

THE CASE for the NAVAL AVIATOR

POPULAR AVIATION

SEPTEMBER
25c

COL. ROSCOE TURNER

Says
**"AIR RACING
IS HELL!"**



*"We race for glory and for fame
and for the money we can make."
— ROSCOE TURNER*

A Day with an Airline Pilot

WHAT THRILLS HAVE TAUGHT ME *by* **TEX RANKIN**

Air Racing IS HELL!

By
COL. ROSCOE TURNER

as told to Edward Churchill

Col. Roscoe Turner, America's outstanding speed flyer, veteran of a score or more of gruelling air grinds, told the editors recently:

"Speed flying has made vast contributions to military and commercial aeronautics. The main advances have been made with radial motors, subjected to strains in both speed flights and closed course racing which even the makers did not believe possible.

"All racing is experimental flying. You don't know what will happen. In 1928-1929 aeromotive engineers, commercial and military pilots and racers, including myself, were of the opinion that it wasn't possible to cool a motor of much over 600 h.p. with air. Through racing experiment we have learned that more than four times this horsepower can be cooled adequately.

"In 1932 the chief engineer in one of the largest plants told me that it would be impossible to build a 300 m.p.h. airplane around a radial engine. My present motor has driven my 'Miss Champion' at speeds up to 375 m.p.h., and I am confident the limit has not yet been approached."



"In 1932 the late Jimmy Wedell [right] and I got together and built three racing jobs. Jimmy hit 280 and I made 270. The next year Jimmy stepped up to 304, I to 298."

MY SHIP was up on its left wing tip, passing a slower job at No. 4 pylon when it happened. Cleveland's Thompson Trophy race was in my bag. I had one lap to go. Already I was weighing the cash against the time and money I'd put into old No. 25. You could wrap up the 1935 speed classic, put Turner on the package and send it to me.

Then the supercharger, turning at better than 30,000 revs, threw one of its six blades. That blade chewed up the entrails of my motor the way a shotgun charge tears up a small bird at too-close range.

Anything could have happened in any one of those thousands of seconds of grinding, roaring, tearing speed which made up the more than 60 minutes the race lasted. And here it was. The prop whished to an abrupt stop. Oil and smoke belched, smeared my helmet and goggles. In that split second I automatically did what I had disciplined myself to do in six years of angry, hornet-sting competition which is big time racing.

I came out of the bank and pulled back on the stick to take all the elevation 300

m.p.h. would give me. I batted at the oil on my goggles and waited, as the speed drummed out of my ship, for those flames. Long, licking needles of fire, wind-driven and hungry. My hand groped and found my parachute ring.

But no flames came. Just blinding smoke and oil. I was riding over the field, smoke-writing. One hundred and twenty-five thousand fans were waiting to see me leap. But the ship was mine. Why should I leave it?

"Hell!" I thought. "I've already dropped ten grand!"

I watched for other ships pounding around the course. I figured my gliding angle. I made a wide circle. I tried to smear the oil off my goggles, finally pushed them up. And No. 25 got in all right. Just after I nursed her over the border lights she dropped out from under me. She hit, bounced 10 feet in the air, splattered down again. We were on the ground—and safe.

It's a good thing there were no autograph hounds close. I couldn't have signed by name with my arm strapped to a board. I was shaking like a V-eight with one bank out. I'm always that way

at the end of a race. So is every other pilot, if he has any sense. Because if he has sense, he knows that he's in a hazardous business and he's afraid. If you haven't sense, and therefore haven't fear, they pick you up with tongs and a basket on the back stretch.

The biggest laugh in my life is the racing pilot who says:

"I fly for the sport of it—and for the cause of aviation."

Those babies, creasing the air with those jitterbugs that don't even plan to get off the ground at less than 100 m.p.h., are in there for either of two reasons—or both.

The first is those big black headlines, that mob of handshakers, that wreath around the neck, those still and newsreel cameras, those reporters, that waving and cheering half-mile of grandstand spectators. It's nice to see people after you come back out of a wild, cockeyed, smeary world in which the trees seem to bend double.

The glory hunters!

The second is that nicely autographed check which somehow never quite balances with the cost of ship, fuel, ground

crew, time and, last but not least, the awful punishment you take.

Sport? Good of aviation? Bunk!

Backers as well as pilots are out for glory. Whether it's the closed-course Greve or Thompson, the transcontinental Bendix, or a speed dash from here to there. Their names in headlines. There isn't much sport. Flying a racing job is not only dangerous, but it's uncomfortable. It's not relaxing. You fly on your nerve. You fly every foot with the thought—the prayer:

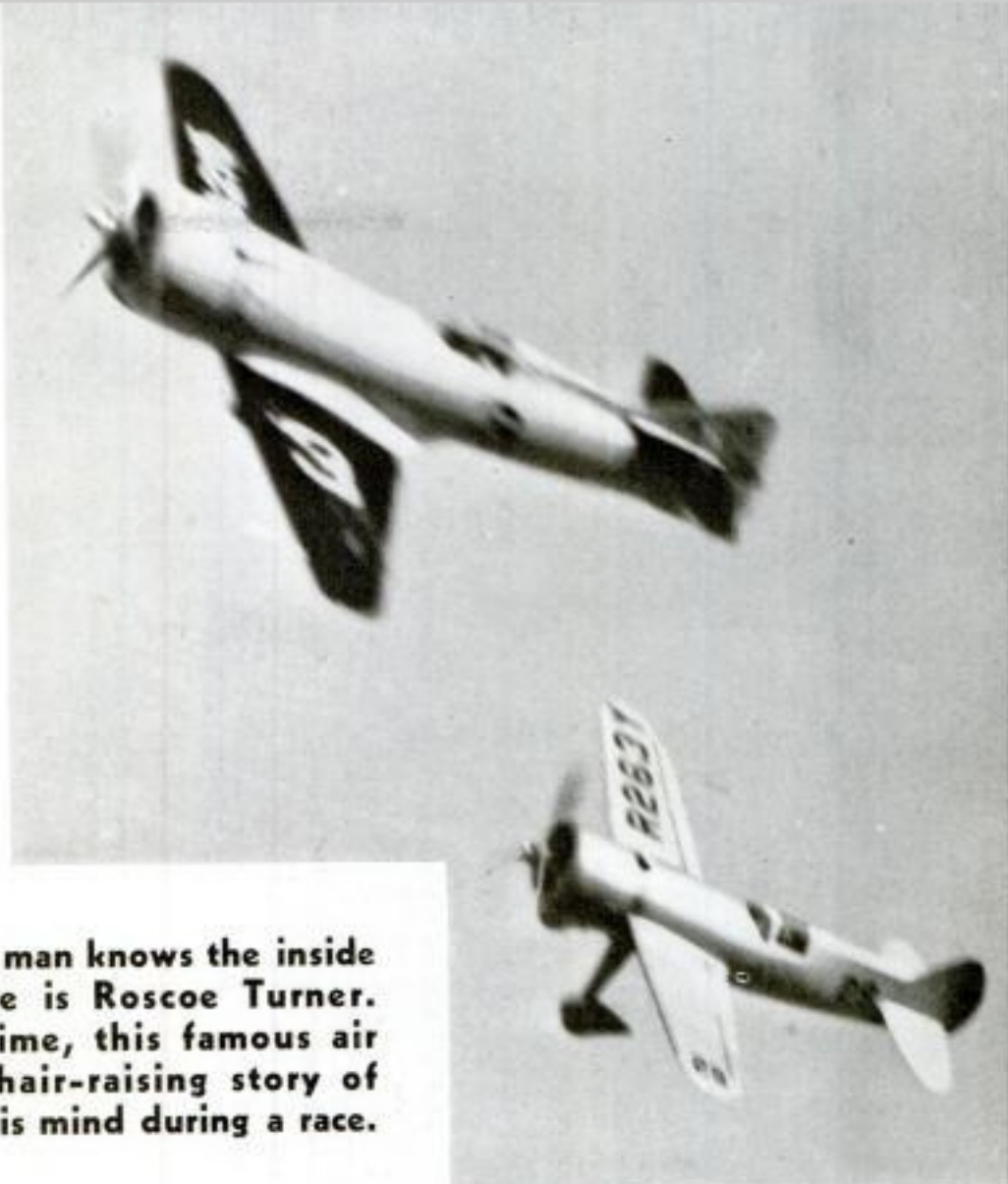
"Thank heavens! I've gone this far!"

Never have I flown in any race competition, from the London-Melbourne classic to the Thompson dash that I haven't felt myself brushed by the wings from beyond. Sometimes twice or three times.

There was that time in 1932 when Jimmy Doolittle and I were flying neck-and-neck. We came within a hair of piling into each other on a pylon due to lack of visibility. Buried down deep in your cockpit, one wing to the sky, you can't see the other fellow. We came within a few feet of getting it. Jimmy pulled up, I pulled out, and it's a break we're both here today.

Why do I risk my neck?

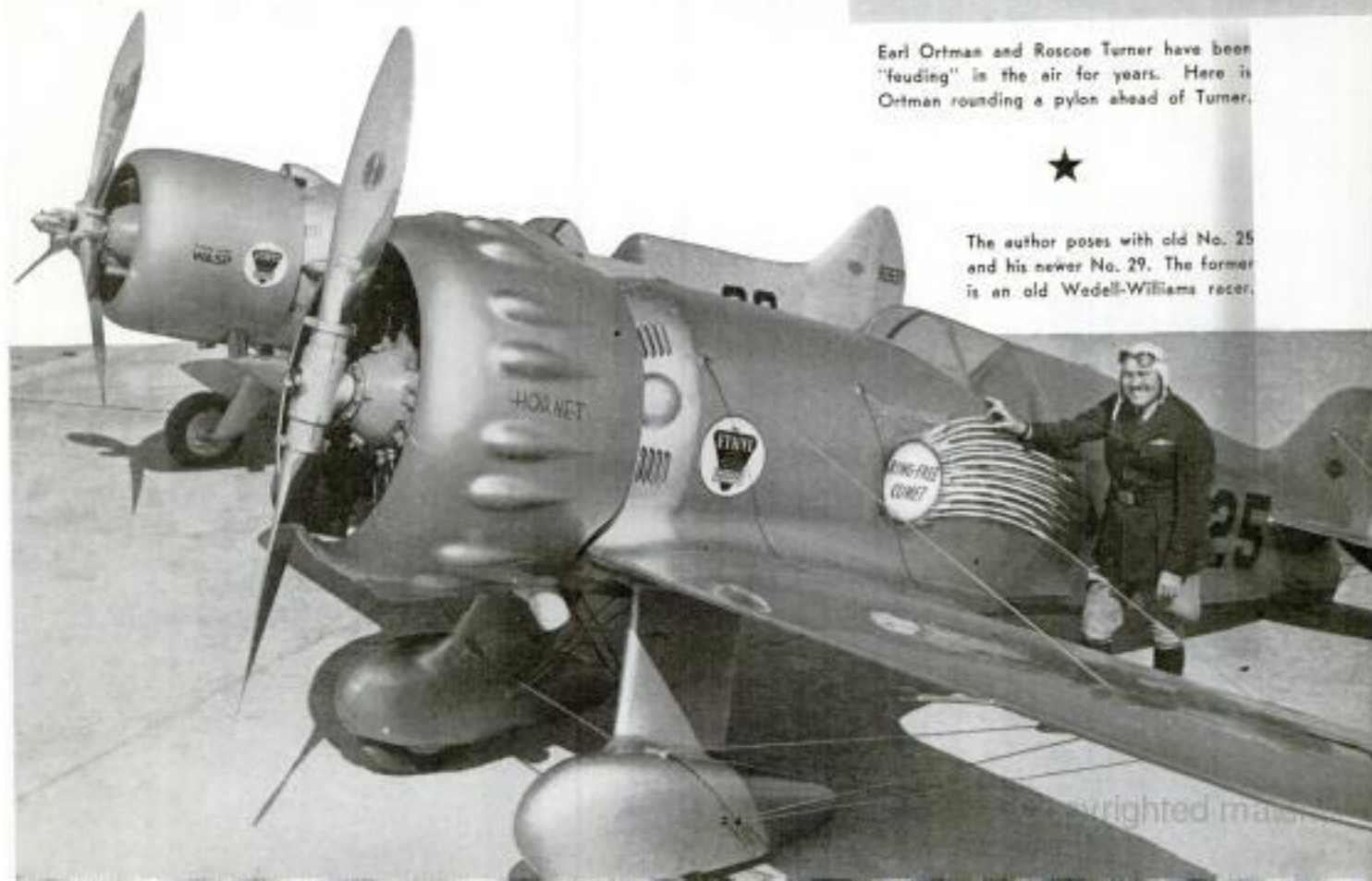
If any man knows the inside story of air racing, he is Roscoe Turner. Here, for the first time, this famous air personage tells the hair-raising story of what passes through his mind during a race.



Earl Ortman and Roscoe Turner have been "feuding" in the air for years. Here is Ortman rounding a pylon ahead of Turner.



The author poses with old No. 25 and his newer No. 29. The former is an old Wedell-Williams racer.





"The race is won. I'm shaking like a leaf. But I hide it with a forced smile . . ."

Most important to me is the advertising. I've hoped to make money. But, so far, I'm still in the red in the racing field. I've grossed better than \$50,000 in prize money, but I've got \$100,000 tied up in old *Twenty Five*, which has been in service longer than any racing ship in the world to my knowledge—since 1932—and my new *Miss Champion*, which brought in \$22,000 last year at Cleveland.

The advertisement means a lot—if I win. Because if someone wants my services they get a name. I have to keep everlastingly at it—with my nose to the pylon. Turner has a reputation as a speed merchant, and the minute I stop speeding I start losing in value.

Last is the roar of the crowd. I'll come right out in the open—I love it!

Much is made over the contributions

which racing has made to commercial and military operations. It has. Mostly in improving motors. Back in 1932, the chief engineer of one of the largest manufacturers flatly stated to me:

"You can't build a 300 m.p.h. airplane around a radial engine."

That year the late Jimmy Wedell and I got together and we built three racing obs. We didn't make 300, but we shoved Jimmy Doolittle to 294. Jimmy Wedell made 280 and I made 270. The next year, using the same planes, Jimmy stepped up to 304 and I clipped 298. We proved it could be done.

Today, my Pratt & Whitney-powered *Miss Champion* has been up in the 360-375 mile range, within 90 miles of Germany's 463 and within 65 of Italy's 440 with in-line engines. And I'm using only a little better than a third of their horsepower. Howard Hughes has done an official 352 with a radial.

Motor manufacturers, using the air races as a testing ground, have been stepping up their power constantly. With motors improved under the terrific, wide-open pounding which we give them on the 10-mile course at Cleveland, they've done it. In racing, a motor gets a different and harder type of service than it does either in military or commercial flying. And the motors usually come to us in experimental form. We demand to be first with the latest. If a motor goes the distance, motor manufacturers are encouraged to stretch on and beyond the old limitations.

Jimmy Haizlip, Jimmy Doolittle and all other speed flyers have contributed considerably to horsepower increases and general dependability. At the speeds we've flown them, they have not been supposed to stay together. Naturally, we've faced a lot of problems in cooling, lubrication and metallurgy. Cooling, oils

and metals have been improved, motors strengthened, beefed up as needed. Every race presents a new problem—and somebody is always licking it. We have to do so to stay alive.

The Thompson race, as now flown, lasts a little over an hour. Last year, I lapped the cockeyed pylons—and I say cockeyed with a purpose—at an official speed of 283 m.p.h. Actually—and few people among the millions that watch for the results every year—realize that to do this I flew most of the time at 345 m.p.h.

Why? Because, in closed course procedure, you have to make a decision. Either you fly the pylons wide without losing much speed on the turns, thus lengthening your track, or you cut the pylons sharply and lose a lot of speed doing it. I choose to fly wide.

I say cockeyed pylons because No. 4 and Home, between which the grandstand is located, are close together and require only about 70° turns, while those marking the back stretch are farther apart and require about 110° of direction change. Sharper than a right angle.

Balance the course and make it 25 miles and you'd have a greater speed average without going faster. But then the crowd wouldn't get the thrill of the close-at-hand turns and the ships wouldn't come by the grandstand so often. Horrors!

Now, let's go around the calendar with an independent racer, which I am. By that, I mean that I'm not backed, I own my own ships—and they're built under my supervision, incorporating my ideas. At about \$50,000 a throw.

Immediately after the finish of a Thompson race, we find out why I won or didn't win. That means tearing down the motor. Then I think of ways I can get more horsepower, cut down resistance. A new ship is created. Or an old one is rebuilt, refined. Maybe there's a new motor coming out. So I wait for it and, when I get it, I test it. All this takes months. The ship is ready in the late spring or, sometimes, in the later summer. Some time in August. Behind me lie months of expense, experimentation, test flights, heartaches, small triumphs. I arrive at Cleveland jittery, wondering what the other fellow has that I haven't, worried about the money I've gotten all ready to be washed down the drain.

I think my ship is right. But I must know the course. I must know where the four pylons are, what roads cross the course at what angles, what houses have red roofs and what houses green roofs, what slender trees I can pick which line up on the pylons. Always looking out the left side of any ship I can lay my hands on. Only by memorizing these strange, assorted landmarks, will I be able to know where I am going later, when I am flying 300 to 500 feet off the ground, most of the time with one wing up, one wing down, steaming away from a pylon or burning toward one. I must learn perfectly for if, in flight, I look backward in any position but that of normal flight, I will go blind.

Then I qualify. I begin to speculate. Is this fellow pushing his bug to the limit, or is he hiding out a reserve of speed?

(Continued on page 68)



This picture of the author was snapped just after the hair-raising forced landing he describes at the beginning of his article. The mishap cost him almost \$10,000.

The I. C. S. student
stands out
in the
AVIATION
WORLD!



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Canadian residents send coupon to International Correspondence Schools Canadian, Limited, Montreal, Canada. British residents send coupon to I. C. S., 71 Kingsway, London, W. C. 2, England.

Air Racing Is Hell!

(Continued from page 12)

Is that fellow giving his all, or has he a couple of tricks up his sleeve? This form of mental exercise maddens me. Then comes a rumor:

"I hear the boys are ganging up on you, Roscoe. They're going to box you, like they did that time at Los Angeles."

I start my own rumor. This is 1938, I have had hard luck for three years. I am faced with bankruptcy, I *have* to win.

"You let it out," I say, "that if anybody tries to box me up, I'll chew a fuselage apart with that fan of mine and then bail."

Comes the fateful morning of the race. A pilots' meeting at noon. Beefs, arguments, threats.

"Roscoe," I tell myself, "you've got to come through—or you're ruined."

It is ten minutes before the start. I have just gotten the signal. My ship is ready. The constant-speed propeller is revving slowly. Ten minutes to go.

Perspiration soaks me. I'm carrying a terrible load. I have a power loading of four pounds and a couple of points. Five thousand pounds of cantilever wing, fuselage, motor and gasoline. One thousand and two hundred horsepower in the nose to drag one man 300 miles. But my wing-loading is something to make an aeronautical engineer throw away his drafting board. Each square foot of wing and tail surface must lift 52 pounds!

My hands sweat on the stick. I start watching the instruments I'll use. Cylinder head temperatures. Oil temperature. Tachometer. Oil pressure. Supercharger gauge. Fuel pressure. I glance at my chronometer. The hands lie still. It has stopped. No, it runs. Nine minutes. Eight minutes. Seven minutes. Down to one minute.

Damn it! I can't control my feet. My leg muscles are making them jump up and down on the rudder pedals. They are my feet—but they're doing things without me telling them. I swear. I swear as those legs keep jittering, as the clock stops, as I think of my debts, as I look ahead, fly that course in my mind. Ships to each side of me. I will not be flying my own ship alone. I will be flying nine other stinging, snorting, streaking little hornets. I will fly them because I never know what the other fellow is going to do. And at 345 m.p.h., things happen so fast.

Supposing I conk? Supposing I disintegrate? Where on the course will I be? Hell! This can't go on.

The flash! The muscles in my legs stop jumping. I am cold and steady, and measuring everything that surrounds the world of my small cockpit in which I am buried so deeply. I slap the throttle wide. The ship sweeps ahead, shooting across the field, faster, faster, faster. At 100 she seems alive, aware of her controls. At 125 she lifts. As she leaves the ground, she jumps ahead like a bullet. The motor revs up. The ship will fly to pieces. I have used low pitch for full ground power. Now, with the drag of the wheels on the ground at an end, the motor revs up to

2,800-2,900. I must stop that. I pull the pitch down too low—2,000. I push it up to where I want it—2,600. Trees are whishing by beneath me. All beneath me is a streak. I am heading for the scatter pylon, flying my own ship and nine others. I spot them, count them. For more than one hour I must know where each ship is, for if I do not know, I am apt to tear into one, wind everything up.

Around the scatter pylon. My mind is working like clockwork now. The strips of adhesive are on the dash to be pulled off, one by one, as I shoot by the grandstands. Already I am preparing to look at the six-by-six-foot numerals—an innovation of mine—held up by the ground crew to verify what the adhesive tape tells me.

Onto the course at 300. Nothing matters now but those other ships, my own ship, my speed, my instruments, the landmarks, the ground, the pylons, whether my ship will stay together. Paramount is my motor. It must not suffer. It must not overwork. My instruments will tell me.

I fly slowly at first. That is, a little under the 345. With this load of gas, too much speed is apt to tear the wing off. You can't pull up for a bailout with your wing gone. I have been low in self-confidence—worried about myself. Now I'm all right. Three years of bad luck are over—if my luck holds. I sight on that slender tree after I've cleared the home pylon. I ease the throttle forward. That red roof is blurring by under me. It won't be long now to the next pylon. It's almost here. That green roof tells me. Wing up, wing down. I'm around. I've been spotting ahead, looking for ships on my course. Where's No. 8? I have a duck fit. I am going to have lots of duck fits in the next 200-odd miles, when I lose ships and wonder where they are in relation to myself. I get over the duck fit as I spot No. 8. But I still feel like a kitten on a hot stove.

Racing is an odd thing, I think. If I was up here alone, trying to get speed out of No. 29, I'd listen to that motor and it would scare the pants off me. I'd throttle back. Here I am, fanning out a motor as it's never been fanned out before. If Ortman, Wittman and the boys weren't grinding along with me, building up the thrill of competition—the self-pride of "I can do better than they can"—I'd throttle back, glide into the field and call it a day. But no. I stiffen my neck for another pylon. I ease into the almost vertical gently. Hell, this ship was never meant to carry this load and make sharp turns at 340. No, indeed. I goose the gun a little as I pull the angle out of the wing.

Yes, anything can happen. If you stop to think—but don't think. It's a hazardous profession, all right. Sure you know who's around you? Somebody may make an unintentional maneuver and it's curtains. Pull a strip off the instrument board. If you don't think this is a hazardous profession, you won't last long. You're exploring into speeds never tried before in a closed course race. Where in hell is Ortman? Another duck fit. And

(Concluded on page 70)

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\$500 cash first prize: \$361 color camera, a genuine Curtis Colorscout one-shot camera; \$150 Lerochrome single mirror color camera; \$112.50 Spectra color camera; and many other merchandise and cash prizes.

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\$500 cash first prize; \$250 cash second prize; \$158 Rollei-flex camera; 140 other merchandise prizes ranging from \$62.50 to \$2.50. Enlargers, cameras, exposure meters, flash outfits, tripods, range finders, and many other items.

COMPLETE DETAILS
and entry blank of this giant contest will be found in the

**SEPTEMBER
ISSUE**

**Popular
Photography**
NOW ON SALE

(Continued from page 68)

pretty soon I catch him, go by him, get out in front of him. Now, if I can only stay there. Cylinder head temperature okay. Oil pressure okay.

Say—this is my tenth year chasing pylons. Wonder where Mackey, my running mate, is in old Twenty-five? Remember 1935? Right now, that supercharger is turning around 32,000 r.p.m.'s. How can it take it? Brown roof. Big tree. Ready for the next pylon. Wing up slowly. Ships in the way?

Nice, this Thompson Trophy. None of the others, once having taken it, has ever come back for more. Wonder why? That makes me a veteran. Disqualified, 1933. Won in 1934. The ground crew's sign reads five. I check my adhesive. Five down it is. Motor blew in 1935. Wrecked my plane in the mountains, 1936. Oil temperature okay. Fuel pressure up. Leading until the last lap, 1937, thought I'd missed a pylon, dropped back to third. I'll win in 1938—today—right now.

I have to win. More turns. I'm well out in front. If I can just hold it. If that supercharger'll just keep on taking it. If I don't break an oil line. If I don't break a gas line. If I don't shed a wing. If I don't—oh, hell!

Green roofs, red roofs, pylons, slender trees, more pylons, round and round, not going anywhere. They haven't boxed me yet. They can't box me. I'm gunning out ahead of all of them. Where's Wittman? Another duck fit. There's Mackey. Good old Twenty-five. The blue job. The red job. Ortman with a black fuselage and yellow wings. Round and round . . .

Fuller and Hughes and I. We're the only guys who own our own ships in the high horsepower class. We don't have to split with backers. I don't have to pay off—and it's a good thing because I need every cent. I goose the throttle ahead. This'll be a course record, unless . . .

Twenty-five . . . 26 . . . 27 . . . 28 . . . 29 laps. Now for the last one. The world is whirling, I'm standing still. A shake in the motor? No, not now. Please, not now. One lap to go. Pylon, house, tree, tree, house, pylon. Giddier by the minute and . . . I'm across!

I'll go around again, just to make sure I have not short-changed myself a lap. So I'm around again, down, bucking across the field, taxiing up to the wire-fenced pen to have my picture taken, my hand shaken, the cup given to me and the flowers put around my neck. I'm a wreck. I'm shaking again. I'm sweating under the blue coat. Hard. My hands are trembling. I hope nobody'll see it. I'll hide it with a big smile—forget my jumping pulse—my throbbing head—my aching body—the hellish exhaustion I feel . . .

Pretty soon it's all over. I can go now. Mackey comes in.

"Great work, Roscoe!"

"Well, I made it. Now I can pay off. I can pay off . . ."

"I was worrying about my hotel bill myself," he says.

"Sure. Now I have to get ready for next year."

Sport? Hell.

"Routine Flight"

(Continued from page 36)

Lake Kenka and Hammondsport are over on our right and I remember the history-making flights that Glenn Curtiss made in the first flying boat on that water; the old *Red Wing*. I feel sorry the old *Pioneer* isn't with us to see what has developed from that ancient contraption—the Boeing Clippers, no less. And Hammondsport! The barnstormers used to pay a premium for Curtiss OX-5 engines made in Hammondsport rather than in any one of a number of plants that turned them out by the thousands during the War. They really were better, at that . . .

According to plan, we're due over Buffalo at 2:10. This means we'd better begin descent at 1:55 in order to be over the Buffalo radio range station at 2,000 feet at that time. Company regulation is that let-downs shall not exceed 400 feet per minute and it's time to start down now. No need to roll the stabilizer forward, I can feel the nose getting heavier as the stewardess comes up to ask if we are going to make Buffalo on schedule. She has a man who wants to make a train to Toronto and the time is short for the connection and he is having a fit. The first officer gets the man's bag out and carries it aft to him so he can carry it out himself, saving time. I sneak in a message to Buffalo to have a special cab ready when we land. Maybe I'll be in a hurry sometime myself. As we go down the boost, of course, goes up and horsepower is adjusted for loss of altitude in descending just as it is in climb. Also, of course, the mixture ratio becomes leaner and that has to be watched. The grim square of the prison at Attica is just ahead and we turn slightly to the right. I don't like going directly over those places. A guard once took a pot-shot at me years ago because I didn't know there was a riot going on in the cooler and they were taking no chances.

Here's where we begin to get the twilight of the east leg of Buffalo and the volume is turned down for two reasons. One, the strength of the two signals can more easily be determined and, two, my ears have taken a beating to these many years of listening to this monotony and I hate to be screamed at when at the dinner-table.

Down to 2,000 feet and the First calls Buffalo: "In Range." Buffalo answers with his wind direction and velocity, barometer and pressure altitude, instructions about traffic around the field and the litany about "stay on the runways, avoid the ends and edges." It would be much simpler to put this stuff on a phonograph record (the field conditions, that is) and just turn it on into the mike—we all know what it is and it's never any different.

A left turn into the field, heading for the southwest runway and the order "wheels down" is given. The first officer pushes the lever down and we can feel

(Concluded on page 72)