an airplane cruises just by flying it cross country.

The real objective for the day was Vandalia, 111., where there's a long one-way paved strip, (the whole countryside was soaked from spring rains) but there was only a bare hour of daylight left and the distance was 105 miles. It was one of those close decisions. Getting there would make the next day's hop to Wichita a cinch even if the mid-west turned loose some of its heavy spring winds. Then you imagine dragging into Vandalia a quarter hour too late, no navigation lights, then reflect that the responsibility of a ferry pilot is to deliver an airplane not at any particular time, but in good condition.

But even so, checking up on the map that night, Terre Haute is a little more than half way from Lock Haven to Wichita, and the flight had been made in half a day with much less than helping winds. Makes you realize that if the airspeed on this ship were rigged

to indicate 100 when cruising, people would be a long, long time finding out that it was actually doing only around 90. If, in fact, they ever did.

Coming out to the field the next morning the taxi driver wanted to know which airplane was the one. Trying to point out a Cub among staked-out lightplanes is like trying to point out a baby in a basket in one of those rooms where they keep them all in rows. He couldn't see it, but there it was, as cute as could be: the extra dihedral, the stubby fuselage, the distinctive lines: how could anyone not see it above all the others? That's the way you get to feeling about this little airplane.

The weather bureau at Terre Haute was somewhat confusing on the telephone, but it seemed there'd be showers, and that the prospects of getting to Wichita weren't so good although the exact reason why wasn't so clear.

It took 1:42 to get to Vandalia on 5.7 gallons. 62 m.p.h. There were showers all right. And imagine, a really rain-proof cabin in a small airplane! Not to mention a cabin heater which really does the job! The Vagabond has a very symmetrical airflow around and over the windshield. The drops move up at first at an incredibly slow pace, then start picking up, and finally race back over the top of the windshield in a streak. Surprisingly, those large wing struts don't seem as streamlined as they look. A row of water drops forms parallel to and quite a distance from the trailing edge. And you wonder about strut cuffs at the spar attachment for there seems to be quite a still air area on the bottom of the wing behind the juncture.

The gas stop at Vandalia was short, for you know how anxious you get to get back aloft when there's a big shower moving up fast a few miles to the windward. The next stop, Columbia, Missouri, 175 miles away came up in 2:40, or at 65 m.p.h. and required only 8 gallons. It had cleared by there, but obviously something was up. The ground wind was from 30 to 35 from the southwest with gusts, so the landing speed was close to zero.

Taxying into the wind the ship showed just a little tendency to tip sidewise at times, but rather than a ground-handling characteristic of the airplane in such wind, it seems now that it was more probably related to taxying into the wind a little too fast with the stick back. There is a spring in the elevator system which will hold the stick all the way back when it is sitting on the line. It is easy to let this tendency of the stick to stay all the way back cause you not to push it forward when taxying into a strong ground wind. It takes a good deal of push, but, obviously, should be done as otherwise you can easily get your airspeed to the take-off point and stall off. With the stick forward; the tail will lift before' the airplane can ever "take-off" and that will let you know you're taxying too fast.

A couple of hangar men started running out to the ship, but before they got there a turn cross wind was made all right and the ship taxied quite well, just creeping along. It

seemed, however, that this was about the upper limit on ground wind and that although Wichita was now only 260 miles away the ship should go in the hangar. What little disappointment was felt about the airplane's groundwind limits and handling qualities was soon dispelled when in the course of half an hour one or two of nearly every make of postwar airplane came in. The Vagabond hadn't done badly at all. Several of them nearly dragged wing tips in their landing rolls, some couldn't turn out of the wind without a man on the wing, and one 4-place tricycle job went sailing along on its nosewheel and one rear wheel for about a hundred yards before it could get stopped. The wind was slightly off the runway.

These ships coming into Columbia when the wind got up show what's happening in private flying to-day. You seldom see anyone out between towns but just let the weather get bad and here they come from all directions. All those people out there flying around cross country? Yes, they are. Just as private owners should be. And lots of them, at least in the midwest.

There was a dry front on the way, with even higher winds, and a terminal forecast for Wichita included snow showers. Kansas City might be possible, but why push so hard? Ship tied out all night. Tornado season. Still you feel so dumb going to town at one o'clock in the afternoon, when there's not a cloud in the sky. But out there, wind is also weather.

To add insult to injury, the ceiling was about 600 feet the next morning, wind still high, and an occasional light snow shower. A short distance out of Columbia the engine revved down some, so full carburetor heat was applied, and it revved down still more and didn't seem to be getting well at all. Not enough carburetor heat. These small airplanes never seem to have really enough, you think.. Finally, as a last measure the throttle was opened wide and a steep climb entered so as to get as much heat as possible with as little airflow through the heater as possible. That cleared the ice out

Examination of the heater later showed the probable reason for this performance. The damper in the air intake is V-shaped, very wide at the top. Looking at it from the left side, when the heat is off, the V lays over to the left, the left side of it touching the bottom of the intake. The cold air rams in, hits the V and shoots up into the carburetor throat. With full heat on, the V lays over to the right, the left part of it closing the cold air intake and the right one laying over to the bottom and covering an exhaust port on the bottom which has been letting the hot air out. The trouble was, the V, in the right-tilt position, didn't touch the bottom of the stove, so some of the hot air coming in was going past the damper and out the exhaust port instead of up into the carburetor or maybe even some cold air was being sucked in through the exhaust port. It often happens that on original test equipment the heat rise is all right, as it is required to be, but that in production, due to things like this, loose joints, etc. the heat rise is only say 60° when it is supposed to be 100. That should be watched closely in production

because a very high percentage of small-plane engine failures are due to carburetor ice. Incidentally, this description of how the V in the carburetorstove works may also explain why partial heat is never desirable: the V upright you'd probably get a lot of turbulence in the induction system and an uneven mixture distribution.

The trip from Columbia to Grandview, Missouri, a large paved south of Kansas City, was a rough one, two hours and 6gallons for the 120 miles. A wheel landing was tried there. N. G. The gear is too stiff to take even a small rate of descent without giving you a pretty fancy aerodynamic bounce. The taxiing at Grandview was all right. Move at a snail's pace. The ailerons are so powerful they are quite helpful on the ground when you're going cross wind. On leaving there, the gasman was sympathetic and said as far as he was concerned to let it go from right where it was. It went straight up. From Grandview at Kansas City to Ken-Mar Airpark at Wichita is about 170 miles. Heading due west down the section lines, the ship moved along over the ground in a southwesterly direction, doing the 170 miles in 2:15, or at 75 m.p.h. ground speed. That little airplane is bound to cruise somewhere around 90, which, on 65 h.p. is really fantastic. And 75 aren't hard to take. It's 55 and 60 hat hurts.

The termination of a delivery flight always seems like an occasion of some importance. Somebody must be waiting anxiously for any new airplane. And here it is, not damaged in any way, no mud on it, and the smell of dope in the cockpit still strong. But arriving with a Cub is like brining in another one to a family of 15. They just shove it in the hangar, sign the receipt, and go about their business as if nothing had happened. All that rough air, weather, laborious navigation, low gas consumption, and surprisingly good speed, impression of both the trip and the airplane. Well, they don't mean anything except to the one who does them.

By way of taking a busman's holiday, a trip was made out to Ken Mar Airpark (a very attractive place) the next morning, a Sunday to buy half hour's time on Vagabond. Landing all the way out in so much wind, it wasn't clear just what all had been going on. The main questions left were how does it ride on a sod field? And does it have a high rate of sink in the glide or was that just wind effect?

It rides pretty rough on sod, and even if it had duals would not be popular for dual with that rigid gear on any except the smoothest sod fields. For private use, you'd probably carry the air in the tires a little low, and probably wouldn't mind the gear stiffness as you wouldn't be making continuous landings as in school work.

The glide business was confusing. 60 seemed good, but gave too much float. Or at least too much in the sense that the airplane seemed like one you should be able to land quite short. But at just below 60 the rate of sink suddenly increases to a surprisingly high rate and it just didn't seem wise to come on down that way. Not from fear of a stall or

lateral controllability, but from sinking through in the flare and hitting the ground too hard.

The results were inconclusive. 60 in the approach seemed more than was needed after flaring, but less than 60 seemed too slow for an airplane someone else owned. An interesting side light was thrown on the subject, however, by Mr. Isaacs, the manager of Ken Mar Airpark, Inc., Cub distributors in Kansas.

He said that when he got his first Vagabond, about a hundred hours back, he decided that since he was going to have to ride the right side without any controls he might as well find out definitely what he was in for, and when he should holler. He insists that the airplane should be glided at 50 indicated and that at that speed it will flare and sit down nicely. He also stated that the first time you try this the high rate of sink will scare you out of about a week's growth, but that it isn't hazardous.

Now for some conclusions.

The trim tab situation seems to be another serious indictment of CAA, and state-controlled design. Their requirement is that when trimmed tail heavy, stick-free, power-off, the airplane glide at 1.4 times its stalling speed with the most forward e.g. situation, which would be with no baggage, only the pilot in the ship, and a full gas tank.

The reasoning on this is understood to be that in case of an up-elevator cable failure the ship would, when trimmed tail heavy, not contact the ground at a dangerous rate of descent. If you isolate just that one eventuality, coming down at not too steep an angle or too high a speed is nice to think about. However, if you couldn't trim quite that slow, you could still use a touch of power to flare, so it really seems that for their proposition to make sense you must concede a simultaneous up-elevator cable failure and an engine failure. It would probably take a million years to get both these things to happen at the same time in actual practice.

In implementing this theory their requirements have detracted from the safety of the airplane. When you get ready to land it, there is little change in trim due to closing the throttle or to slowing to gliding speed. In fact, you don't touch the trim lever when you bring it in. The amount of nose heaviness is only moderate and just about like you like it.

So what's all that tail-heavy trim for, from a practical stand-point? Get a couple of heavy people in the ship, 40 pounds of baggage, and, say, half a tank of gas and trim it tail heavy in an approach and it will glide much too slowly. Or in any condition, trim it tail heavy in an approach and then overshoot and pour on the coal and you've got an exceedingly tail-heavy airplane. Or let someone pull that easy-moving and quick-acting trim lever all the way up in cruising flight and they'll either loop or get about 4g in the pull-up.

All in all, it seems they have required the manufacturer to design an undesirable feature into the airplane, when at most all they might have been justified in demanding was that in a normal approach it not take more than a pound or two rearward pull on the stick to maintain the desired gliding speed. In order to meet their requirement the Vagabond not only had to have an oversize trim tab with an excessive amount of travel, but in addition that spring which pulls hard enough to keep the elevators all the way up when the ship is on the ground.

It is likely that in your first ride in a Vagabond, if the air is a little rough, you may get the impression that the airplane is a little tricky. You'll probably get that impression from the quickness of its roll. In an airplane which rolls briskly in a rough air approach, pilots usually feel a little tense, wondering if a lack of lateral control isn't implied. A person will quickly find out that in this case there is no such lack of controllability and after a landing or two will be satisfied on that score and probably not notice it any longer.

As to the duals, the factory management has two ideas on this. First, they want an airplane that an operator can't use for dual. They want an airplane that he has to get out and sell to someone besides himself in order to meet his dealership quota. Their other thought is that the cost must be held down to the very lowest possible minimum. If you ask at Lock Haven what duals would cost, the answer is "They would cost the job of anyone around here who asked for them." But the pressure is going to be considerable from some distributors, for the demonstrating situation, even if you limit yourself to private pilots, is an extremely awkward one at times. It seem that the ship should have at least dual pedals. One stick is all right, even for dual, but you sure need some pedals on your side because in a new airplane prospects often just quit thinking once they get back on the ground and it's hard to talk fast or loud enough to prevent a ground loop, or even to say exactly the right thing. Also, you often find yourself demonstrating to someone who hasn't flown in six months, or a year even. The first thing a person gets rusty on is the rudder.

All in all, it still seems that this is one of the most appealing and important airplanes in a long time. It gets off and up surprisingly well. It is unbelievably fast for its horsepower. It is delightfully roomy. But it does reflect a chronic condition of the industry: manufacturers are continually getting knocked out from failing to pay attention to small things. Instead of \$1990.00 the price of this airplane should be \$2090.00, the extra \$100.00 to include a motor mount with Lord or some other suitable shock mounts designed into it and ten pounds of glass wool soundproofing in that cabin. They could raise the price this \$100.00 and sell three times as many, for to-day private pilots aren't circling airports in 30-min-ute hops like they used to. They are going places. This airplane will take them there more cheaply than anything else, but for it to have a chance to do so, how the customer feels in it at the end of the second' and the third hour becomes the largest single factor affecting its wide acceptance.

In the course of time airplanes tend to end up with all they should have started out with. This is one we want to see start out with all it should have because it could give private flying a new lease on life.



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