

ONE TWO



“ONE-TWO”

The story of the Fifth National Air Tour as related

by the winner

JOHN H. LIVINGSTON

President, Mid-West Airways

Corporation



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In the mid-1920s, at a time when there was not even a single road reaching across the United States, air travel was beginning to unite the country. It was during this period that the National Air Tour was first conceived and then conducted, from 1925 through 1931.

The National Air Tours were intended to demonstrate the reliability of air travel and to encourage the development of aircraft and landing facilities. The tours have been called one of most successful promotional events of the Twentieth Century, introducing aviation to millions of people, many for the first time. The National Air Tours flew a total of approximately 30,000 miles, making nearly 200 stops over the seven years of their running.

“Johnny” Livingston, three time tour pilot and 1929 tour winner, wrote this booklet, “One–Two”, for the WACO aircraft company whose aircraft won the tour twice. Johnny takes you there, telling you firsthand his story of the Fifth National Air Tour – that glorious tour of 1929.

Proceeds from the sale of “One–Two” will help support the re-creation of this great event in September of 2003, as the National Air Tour once again “takes to the air” – this time in celebration of the Centennial of Flight and in honor of the pioneers of American civil aviation.

Sincerely,

A handwritten signature in cursive script that reads "Greg".

Greg Herrick, President
Aviation Foundation of America

Additional copies of “One–Two” may be purchased at
www.NationalAirTour.org, or by calling 800-225-5575

Out of the murky drizzle a dripping ship swoops in

*It crosses the line...its mate follows
...and WACO places 1st and 2nd in
the Fifth National Air Tour at Detroit.*

OFF to the west of the Ford Airport a muffled hum is heard. It filters down through low-hung clouds . . . swells into a roar. Then out of the murky drizzle a dripping ship swoops in. It speeds, full gun, across the line. Another follows. And WACO places first and second in the Fifth National Air Tour for the Edsel B. Ford Reliability Trophy.

Twice in Two Years

For the second time in as many years, WACO proves its superior performance in open competition. John Livingston places

first with a perfect score for every lap and a total score of 45,672 points . . . a margin of 7,178 points over the next competing make . . . while Art Davis in the other WACO entry totals 41,108 points to take second place.

These official figures prove beyond dispute that WACO is the ship to own and to fly . . . sturdy, dependable and practical. Flying at top speed with maximum useful load . . . landing within 100 feet and taking off with equal abruptness . . . these WACO "225" Straight-Wings show marked superiority over far more costly aircraft.





Because we thought it would make interesting reading, we asked John Livingston to relate his own version of the Fifth National Air Tour, of which he was the winner. After some little prodding he consented to do it and the result of his efforts is the interesting tale which follows. Our hunch was a good one in asking him to prepare it. See if you don't agree.

Robert C. Reeb

Sales Manager
WACO Aircraft Company

Troy, Ohio, November 25, 1929.

5,000 miles “On Time”

The Story of the Fifth National Air Tour in competition for the Edsel B. Ford Reliability Trophy

by John H. Livingston

I. We Select the Ship

Our preparations for this year's air tour naturally had to start several months in advance. My good friend, Major John Wood, had won the Ford Reliability Trophy for WACO last year and we had high hopes of obtaining a second leg on the trophy. When I was asked to pilot one of the WACO entries, I was thrilled at the opportunity and honored by the selection – the more so because I knew that Art Davis, at the controls of the other WACO entry, would give me plenty of competition, regardless of what performance the other pilots and ships would show.

After careful study of the regulations for this year's tour, particularly the formula by which the “figure of merit” was to be set up, we decided that out of the entire WACO line it was probable that the best showing would be made by the Straight-Wing Model “225,” powered by the Wright Whirlwind



John H. Livingston

J-6 seven cylinder. Our choice was well made, as events later proved.

The two WACOs, which Art Davis and I were to fly in the tour, were taken directly off the assembly line and given only the customary half-hour of flight testing by Dick Young, the WACO engineering test pilot, before we flew them up to Detroit. Other than the installation of a supplementary Aperiodic Compass, a bank-and-turn indicator, and the fairing of the lower-wing butts, my WACO “225” was a standard production job. And I want to say right now that I am in love with that ship. It certainly proved its mettle during that first three weeks after it left the assembly line at the WACO plant.

The “Figure of Merit” Tests

For the benefit of the uninitiated, I might explain that the method of scoring to determine the award of the Ford Reliability Trophy is based upon a “figure of merit,” determined

for each ship by flight tests conducted at Detroit immediately preceding the start of the tour. The successful completion of each lap of the tour, of which there were thirty-two on this year's schedule, adds that "figure of merit" to the score of the entry at each "control" point — providing the pilot covers the lap within the allotted time. In other words, my score for the entire tour would be 32 times the "figure of merit" determined as a result of the preliminary tests at Detroit, *providing* I successfully completed each lap within the allotted time.

This "figure of merit" was determined by a formula which is somewhat staggering to look full in the face, but which isn't so "high hat" after you get acquainted with it. It takes into account the five factors which both theory and practice have shown to be the performance characteristics that make an airplane practical. These are the five factors:

1 *Useful Load* — The greater the amount of disposable load the ship is qualified to carry by its Department of Commerce type certificate, the higher its "figure of merit" becomes. That, of course, is logical for obvious reasons.

2 *High Speed* — The greater the speed at which the ship will travel with full load, the higher the "figure of merit" becomes which also is as it should be.

3 *Time to Take-Off* — The quicker the ship will lift from the ground with full load after the wheels start rolling, the higher this "figure of merit" becomes, because quick take-off is frequently

important on cross-country work — especially in getting out of emergency landing fields.

4 *Time to Dead Stop Landing* The shorter the time (which is to say, the shorter the distance) in which a ship can be pulled up to a dead stop after it touches the ground, the higher its "figure of merit" becomes. I know of no characteristic more important than that in everyday flying. Personally, I feel that minimizing the importance of this factor, as was done in this year's formula, was not justified, as ability to "sit down" in cramped spaces is more vital even than quick take-off. One can generally choose his conditions for take-off, but sometimes has to take whatever he can get in landing.

5 *Engine Displacement* — The less power the ship requires for satisfactory performance the more economical it is to operate. Accordingly, in the "figure of merit" formula, the less the piston displacement of its power plant, the higher its corresponding "figure of merit" became.

The engine displacement, of course, was a fixed quantity — in my case 756 cu. in. for the 7-cylinder Wright J-6.

The Department of Commerce A.T.C. loading also was a fixed quantity, being 972 pounds for this particular WACO, in accordance with its Approved Type Certificate No. 240, which designates 2,600 pounds as the corresponding gross weight of the ship. The regulations provided that full loading be carried for the "figure of merit" tests, but

permitted a 25% reduction in the useful load during the tour proper. Incidentally, however, both Davis and I elected to carry full load throughout the Tour and did so.

You will observe that the three variables in the formula which were to be determined by the preliminary tests at Detroit, were, therefore, speed and the landing and take-off time.

The Speed Trials

Each pilot was permitted to use his own judgment as to the speed he chose to demonstrate in the speed trials. The regulations provided that in order to qualify for a perfect score for each lap flown, the speed maintained must be not less than 85% of the speed which that particular ship demonstrated in these trials. I, of course, wanted to show as high speed as possible in these trials, because the higher the speed the higher my "figure of merit" would become and, consequently, the greater the point score for each lap completed on time. On the other hand, a 15% allowance, in the corresponding schedule which I would be required to maintain, did not allow much latitude for unfavorable head winds and other conditions beyond control.

Consequently, instead of flying the speed course "full out," I picked a speed about ten miles less than top and was clocked four times over the speed course at an average speed, 135.44 m.p.h. Possibly under instructions from the factory, Art Davis was a bit more conservative, and was timed over the speed course at 132.59 m.p.h. Our corresponding

85% required speeds, as set up for each leg of the tour, were 115.12 m.p.h. and 112.70 m.p.h. As a matter of fact, check-up of our log sheets, after completion of the Tour, showed that Davis' average speed for the 5017 miles was 128.1 m.p.h. and mine was only slightly better, 130.9 m.p.h. So you see we were plenty conservative in setting our speeds over the speed course at Detroit.

These speed trials were run off on Thursday afternoon, October 3rd. The "stick" and "unstick" tests for landing and take-off time were scheduled for the same day, but were postponed until Friday for the benefit of several belated entries.

The "Stick" and "Unstick" Tests

Last year there was some dissatisfaction expressed because of variation in terrain, which somewhat affected relative showings made by different ships in the "stick" and "unstick" tests. To insure uniformity of conditions in that respect this year, it was required that all take-offs and landings be made on the concrete runway at Ford Airport. We took off on signal from the judges, in rotation according to the numbers assigned to the entries, and circled around upstairs until our corresponding numbers exposed on the ground signaled each pilot, in turn, to come in for his landing.

Art Davis was piloting entry No. 8 and my number was 26. Consequently, he took off ahead of me and set marks for me to shoot at, which I thought would be impossible to equal. He took his position in front of the judges, locked his brakes

while he revved up the motor and got his tail off the ground, and then shot up like a rocket almost immediately upon release of the brakes. I was simply astounded! I never in my life saw anything like it and I won't forget for a long while the thrill it gave me. He was timed by the three judges in 4.8 seconds from the time he started to move forward until he left the runway. If you don't think that's a short space of time, count off five seconds by the second-hand on your watch.

Anyhow, with such a splendid mark to shoot at, I did my utmost and did manage to succeed in bettering Art Davis' mark by a split second and set a new record time for this "unstick" test of 4.4 seconds. The corresponding distance to take-off is appreciably less than 100 feet!

Art, likewise, gave me a real mark to shoot at when he came in to land in front of the judges on the "stick" test and was timed in the almost unbelievable figure — 3.7 seconds, from touch of wheels on the runway to dead stop. Again I set my teeth; landed directly in front of the timers

and was clocked in a new record figure of 3.4 seconds — also well within a distance of 100 feet on the concrete runway.

It is interesting to note, as I found out by experiment beforehand, that "pancake" landings, which were notably effective in last year's event, did not permit as short a landing to be made as did a perfect three-point landing.

The Lucky Number "1427"

When the "figure of merit" was computed, based upon the results of our speed and "stick" and "unstick" trials, it developed that my ship qualified with the highest "figure of merit" of all competing entries, with Art Davis' "figure of merit" second on the list.

It is a curious coincidence that my "figure of merit," 1427, is exactly the same as my Department of Commerce Pilot's License No. 1427. As it turned out, that coincidence was a happy omen.



II. WE'RE OFF

We took off from Ford Airport at Dearborn Saturday morning, October 5th, on our sixteen-day journey, that was to swing us around a circuit of over 5,000 miles before we returned to this same port at the close of the tour. We were flagged off at one minute intervals, beginning at 10 o'clock, taking off in numerical order according to entry number.

This first hop was just across the border to Windsor, a matter of only fifteen miles by the air line. It was such a short hop that it didn't deserve the dignity of being scored as one of the 32 legs of the tour. But anyhow it was. The short distance severely penalized the big multimotored jobs especially, because it gave them scant allowance for their deliberate take-off and wide sweeping turn. The distance air line was only 15 miles, mind you, and each entry had to cross the finish line on this leg, as on

all others, in 85% of the indicated top speed of the ship, as determined by the speed trials two days before. I was permitted just seven minutes forty-nine seconds from the time I was flagged to start until I was clocked in across the finish line at Windsor. In other words, in golf parlance, it was just a "short mashie" tee shot. We had some "par five" holes later on though!

Anyhow, I lost no time swinging around into a bee line for the airport at Windsor, made a steep climbing turn around the water tank at Ford Airport, gave 'er the gun and was timed in at Windsor in just five minutes and twenty-five seconds.

We had lunch at Windsor and took off for Toronto, which was to be our first night stopover. The take-off here, as at all succeeding noon control points, was in order of arrival that is, first in, first out. From night control points, on the other hand, the order of take-off was reversed: last in, first out. This method was used thruout the Tour, with the exception



Contesting planes at the Ford Airport at the start.

of the very last lap out of Kalamazoo, where the take-off order was based on the point standing of the contestants. Art Davis and I were generally among the last to take-off each morning, therefore, as we were commonly among the first five in flying time from point to point. This provision was made wisely because it tended to keep the ships bunched up better in their arrivals at each port.

We had a favoring tail wind to Toronto so we could take things easy and enjoy the beautiful country with its rich farmlands, which gave no hint of the forbidding territory to be encountered beyond Toronto. As a matter of convenience, I calculated my speed along the way from measured points on my map, on the basis of two miles per minute, checked against my stop watch. In other words, I just made sure as I went along that I was not falling below 120 miles per hour at any time and was content to hold that pace. I figured on 103 1/2 minutes, by way of example, for the 207 miles from Windsor to Toronto and was clocked in just one minute less than that, which gave me about five minutes lee way on maximum time allowed for perfect score.

The excitement always incident to the first day of an event of this kind, seemed to put me in no mood to take advantage of the hospitality of our hosts at Toronto, so I, for one, turned in early, and I noticed that most of the boys seemed to feel the same way about it.

The next morning, which was Sunday, we took off from Toronto for our midday control at Ottawa,

228 miles to the east. We had a favoring tail wind again, so that in spite of keeping throttled way down, I arrived at Ottawa about 26 minutes ahead of schedule, having the second-best elapsed time for that leg.

Reliability on Trial

The country we passed over that day, all the way to Montreal, which was to be our night stop, was not the most ideal flight course that could be imagined, but it is a tribute to the reliability of present-day engines that with forty ships or so flying along, with or in the tour, all came thru without incident. There were miles and miles of wilderness to be passed over where a landing would have been quite a trick. My mind was at ease, however, as I knew from the trials at Detroit that my WACO could be landed in approximately a 100-foot opening.

Ottawa was merely a lunch stop and at two o'clock the tour got under way again on the 112-mile jump to Montreal. We still had our favoring tail wind, but ran into increasing cloudiness and found a definitely dismal sky at Montreal, which was the forerunner of showers during the night.

This stands out in my memory as being by all odds the longest day of the Tour. We were routed out for 5:30 breakfast at Toronto and had to get by with only a hurried lunch at Ottawa until dinner at almost 10 o'clock that night at Montreal. The traffic jam at Montreal was a caution to evil-doers. There were over 30,000 people on hand at St. Hubert's Airdrome to witness the

arrival of the Tour. Having flown the 112 miles from Ottawa to Montreal in about 54 minutes, I was 3 1/2 hours covering the seven miles from the airport to the hotel. Three of us managed to reach the hotel by 7 o'clock, but most of the boys didn't get in until several hours later than that. So the banquet scheduled for early in the evening was postponed until 9:30 and our gnawing innards actually received attention as the clock struck 10.

We had a rather amusing experience getting our transportation from the airport at Montreal. At most of the stops provision had been made for the tour personnel to ride in "official" cars. The one we picked out for ourselves at Montreal proved to be some enterprising taxi driver who had apparently bootlegged his "official" sign in order to get into the field. Anyhow, he got \$6 out of us for taking us in at the dazzling speed he was able to show, which was just about half the speed of a comfortable stroll on foot. However, we beat the other boys in at that, so maybe it was worth it that we happened to pass up the official bus, which had been provided for us.

"BEWARE!"

Monday morning we had 206 miles to cover, back to the States for the noon control at Portland, Maine. The referee, Frank Hawks, had sounded two warnings. The night before it was with regard to the corps of seventeen customs officials, which had been duly provided, according to advance information, for the intervention of contraband when we would land at Portland.

The warning that morning had to do with the weather, which was reported bad to the southeast, although visibility was good at Montreal. This was not particularly pleasing news as that leg of the Tour was known to be over perhaps the most forbidding territory that had to be covered in the entire Tour.

Captain Hawks took off ahead to reconnoiter the conditions and report back from Portland. He reported that conditions were not comfortable but were passable, so the tour got underway following his report, only about fifteen minutes late. All went well until we were well over the mountains in the thick of the worst country, when a combination of snow, fog, rain, and forest fire smoke conspired to do their worst to make visibility exceedingly bad. In the early part of the flight I had climbed to 6,500 feet, both to be sure of clearance over the mountain peaks and because I could fly at that height between two layers of clouds with enough holes in the layer underneath to give occasional glimpses of the ground for correction of the course. The clouds closed in on us, however, so that we had to drop down below the mountain tops and tear down thru the valleys in order to keep in sight of the ground. The experience was disastrous to perfect scores on the part of a great many of the contestants.

We landed at Portland in a light rain which, however, did not in the least affect the vigilance of the swarm of customs officials. Certain allegations were privately expressed regarding the fact that the official Press plane failed to show up at Portland at all. They established a

seemingly hole-proof alibi, however, and of course I believe it implicitly.

The unfavorable weather at Portland looked worse in the direction of Springfield so the take-off was postponed to await the report of Hawks, who had been tardy in getting away himself. We flew thru a series of showers, encountering fairly brisk quartering headwinds, which proved to be disastrous again to perfect scores. This was the only leg in the Tour on which Art Davis failed to get a perfect score. He made a miscalculation in his timing as he set his pace for the trip and discovered his error too late to correct it, being timed in at Springfield one minute forty-five seconds late. It was certainly unfortunate for Art and has caused him no end of chagrin, as he otherwise would have had a perfect score for the entire Tour.

I experienced no difficulty myself, maintaining an average of 128 m.p.h. for the 152 mile hop, being clocked in with eight minutes to spare. I was not flying full throttle and could have done 10 m.p.h. more, if necessary.

We Thank You!

The overnight stop at Springfield was one of the most delightful experiences anywhere on the Tour. At least I felt that way about it and apparently most of the pilots were impressed as I was. The arrangements were excellent to the last detail. "Official" cars (correctly so this time!) were at the tail of our ships to take care of our baggage and properly direct us, the minute we

taxied around into line after landing. After the banquet, theatre tickets were distributed and we were entertained with moving pictures which had been taken that same afternoon as the planes landed at Springfield, had been rushed to Boston by air for developing and returned to the theatre at Springfield for showing that same night.

The next day, which was Tuesday, we were scheduled for only about 200 miles of flying, slightly over 100 miles to Long Island and slightly less than 100 miles from there to Philadelphia. Visibility was excellent and there was only a slight cross head wind, which was not at all damaging to scores. The flight to Roosevelt Field at Minneola was without incident, except for the fact that there was quite a bit of water to fly across. I should estimate the distance was about 30 miles across the Sound to Long Island and about the same extent of "water hazard" on the next leg from New York to Philadelphia. This hop in the afternoon to the new Central Airport at Camden brought us our first experience of really rough air. A fairly strong head wind was encountered, which made it necessary to fly low in order to maintain schedules, and that increased, of course, the roughness of the going.

The Scorers Get a Rest

After the overnight stop at Philadelphia, Wednesday morning we set out for Baltimore, ninety miles away. With fair flying weather and plenty of landmarks, every entry in the Tour registered a perfect score



On the line at Roosevelt Field.

— the first time that the vote had been unanimous. This was a vast relief to the “firm” of Schiosser & Crocker, official accountants and score keepers plenipotentiary of the Tour, whose work was greatly simplified thereby.

The afternoon hop from Baltimore to Richmond brought with it the first real test of navigating skill. For the last seventy-five miles there was nothing to check by but the compass, there being no land marks to correct the course by. Flying weather was ideal and I set down without incident in the narrow L-shaped field at Richmond. Richmond, by the way, was another place where we had an exceptionally fine reception.

Thursday morning we hopped off for Winston-Salem, a distance of 183 miles, and in the afternoon pushed on for Greenville, S. C., the twelfth leg of the Tour, distance 152 miles. Again there was not much to check the course by on the route, so navigation had to be mostly by

compass. The field at Greenville is none too good and was not correctly spotted on our maps, which caused some little confusion to most of the pilots in locating it. Flying conditions were first rate with a slight tail wind and I had no trouble maintaining my record of perfect scores. The engine continued to perform nobly, as it did throughout the entire Tour. We did no work on it whatever other than periodical checking of the valves, greasing the valve rockers and cleaning the oil and gas strainers.

The First Trophy

Friday morning we took off from Greenville for Augusta, a short hop of exactly 100 miles. The weather, up to this point, had been unseasonably cool, so the balmy air which greeted us at Augusta was quite welcome. At Augusta a local jeweler presented me with a wrist-watch, for the distinction of being the leader of the Tour up to that point.



The half-way point — Atlanta.

Weather reports at Augusta warned of a fog reported coming in from the ocean at Jacksonville, which was to be our Friday night control. Captain Hawks was late getting away and left orders to await his report of flying conditions, which we did.

While we passed over a considerable amount of bad country during the Tour, in my estimation the stretch from Augusta to Jacksonville was the worst of all, being considerably more hazardous even than the trip to Portland over the mountains. Heavy rains in the South had overflowed the river banks all along the route, so that the fields were under water sometimes thirty miles at a stretch. Flying into a head wind, we had to keep down low in order to maintain schedules, and that didn't improve matters any. On an ordinary cruising trip, we would

have played safe by keeping altitude, but flying against tight schedules such as we were, we had to keep low in order to maintain speed. All the ships came through O. K., reflecting again the splendid dependability of present-day power plants. A storm was blowing up, as reported, and the air was quite rough, but visibility was not bad and I clocked in at Jacksonville with twenty minutes to spare on my time allowance for the 210 mile trip.

It was at Jacksonville that Art Davis and I finally got together. As I mentioned before, his entry number was 8 and mine was 26, so that when we originally took off at Detroit, with intervals of one minute separating the ships, I started out thirteen minutes behind him. At Jacksonville we came in together and decided that thereafter we would continue that way. We alternated positions, the first one off at each control holding back to wait for the other so that we would cross the line at the next control with only enough space separating us to allow the timers to separately check us in.

Saturday morning we took off from Jacksonville for Macon, Georgia, over country that was much more pleasing to fly over, with numerous landing places spotted along the way. An overcast sky out of Jacksonville cleared up after about sixty miles and we had clear weather for the balance of the 200-mile hop to Macon. The afternoon hop from Macon to Atlanta was a short one of only 72 miles, with good flying conditions and fast speeds generally prevailing. This was the sixteenth leg of the Tour and marked the half-way point, so we

were scheduled for a one-day rest at Atlanta and stayed there from Saturday afternoon until Monday morning.

The Day of Rest

As it turned out, Atlanta proved to be a rather unfortunate selection for the Sunday layover. An important football game had overcrowded all the hotels. Our reservations were not ready when we arrived and we were sent to scattered quarters. Pilots and mechanics were completely shuffled in transportation as well as in hotel reservations, and it was hard to locate anybody. One of the lady pilots drew a reservation with one of the mechanics and had a gosh-awful time convincing the management that the arrangement should not stand.

Sunday the traffic jam at the Atlanta Airport was almost

impassable. We went out to the field in the afternoon and found the crowd milling about with delicious abandon, autographing the ships, scratching matches on the doped fabric and otherwise carrying on in such disturbing fashion that we cleared out and went on back to our hotels for our peace of mind. We spent the remainder of the day in prayer, and apparently our prayers were answered, because the ships were at least able to fly when we went out in fear and trembling Monday morning to look them over. Why, oh why, will people insist on maltreating airplanes the way they do at every opportunity? They wouldn't write all over an automobile that way and get away with it. But since it is such a common failing, adequate protection should be furnished at every stop on these Tours, instead of the almost total absence of guards experienced at Atlanta.

(continued on page 20)





The Ford Reliability Trophy and its winner, John H. Livingston

John H. Livingston, who was the winner of the Fifth National Air Tour, hails from Cedar Falls, Iowa. He started in as an airplane mechanic at Waterloo, Iowa, in the spring of 1919. He is practically a self-taught flyer. He did his first flying in the winter of 1920. His real piloting experience started with barn-storming work in 1921. In 1922 he became Field Operations Manager for Mid-West Airways at Monmouth, Illinois. This was his headquarters until September, 1928, when he bought out Mid-West Airways Corp. and opened two additional fields at Waterloo, Iowa, and Aurora, Ill. He made the Aurora field the headquarters for the combination.

His First experience in the National Air Tour was in 1926, when he placed fourth because he did not have the Wright "Whirlwind" power plant and was not equipped with brakes on his landing gear. Entries so favored cleaned up on the first three places that year. In the fall of 1928, he won the "Whirlwind" Class Transcontinental Air Race from New York to Los Angeles, in a WACO. This was his first major victory in a national air event. He also captured the Sweepstakes Trophy and won all the lap prizes. The Reliability Tour was the only national event he took part in this year. However, in nine sectional meets in which he participated in 1929, out of 38 events which he entered, he took 23 first prizes, took second place 13 times, was third once and fourth once.

John Livingston is a great pilot... and a great fellow.

From the log of the WACO entries



Pilot John H. Livingston D. of C. License 1427 T Plane: WACO "225" S-W D. of C. License NC604 N	Pilot Arthur J. Davis D. of C. License 372 T Plane: WACO "225" S-W D. of C. License NC517 M
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Leg No.	Control Start	Control Finish	Miles	Wind*	Time	Max.	Time	Max
					Hrs., Mm., Sec.	Time Allowed	Hrs., Mm., Sec.	Time Allowed
1.	Detroit	Windsor	15	T	0:05:25	0:07:49	0:05:30	0:07:59
2.	Windsor	Toronto	207	T	1:42:39	1:48:00	1:27:46	1:50:00
3.	Toronto	Ottawa	228	T	1:23:12	1:59:00	1:30:22	2:01:00
4.	Ottawa	Montreal	112	T	0:53:40	0:58:00	0:45:31	1:00:00
5.	Montreal	Portland	206	0	1:32:30	1:47:22	1:40:00	1:49:40
6.	Portland	Springfield	152	5	1:11:37	1:19:13	1:22:40	1:20:55
7.	Springfield	New York	112	H	0:49:45	0:58:22	0:50:47	0:59:38
8.	New York	Philadelphia	96	H	0:46:55	0:50:02	0:45:49	0:51:07
9.	Philadelphia	Baltimore	90	T	0:41:28	0:46:54	0:41:18	0:47:55
10.	Baltimore	Richmond	128	0	0:59:34	1:06:43	1:00:19	1:08:09
11.	Richmond	Winston-Salem	183	0	1:24:18	1:35:23	1:18:33	1:37:26
12.	Winston-Salem	Greenville	152	0	1:08:43	1:19:13	1:06:38	1:20:55
13.	Greenville	Augusta	100	S	0:43:02	0:52:07	0:43:34	0:53:14
It.	Augusta	Jacksonville	210	H	1:29:32	1:49:27	1:30:22	1:51:48
11.	Jacksonville	Macon	200	S	1:32:12	1:44:14	1:33:07	1:46:27
16.	Macon	Atlanta	72	S	0:32:27	0:37:31	0:33:33	0:38:20
17.	Atlanta	Murfreesboro.	191	H	1:34:09	1:39:33	1:35:04	1:41:41
18.	Murfreesboro.	Cincinnati	246	H	1:59:29	2:08:13	2:00:30	2:10:58
19.	Cincinnati	Louisville	87	S	0:42:32	0:45:21	0:43:31	0:46:19
20.	Louisville	St. Louis	261	H	2:04:20	2:16:02	2:05:21	2:18:57
21.	St. Louis	Springfield	183	H	1:31:26	1:35:23	1:32:51	1:37:26
22.	Springfield	Wichita	215	HO	1:47:25	1:52:03	1:46:27	1:54:28
23.	Wichita	St. Joseph	192	T	1:31:48	1:40:04	1:32:46	1:42:43
24.	St. Joseph	Des Moines	145	T	1:05:15	1:15:34	1:06:16	1:17:12
25.	Des Moines	Cedar Rapids	99	T	0:41:59	0:51:36	0:42:58	0:52:42
26.	Cedar Rapids	St. Paul	219	T	1:29:48	0:54:09	1:30:48	1:58:36
27.	St. Paul	Wausau	171	0	1:20:22	1:29:07	1:25:34	1:31:02
28.	Wausau	Milwaukee	160	S	1:17:40	1:23:23	1:18:11	1:25:12
29.	Milwaukee	Moline	174	S	1:22:15	1:30:41	1:18:02	1:32:38
30.	Moline	Chicago	149	S	1:09:21	1:17:39	1:05:00	1:19:20
31.	Chicago	Kalamazoo	142	S	1:05:09	1:14:06	1:05:15	1:15:36
32.	Kalamazoo	Detroit	120	S	0:57:07	1:02:32	0:54:55	1:03:53

Total 5017 miles Avg. 130.9 m.p.h. Avg. 128.1 m.p.h.

* — Tail Wind, O — No wind, S — wind, H — Head wind.



Lt. Arthur J. Davis is a war-time pilot, having taken his flying training at Kelly Field, Texas, in 1918-19. After the war, he went to work for the Michigan Aero Co. of East Lansing, Mich., doing pilot duty on barnstorming trips in Michigan and Canada. After two years with this outfit, in 1922 he formed his own company, Michigan Airways at East Lansing, which he has operated with marked success for the past seven years.

“Art” Davis is one of the best known “race pilots” in the country. He seldom passes up any air meet in the territory from Sioux Falls, S. D., to Miami, Florida and generally “cleans up.” Out of 17 meets he engaged in so far this year, he has taken 37 first prizes and 15 second prizes...a remarkably enviable record.

Last January Lt. Davis made a perfect score in a dead-stick landing contest, which consists of cutting the motor dead at 1000 ft. altitude and landing on a mark on the ground. Perfect scores in such events are as rare as a “hole in one” in golf.

In addition to his pilot’s Transport License No. 372, Lt. Davis holds a Mechanic’s License, covering both airplane and engine work.

His hobby is collecting Indian relics, his collection being one of the best in the country.

Everybody knows “Art”...and his Al Jolson gloves.

IV. THE SECOND HALF

Atlanta was the half-way point in number of legs, but it was not the half-way point in distance. The schedule for Monday was 191 miles to Murfreesboro, Tenn. and 246 miles to Cincinnati. This marked the beginning of the comparatively long jumps on the second half of the Tour. The flight to Murfreesboro was scenic but almost entirely over the mountains. As on the other legs over unfavorable terrain, we again encountered head wind and had to fly low in order to maintain schedules. I think it was on this lap that somebody accused me of "rolling the wheels on the tree-tops." Of course I couldn't pass up the opportunity to reply in kind, and to deny the allegation with the statement that I was keeping the wheels locked to prevent that.

There was a very large crowd out to greet us at Murfreesboro, where we landed about noon. I left the ship with my mechanic for gas and oil and went on up to have my log checked for exact timing. We strolled into the club house for lunch and had just begun to eat when all the pilots were called out on to the roof of the club house for a special luncheon which had been arranged with a co-ed for each pilot as a luncheon partner. The demands for food were so great, due to the crowd, that we sat up there on the roof without food from 12:30 until 1:40. It so happened that I was one of the first scheduled to take off so I had to break away without much to eat.

When I got back to the ship I found that it had not been gassed up and I "saw red" for a while, although I managed to get out of the predicament with better luck than some of the other pilots had. The occurrence was a disgrace. The cause of the mix-up was that Shell had the gas rights for that field and would not permit Texaco and Standard Oil to provide any of the gas, although both had tank cars at the field awaiting admission which was refused. Captain Hawks was using Texaco in his ship and the Standard Oil ship also would, of course, use no substitute, so they both had to go out of their way to Nashville for gas, and the result was that Hawks arrived at Cincinnati after the first Tour entry had arrived there. Post was the first man in at Cincinnati and he had to time himself, an occurrence which gave him no little amusement.

To get back to my story, Shell had only two trucks on the field at Murfreesboro to service those forty planes. With only fifteen minutes to go until my signal to take off, and the truck driver in altercation with a flock of pilots, all clamoring for service at once, I was in a stew. With one exception, which we will come to later, my perfect score was in greater jeopardy there than it was at any other time. I did manage to get away just in time, but some of the boys were less fortunate and the result was unjustly reflected in their scores.

When we arrived at Cincinnati we were greeted by a number of the executives from the WACO plant who had flown down from Troy. President Brukner, Vice-Pres. Brutus and Sales Manager Lees, as well as

various others from the plant were on hand at Lunken Airport and we had a pleasant talk-fest at the hotel that night.

Tuesday morning a chilly fog greeted us at the field as we prepared for the short hop of 87 miles to Louisville, to be followed that afternoon by the longest leg of the Tour, 261 miles from Louisville to St. Louis. The fog was burned off by the sun just before the scheduled starting time at ten o'clock. We had good weather all day with a light wind, and reached St. Louis in the afternoon without incident. O'Brine in his Curtiss-Robin, however, bumped into the old "home-town jinx." He had trouble on the way and arrived late for the reception which had been planned for him at St. Louis. It was his first imperfect score and a tough break.

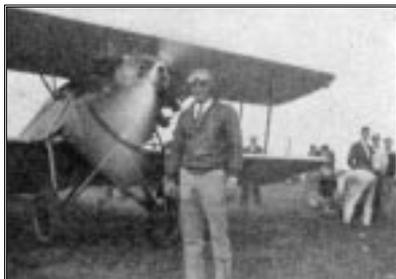
Speaking of "Jinxes"

Wednesday morning we took off for Springfield, Missouri, and we had a repetition of the disastrous effect on perfect scores that was experienced on the trip to Springfield, Mass. By unanimous vote of all contestants, all cities called Springfield are to be left out of future itineraries. This 183-mile hop from St. Louis was the toughest leg of the whole Tour to retain a perfect score. I arrived at Springfield by the narrowest margin of any lap, having only about four minutes to spare. The first thirty miles had to be flown entirely by compass. Before I could pick up a point by which to check my time, I found that I had not allowed sufficiently for the strong head wind and was a minute and a half late at that point. The country was rough

and the air was rougher. The air pockets were so sharp the gas was thrown into the top of the tank by the bumps, forming a vacuum in the feed lines and causing the engine to miss. Only nine of the contestants, including Art Davis and myself, managed to check in "under the wire" at Springfield.

In the afternoon the 215 miles to Wichita was much more pleasant both as to the weather and as to flying country. The head wind had abated somewhat so practically everyone clicked off the miles across the Kansas plains and arrived at the new municipal airport at Wichita on schedule. In deference to the home port of the Cessna entries, they had been allowed to take off first on this leg. Post, in his Lockheed, therefore, took off from Springfield five minutes behind Lacey in the fastest Cessna, and they staged a neck-and-neck race into Wichita.

Thursday morning we took off for St. Joseph, Mo., and I was warmed up by the fact that we were heading back up for my home country. The weather man also provided for this warming up business that day. A slight tail wind and the balmy air made the day pleasant for the 192-mile flight to St. Joe and the



"We" at Des Moines

145-mile flight in the afternoon to Des Moines. I got a warm reception at Des Moines, as my gang from the Waterloo branch of Midwest Airways came down in force to make things pleasant for me. Des Moines, by the way, seems to be the most enthusiastically air-minded city that we touched on this Tour. The Des Moines Register carried whole pages of publicity for the Tour.

Favorable winds and excellent flying conditions brought everyone of the ships across the 99 miles from Des Moines to Cedar Rapids the next morning with perfect scores. So once again the scorers had an easy job for a change. At Cedar Rapids, however, bad storm conditions were reported coming into St. Paul, so we took off an hour ahead of schedule in order to beat the storm. Maybe it was just as well that we took off ahead of time or we might not have taken off at all, as some careless sightseer set the high grass on fire in a parking field next to the airport and there was much excitement. With the aid of a helping wind, everybody succeeded in arriving at St. Paul before the threatened storm broke.

“Solar Plexus” Weather

Saturday morning out of St. Paul to Wausau the Tour almost got a knock-out blow to its reliability complex. Flying conditions were good at St. Paul and good weather was reported also at Wausau, 171 miles away. So we took off without premonition of trouble. About 75 miles out the cloud layer settled, so Art Davis and I, flying the two WACOs, settled with it. About a hundred miles out, flying along over the trees and making good time with a friendly tail wind,

we spotted four or five airplanes in a field down below, one of them being the red Texaco Lockheed of Captain Frank Hawks, the Tour referee. We circled the field to find out what it was all about and Hawks signaled us to come down. He reported conditions impassable ahead and cautioned us to wait until the fog lifted.

I was in a quandary. If I stalled around on that field waiting for a break, my record of perfect scores would go glimmering and I hated to see that happen. Frank Hawks was duly sympathetic, but could offer only the condolence that it was “just too bad.” I had such a commanding lead that I could sacrifice something on my score for this lap and still win the Tour. But I did want to retain that record of perfect scores right through if at all possible.

The decision was important. I did not want to take any foolish chances of cracking up the ship, but I did hate to sacrifice my perfect score. I felt like Casey at the bat. If I got away with it, I would be the hero but if I “struck out,” I would be the goat. However, there wasn’t any time to debate the matter. I had to decide right away either to do it or not to do it. I decided to chance it, relying on my bank-and-turn indicator, the compass which I knew I could depend on, and my previous experience in blind flying. I found the fog had lifted a trifle and went on in, skimming the tree-tops and following a hard road parallel to the course, which showed faintly white through the mist. After about thirty-five miles of this, quite abruptly I emerged and found good weather, as reported, going into Wausau. Davis waited a matter of five minutes or so after I had taken off and finding that



(All photos courtesy of Aviation Magazine.)

I apparently was able to get through, went on after me and both of us succeeded in arriving within the allowable time.

If past experience had given us absolute confidence in the accuracy of the weather reports, we could have flown over the top of the fog by compass course, having the assurance that conditions were good for landing at the other end of the leg. At least one of the pilots, to my knowledge, did that, and of course experienced no difficulty whatever in negotiating what was such a disturbing flight to the rest of us.

Wausau was the home of Major John Wood who had flown his Waco to victory in last year's Tour. The misfortune which had befallen him on his attempted non-stop flight from Los Angeles to Cleveland at the time of the air races this Fall, put something of a damper on our spirits at Wausau. An informal private luncheon had been arranged there for several of us who had been close friends of Johnny Wood.

"It Made Milwaukee Famous"

The 160-mile hop from Wausau to Milwaukee that afternoon was

traversed under favorable flying conditions and there were practically no imperfect scores registered. Very pleasant arrangements had been made for our entertainment at Milwaukee Saturday night and an enjoyable evening was had. The committee in charge, whether from past experience or by a flash of inspiration, seemed to know what most pilots like. The Hamilton Propeller folks also distributed clever paper knives, in miniature of the Hamilton Steel Propeller, with our names inscribed on them.

Sunday morning when we left Milwaukee for Moline, there was a slight drizzle at the start, but I experienced no trouble in covering the 174-mile hop. At Moline I had another pleasant reception from the



The gang from our Monmouth Field met me at Moline.

boys from our Monmouth field. Sunday afternoon we turned about and flew back East to Chicago, the last overnight stop. The arrival of the Tour featured the official dedication of the new Curtiss Airport at Glenview. Seasoning and minor refinements will, of course, improve the field and will make it unquestionably one of the finest in the country. My old friend "Shorty" Schroeder has done a splendid job at whipping it into shape. The novel hangar which has been erected there is a model for airport usage.

The only handicap that the new Curtiss field has is the common one of relative inaccessibility from the center of the city. There was a big crowd out for the dedication of the airport and another severe traffic jam ensued, which kept the Tour personnel from arriving at the hotel for the scheduled dinner until after eight o'clock that night. However, I missed all that by flying to my home port at Aurora, in one of our own ships which had been sent over to greet me

The Last Day!

There was considerable suppressed excitement as we prepared for the take-off from Chicago on the last day of the Tour. The morning hop was 142 miles to Kalamazoo. Bad weather was reported to the East and the take-off was delayed slightly to receive the advance report of Frank Hawks. We had the option of flying the air line, which took us 65 miles across the lake, or taking the benefit of a slight allowance in mileage for skirting around the edge of the lake. The allowance was not sufficient to offset a quartering head wind, so I



Congratulations from Major Young

again abandoned conservatism in favor of my record of perfect scores and struck out directly across the lake. Visibility was good until about thirty miles out of Kalamazoo and though it continued to get more hazy, it was still possible to see for perhaps half a mile.

After luncheon at Kalamazoo, Hawks again went on ahead with instructions to await his report. It was raining at Detroit but Frank reported that conditions were barely passable, so we took off on schedule. It was a trick of fate that the very last leg of the entire Tour should present the worst flying conditions encountered anywhere. Had it not been the last leg with attendant ceremonies arranged at Detroit, it is quite probable that the planes would have been held overnight at Kalamazoo. As it turned out it was just as well that we went on through, because conditions got worse and we were all weather-bound at Detroit for several days after the conclusion of the Tour.

The take-off from Kalamazoo on this last leg was in order of our standings, so I was flagged off first, with Art Davis in the other WACO one minute after me, the Ford Trimotor third and the giant Curtiss

Condor fourth. Lee Schoenhair, in the Lockheed, came back just as I took off, in order to report conditions ahead, but I couldn't wait for his report as I had the flag and had to proceed without assurance as to exactly what I was running into. We struck the rain before we got to Jackson, but came on through over the tree-tops with visibility not much greater than an average city block. Again the fact that the nearly forty airplanes in the entourage all came through without incident was a tribute to the dependable performance of the engines. It had rained all day at Detroit and the field at Dearborn was so soggy that all the ships got pretty well smeared up taxiing in after landing.

But I didn't care about the rain. I was tickled as a kid – 'Singin' in the rain.' I had successfully maintained my perfect scores on every one of the thirty-two laps of the Tour.

A reception and dinner was arranged at the Ford Airport Dearborn in a decorated hangar. You've heard about the nineteenth hole, haven't you? Well, I had some little difficulty negotiating this particular one because it involved a speech (?) of acceptance of the Edsel B. Ford Reliability Trophy, which was officially presented to me at that dinner, in token of the winning of this Fifth National Air Tour.

V. FINAL IMPRESSIONS

Whenever a new job is put on the market, regardless of the past reputation of the manufacturer, there is always at least some little

skepticism among pilots as to how that new ship will prove out in actual service. I will admit that I had something of that feeling before the tour started. I was flying one of the first ships off the production line, of the new WACO "225" Straight-Wing built around the new J-6 (7-cyl.) Wright "Whirlwind." I want to say right now that this combination of airplane and power plant proved itself in this Tour to be one of the best ships, from the point of view of all-'round performance, that has ever been built.

This WACO "225" Straight-Wing is as sweet and untiring to fly as any I ever took off the ground. And, in my opinion at least, has convincingly demonstrated that it is an even greater engine than its famous predecessor, the Wright J-5.

I found it of interest to calculate the "figure of merit" in accordance with this year's formula, based on the specifications and performance of the WACO which won the tour the preceding year. Last year's winner would have placed sixth in this year's ratings instead of first, as it did easily last year. That gives positive indication of the refinement in design which all the aircraft entered had undergone during the past year, and is particularly impressive of the improvements in the winning WACO this year over the WACO which won last year.

My margin of lead was even greater than Johnny Wood had last year. Piloting had nothing to do with that margin of improvement. The difference was in the performance of the WACO "225," which I flew, over the J-5 WACO "Ten," which was Wood's mount last year. The margin

of victory indicates that WACO design characteristics had advanced even more than the general average of improvement. On all five factors which entered into the “figure of merit,” the WACO “225” showed improvement over the figures of the winning WACO last year: the useful load was greater; the speed was higher; landing and take-off time were both shorter; and the engine displacement of the 7-cyl. “J-6” is less than that of the old 9-cyl. “J-5,” notwithstanding the higher speed and greater useful load of this new WACO.

I won’t forget in a long while the impression this WACO made on me in the “stick” and “unstick” tests at Detroit. I never in my life saw anything like it. That an airplane can take-off with such skyrocket abruptness and be landed in such an incredibly short space — both tests being made with full load — is a marvelous thing to me.

Time vs. Distance

Because it is the only feasible way to accurately measure and compare landing and take-off performance, these factors are measured in time rather than in distance in setting up the “figure of merit” of the entries in the Ford Reliability Tour. Because the official performance of the WACO “225” Straight-Wing in the “stick” and “unstick” tests is measured in number of seconds and not number of feet, I have been asked what the corresponding distance would be.

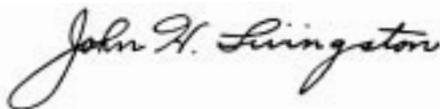
In order to settle the question with a couple of the boys who put it to me at our Monmouth Field, I made a bet with them that if they would chalk

off a ring, 100 feet in diameter, I would take-off and land within that 100-foot circle. Somebody produced a 50-foot steel tape and instead of drawing the circle, we simply had a man stand at each end of that tape. I brought the ship up even with the first marl, locked the wheels and revved up the engine as in the “unstick” test at Detroit, released the brakes when the tail came up, and was off the ground in two-thirds of the 50-foot distance to the second man. When I came in for the landing, I sat down again even with the first man and pulled up to a dead stop 32 feet from him. I had miscalculated a trifle and had to float in for that landing, at that. I had previously, that same day, pulled up to a dead stop in five feet by actual measurement from the spot where I made a perfect three-point landing! But, of course, all this was not on a hard surface runway such as we were restricted to at Detroit.

To my mind the practical value of this astonishing performance in landing and take-off is of the greatest importance. It adds immensely to the ease of mind of a pilot in flying over forbidding territory, if he knows that he can sit down and take-off again in such a short distance. Every pilot of much experience in cross-country flying has had occasional trying experiences in getting in and out of tight places. I know of nothing which contributes more to the practical value of an airplane than the astonishing ability of this WACO “to park on a dime.”

Believe me, this WACO “225” Straight-Wing is a great ship.

Certainly I sell ’em. Why shouldn’t I? I’m sold on them.



Excerpt from “Aviation”

November 2, 1929

“As could be safely forecast at the event’s beginning on October 5...the 1929 National Air Tour, and the Edsel B. Ford Reliability Trophy, plus the \$2500 cash prize that goes with it, went to John Livingston, pilot of a WACO Straight-Wing biplane, powered by a 225 h.p. Wright engine. Livingston’s ‘figure of merit’ 1427.27, coupled with the fact that he flew every one of the Tour’s 32 legs within his scheduled time, made it impossible for any contestant to best him....

“With no intent to detract from the enviable ability of Mr. Livingston to navigate his ship over the prescribed course, some parts of which forbade any deviation from a straight air-line route, the high ‘figure of merit’ which enabled the WACO pilot to walk away with victory was, no doubt, the result of the ability of his ship, when backed by his own piloting skill, to land and take off within an exceptionally brief space of time. In the pre-Tour tests made

at Ford Airport, Livingston set a ‘stick’ record of 3.4 seconds, and an ‘unstick’ record of 4.4 seconds.

“Livingston’s triumph brought to the WACO Aircraft Company, of Troy, Ohio, for the second consecutive year, the Edsel B. Ford Trophy, the 1928 Tour having been won by the late Major John P. Wood, of Wausau, Wis., with a WACO 10, also equipped with a Wright engine. The trophy goes permanently to the company winning it three successive years.

“A WACO ‘225’ also took second place in this year’s Tour, Arthur J. Davis, of Lansing, Mich., scoring just below his teammate, and winning a cash prize of \$2,000. Davis held the next to highest ‘figure of merit’ and flew the route with only one ‘imperfect score.’ Third place was won by a tri-motored Ford, powered by a Wasp and two Wright 300’s, fourth by a Curtiss Condor, equipped with two geared Conquerors.”

The ten cash prize winners, in order of standings, were as follows:

PLACE	SCORE	PILOT	PRICE OF PLANE*
1	45,672.64	John Livingston	\$7,335
2	41,108.84	Art Davis	7,335
3	38,494.03	M. E. Zeller	48,000
4	33,796.16	J. W. Crosswell	85,000
5	33,277.40	Geo. Holdeman	14,950
6	31,090.22	Robt. Nagle	14,950
7	29,711.81	J. Carroll Cone	6,325
8	28,504.18	Mrs. Keith Miller	6,575
9	28,311.62	Wm. Wethorn	6,750
10	28,090.60	B. S. Warner	55,000

*Denotes manufacturer’s advertised list price. It is significant of WACO value to compare its price...and its margin of superiority in performance as expressed by the score...with that of the other entries. This characteristic value is what has made WACO the most popular commercial aircraft in America.

Still finer performance

+ + +

In every factor of design and performance the winning Waco in the 1929 Tour improved on the figures for the winning Waco of the previous year.

It is significant of the general improvement in airplane design during this past year, that the WACO which was good enough to win the 1928 National Air Tour by a comfortable margin would have placed *sixth* this year.

But . . . the WACO "225" Straight-Wing that did win the National Air Tour this year more than *doubled* the margin of victory of the WACO that took first place the year before. That shows an improvement in WACO airplanes *even greater* than the improvement

in aircraft in general.

A detailed comparison of the winning WACOs in 1928 and in 1929 explains this decided improvement. In this year's Tour, WACO carried *more* load . . . It flew at *higher* speed . . . It made *better* time in take-off and in landing . . . It used a motor of *less* piston displacement. It therefore showed improvement in *every one* of the five factors that go to make up the official "Figure of Merit." And it had a perfect score for each of the 32 laps.



The ship that won

+ + +

The ship that won the Fifth National Air Tour was a stock 3-place, open cockpit WACO "225" Straight-Wing. So was the second-place ship. Both were taken from the assembly line and given the customary factory flight tests. Only a scant half-hour in the air preceded their entry in the Tour.

These WACOs were powered by the Wright "J-6," 7-cylinder motor. Standard equipment included Eclipse Hand Inertia Starter, navigation lights, tachometer, altimeter, oil temperature and pressure gauges and airspeed indicator. The only special equipment consisted of an Aperiodic compass, a bank-and-turn indicator, and fairing on the lower wing-butts.

In official tests at Detroit preceding the Tour this \$7,335 WACO was awarded the highest figure of merit among competing makes of all types and prices. Its landing time was exactly 3-4/10 seconds — less than 100 ft.! Its take-off also was quicker than that of any other entry . . .

4-4/10 seconds . . . with Dept. of Commerce A.T.C. loading 2600 lbs. Its average top speed was 135.44 m.p.h. four times over a measured course. Just 85% of this speed, or 115.12 m.p.h. would rate a perfect score. Actually, WACO averaged 130.9 miles per hour for the 5,017 miles of the Tour.

That, you must admit, is performance! Spectacular performance in the formula tests. And consistent performance in 32 laps of scheduled flying. On the strength of it, the winning WACO scored a total of 45,672 points a margin of 7,178 points over the next competing make.

Take these figures as significant proof that the WACO "225" Straight-Wing is the practical ship for you to own and to fly. The nearest WACO dealer will arrange a flight demonstration at your convenience. And, if you wish, we'll send you detailed specifications about the WACO "225" which won the Tour in such brilliant fashion.

THE WACO AIRCRAFT COMPANY

TROY, OHIO

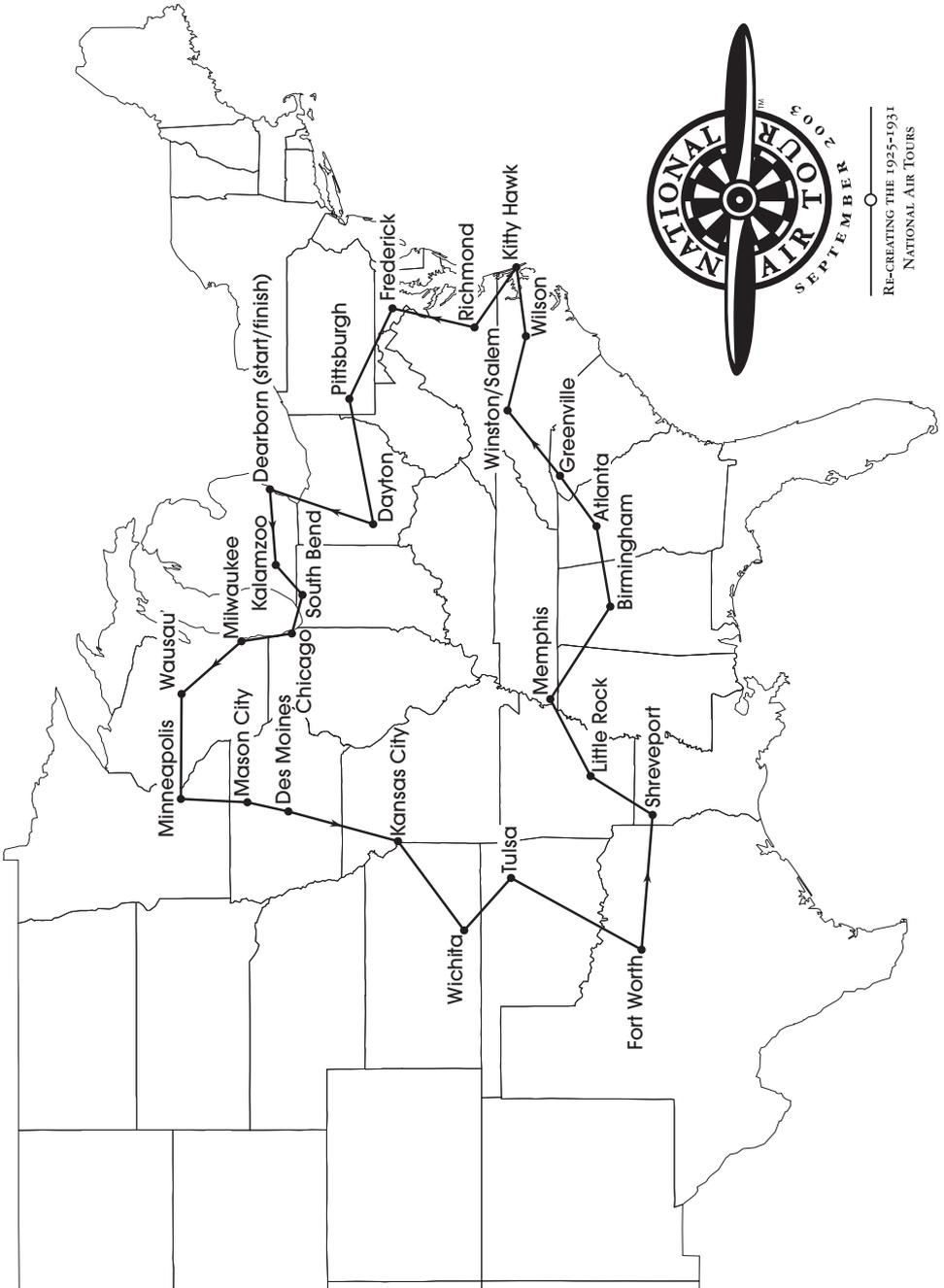
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National Air Tour – 2003

Proposed Route & Schedule as of August 2002

1. **Monday, September 8th, 2003**
Dearborn to Chicago over Kalamazoo & South Bend – 221 miles
2. **Tuesday, September 9th**
Chicago to Milwaukee – 112 miles
3. **Wednesday, September 10th**
Milwaukee to Wausau to Minneapolis – 324 miles
4. **Thursday, September 11th**
Minneapolis to Mason City to Des Moines to Kansas City – 424 miles
5. **Friday, September 12th**
Kansas City to Wichita – 176 miles
6. **Saturday, September 13th**
Wichita – layover
7. **Sunday, September 14th**
Wichita to Tulsa to Fort Worth – 367 miles
8. **Monday, September 15th**
Fort Worth to Shreveport to Little Rock – 386 miles
9. **Tuesday, September 16th**
Little Rock to Memphis to Birmingham – 348 miles
10. **Wednesday, September 17th**
Birmingham to Atlanta – 150 miles
11. **Thursday, September 18th**
Atlanta to Greenville, SC to Winston-Salem – 301 miles
12. **Friday, September 19th**
Winston-Salem to Wilson, NC to Kitty Hawk – 256 miles
13. **Saturday, September 20th**
Kitty Hawk – layover
14. **Sunday, September 21st**
Kitty Hawk to Richmond, VA to Fredrick, MD/DC area – 283 miles
15. **Monday, September 22nd**
Frederick, MD/DC area to Pittsburgh – 150 miles
16. **Tuesday, September 23rd**
Pittsburgh to Dayton – 233 miles
17. **Wednesday, September 24th**
Dayton to Dearborn – 187 miles

Total distance approximately 4,000 statute miles. Sixteen nights “on the road.” Specific airports to be determined.



RE-CREATING THE 1925-1931
NATIONAL AIR TOURS



"Ask Any Pilot"

Printed in U.S.A.

WACO
AIRPLANES

“Ask any Pilot”