

By Jack Cox

Photos by Beverly Hyde

Aerial Shots by Buzz Fitzroy and Frank Lambe

The Ultimate Monocoupe

IT WAS A warm Sunday afternoon in late spring of 1948 . . . May 23, to be exact. Since the end of church hours, cars had been streaming, single file, up the narrow gravel access road and into the parking lot of what was proudly billed the Asheboro, North Carolina Municipal Airport. Billows of red clay dust lightly settled on everything — the mostly black, mostly pre-war Fords, Chevies and Plymouths, the Sunday-go-to-meeting finery most folks were still wearing and the row of Cubs, Champs, Super Cruisers, T-Crafts and show planes parked right in front of the cars. Worst of all it settled on the chopped barbeque sandwiches being hawked from car to car.

This was the day of the "First Annual Air Show" sponsored by the Randolph County Airport Commission with "net proceeds for airport improvement". Already the city fathers had been busy. Bulldozers had been pushing back the scrub oak and gashing open banks of blood red clay to lengthen the east/west strip to 2500 feet. Like most towns across the country in the late 40s, Asheboro was air minded. They were proud of their little dirt airstrip at the south edge of town — it would put them "into the mainstream" of what they were certain was the dawn of a new post-war aerial age. Today's air show would provide the cash to pay for the bulldozers and the seeding (which never had and never would succeed) and for the new 2,000 ft. cross runway that was planned.

Civic pride and the auspiciousness of the occasion demanded nothing less than the best, and that was what the Airport Commission had contracted for — an 11 act show that would last almost until dark. According to the

John McCulloch getting ready to tow a disassembled Little Butch to Ken Hyde's shop for rebuild.





Little Butch completely stripped for rebuild.

program, which was selling at the gate for 10c a copy, a "Star Spangled Banner Parachute Jump" would open the show, followed by "aerobatics with smoke by Ben F. Huntley", a comedy act featuring a Curtiss Junior with the fabric stripped off the fuselage (billed as a "1911 airplane"), a car-to-plane transfer by a group known as the Thrashers, wing walking, ribbon cutting, aerobatics in a modified Great Lakes called the "Bug" piloted by Phay Daughtrey, a landing and take-off from a platform atop a hot V-8 Ford that raced up and down the dusty runway, "crazy flying with shotgun comedy act", a 10,000 ft. delayed parachute jump by Jack Huber . . . and the grand finale, the piece de resistance — an aerobatic performance by Woody Edmondson in his powerful Clipwing Monocoupe!

Woody Edmondson, the International Aerobatic Champion — just crowned at Miami in early January.

THE Woody Edmondson . . . right there in little ol' Asheboro!

It was almost more than the author, a callow youth of 14, could stand. Rotten to the core with aviation enthusiasm literally since birth, I was also a rabid Monocoupe fancier. Woody's Clipwing would be the first real live one I had ever seen. Somehow amidst all the pre-show activity the red and white Clipwing landed and parked before I noticed it. I recall watching the jumpers pack their chutes, so it was probably during that period . . . whatever, I had missed seeing my hero before he had disappeared into the crowd.

Although I enjoyed the other acts that afternoon, I was living to see the 'Coupe fly — throughout the show I fantasized fiendish methods of inhuman torture to inflict upon the wretch who had scheduled Woody at the tail end of the program. That this was traditionally the honored spot on any air show bill did nothing to allay my impatience. Very late in the afternoon, I paced back by the Monocoupe for possibly the 50th time and was dismayed to see it running. Once again, Woody had slipped past my supposedly watchful eye and was in the cabin warming up the throaty Warner . . . too far away from my vantage point behind the ropes to really see what he looked like.

Shortly, the 'Coupe taxied down to the end of the strip, bouncing and jerking over the rough, newly 'dozed surface. Turning into the wind, Woody firewalled it and blasted the tail up — seemingly in one motion. Trailing a glorious red tornado of dust, the Clipwing was off the ground after a very short roll, but the nose came down immediately. Even then I knew this was to build up speed for a zooming climb, but I was totally unprepared for the one I saw seconds later. In 1948 I had not yet seen a jet aircraft up close, so when Woody Edmondson pulled up



Here is how Monocoupes get those nicely rounded fuselage corners — a lot of woodwork. That's one of Ken Hyde's Curtiss Jennies on the right.



Ken Hyde (EAA 37179), RFD 1, Warrenton, Va. 22186 applying fabric to one of the ailerons. Ken is one of the nation's super restorers of antique aircraft.

into a near vertical climb and just kept going up and up, I couldn't believe what I was seeing! Out of the top of the climb, he headed downwind and began a turning, screaming dive right back down on the deck. Just as he approached the end of the runway he rolled inverted — to the accompaniment of an audible gasp from the crowd — and held this to about mid-field, at which point he pushed up to vertical and began a series of vertical rolls.

Now, to the present generation of air show watchers and participants used to seeing the 180 and 200 hp Pitts in action, none of this would have been terribly earth shaking . . . but in 1948 the performance of this Clipwing Monocoupe, particularly its vertical performance, was

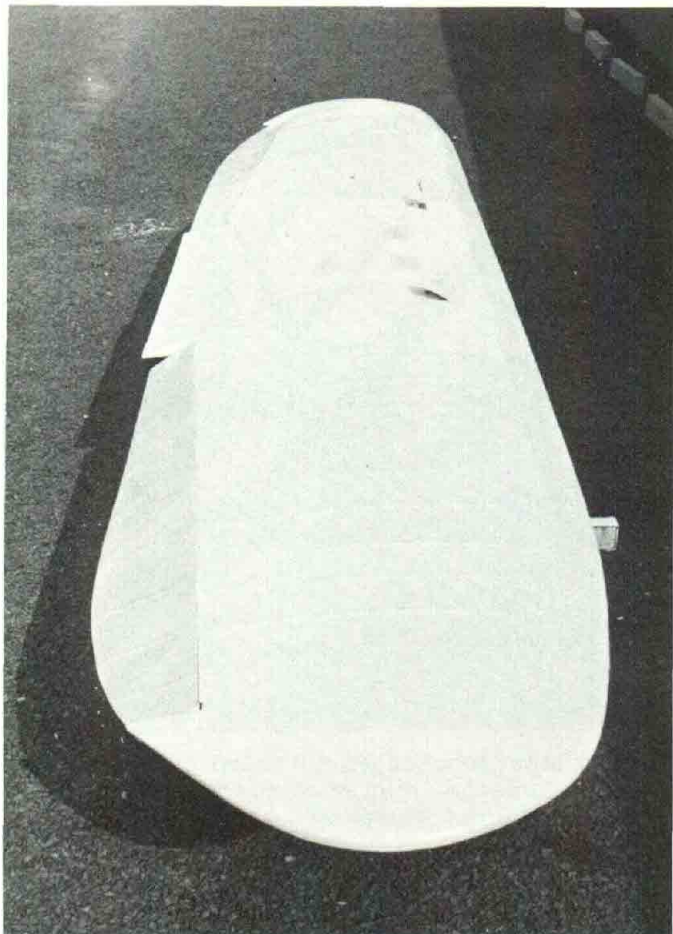
mind boggling. Thinking back over the 27 years since that Sunday back in North Carolina, the things that stick out were the high rate of roll, the vertical performance and the speed of the little 'Coupe. Woody flew a beautiful, spectacular show, but for me anything he could have done after that inverted pass and push up into vertical rolls was anticlimatic.

After completing his routine, Woody slipped her in and let the Clipwing roll right up to the crowd line with the tail still off the ground. Here he stopped and made the 'Coupe bob its nose up and down . . . he was bowing to the crowd, according to the show announcer. By this time I had elbowed my way to the front of the cheering crowd — this time I wasn't moving until I saw Woody Edmondson, no matter what. And I wasn't to be disappointed because after shutting down the Warner, the funny little pentagonal door swung open and out squirmed . . . a rugged, Hollywood-hero type resplendent in riding boots, whip cord jodhpurs and that brown badge of courage no self-respecting aviator of the late 40s would have been without, a leather flight jacket??? Not in a million years. To my youthful astonishment, out stepped a dapper figure dressed in a business suit, white shirt and tie and a then stylish broad brimmed fedora! Far from a Roscoe Turner, this fellow, who was now smiling broadly and waving to the still applauding crowd, looked more like he had come straight to the airport from church along with most of the people in the cars. I wasn't disappointed, however — in fact, the more I thought about it, the more I thought it was pretty neat that a guy could go up and do all those things Woody Edmondson had just done . . . in a suit and hat. I did wonder a lot about that hat . . . how did it stay on?

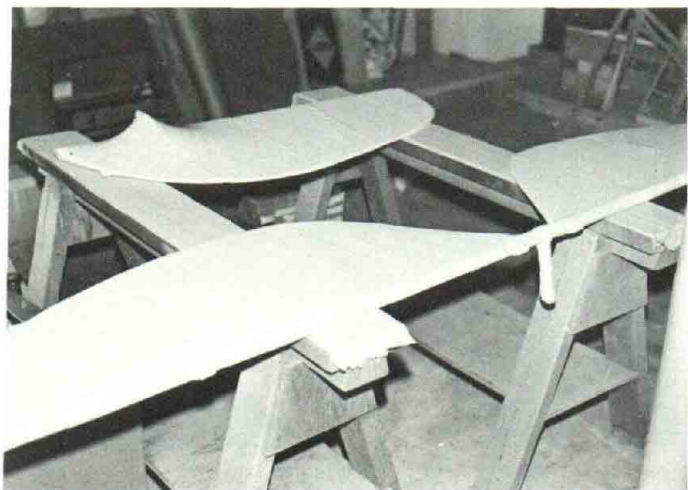
After the show was over I had the chance to go out on the field and look at the Clipwing up close. I saw the name "Little Butch" painted on the nose, and peering through the side window, wondered how Woody could see where he was going — the seat seemed so low and the panel and cowling loomed so large and formidable to the front. Looking up through the narrow slit of Plexiglass that was the windshield, all I could see was sky. I distinctly remember thinking, "It takes a REAL pilot to fly this thing".

I stood there peering into the cabin drinking in the exotic aroma of hot oil, gasoline and nitrate dope and the metallic tic-ticing of the collector ring as it cooled down . . . until everyone was shoed away when Woody was ready to head home to Lynchburg, Virginia, some 130 air miles to the north of Asheboro. I stood watching Little Butch until it became a faint speck and finally disappeared, still above the northern horizon. *Never in my wildest dreams did I suspect that 18 years and 5 months later I would be flying in that same little airplane — looping and rolling and making screaming dives and passes down a runway.*

And that's the way it was . . . an afternoon in the life and times of one of the most historic aerobatic/racing airplanes still active today, N36Y, the Model 110 Special Monocoupe made famous in the late 1940s and early '50s by W. W. "Woody" Edmondson. Certainly one of the more insignificant days in the life of "Little Butch", but typical of many profitable Sundays it would spend on the air show circuit. Woody was in great demand in those days, particularly in his native Southeast. He often flew two or three air shows a day when he could schedule them close to Lynchburg and reasonably close together. Leaving home in the morning he would zip down to, perhaps, Asheboro, N. C., fly an early afternoon show, refuel and head north for Madison. Diving out of nowhere, he would beat up the place — legally, of course — and keep right on flying north for Danville where he would repeat the performance before cruising on in to Lynchburg for din-



The one piece Clipwing Monocoupe wing. Notice the near full span ailerons and the masked-off center section skylight.



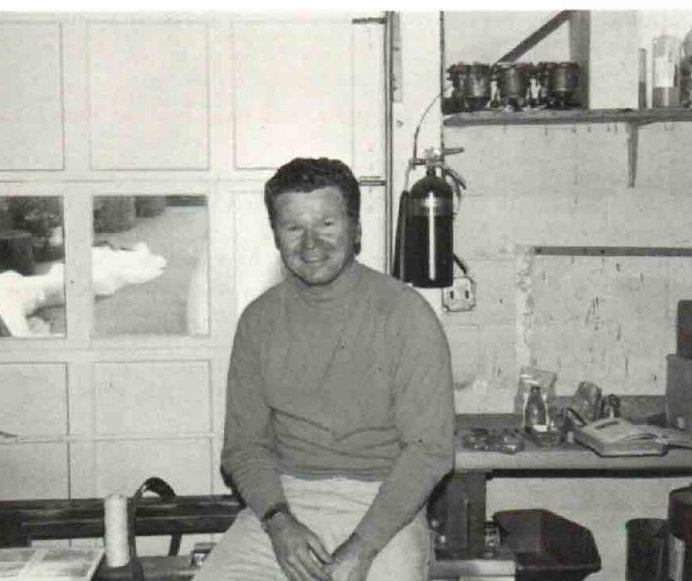
Ken Hyde's beautiful fabric work is evident in the rudder and elevator shown here.



The first coat of red.



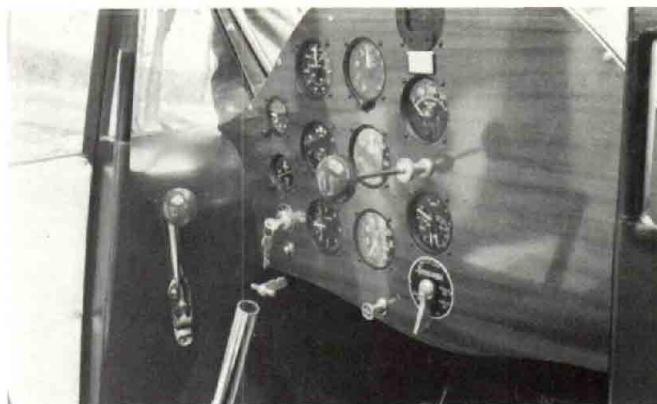
The reason for the lack of forward visibility in a Clip-wing Monocoupe is the high mounting of the engine.



John McCulloch (EAA 44871), 5115 Pommeroy Dr., Fairfax, Va. 22031, DC-9 Captain and owner of Little Butch.



The extent to which Little Butch was stripped down for rebuild is illustrated here. The cowling was stripped and the old "bumps" were removed. New bumps were hand formed and the cowl smoothed out. This was one of the most time consuming jobs in the entire restoration process.



Little Butch's new all wood instrument panel. That's a wobble pump just ahead of the door.



"Pop" Hatcher of Lynchburg, Virginia who built a new wing for Little Butch.

ner that evening at home. The promoters at Madison and Danville would simply drop his check in the mail!

The real glory days for Woody Edmondson and Little Butch, however, were far removed from Sunday afternoon air shows at little Tobacco Road airports. Their finest hours would come a hard days flying southward from Lynchburg — at the Miami Air Maneuvers and Air Races.

The first big civilian air show held after World War II was the 1946 Miami event — held the first week in January. According to the **Miami Herald**, Woody and Little Butch opened the show and thus were the first civilian air show act of the post war era. Little Butch received a real workout, being raced as well as flown in the aerobatic events. N36Y won the Curtiss Trophy Race, the Aeronca Trophy Race and was second in the aerobatic event . . . won by Bevo Howard. Woody finished second to Bevo again in 1947.

In 1948 the first post war International Aerobatic Championship contest was held as a part of the Miami Air Maneuvers. This time Woody turned the tables on Bevo and came out the winner. This win, the high point in Woody's and Little Butch's careers, is still noted on both sides of the fuselage of N36Y, just behind the D windows.



John pours in some petrol preparatory to firing up the engine for the first time since overhaul. The 23 ft. one piece wing supports itself quite well without struts.

In 1948 Little Butch was just a pup — only seven years old. It had been built in Orlando, Florida early in 1941 for Billy Coddington of Charlotte, North Carolina and was test flown on February 3 by Monocoupe president, Clare Bunch. All the 110 Specials, since Johnny Livingston's original, were built on special order, and Mr. Coddington was on hand for the test flying — he even had the dubious distinction of being in on a forced landing with Butch, fortunately a successful one. In its original form N36Y (Ser. No. 7W96) was powered by a 145 hp Warner and was Monocoupe blue with ivory trim.

During the next 3 years, N36Y went through a series of owners: Guy Gully of Farrell, Pennsylvania, J. D. Reed of Houston, Texas and on March 16, 1944, Woody Edmondson. Oddly enough, the Clipwing was purchased by Woody strictly for transportation. During World War II he ran a Contract Pilot Training program at Lynchburg and with a national 35 mph speed limit, airliners impressed into military service, trains and busses crammed with G.I.s, travel associated with running his school was a serious problem. Fast lightplanes such as Staggerwings and Howards had also been impressed by Uncle Sam, so about all that was available were a few pre-war hotrods declared too hot to handle for use as military hacks . . . like Clipwing Monocoupes. Woody had owned

a D-145 before the war and as an air show performer had seen firsthand what an aerobatic ace like Leonard Peterson or Johnny Livingston could do with a Clipwing, so he knew what a diamond in the rough he was getting.

After VJ Day, Woody had to start thinking of ways his 'Coupe could earn its keep, and as we have already seen, he fell right back into his old pre-war ways. Within months the two were polishing the pylons and dueling with Bevo Howard at Miami.

It was during this period that N36Y underwent the transformation to the form that is familiar to aerobatic/racing aficionados today. First, the plane was given a red and white sunburst paint job and then a 185 Warner — 200 hp for take-off. Woody winces a little to this day when the subject of the engine change is broached. It cost him 20 grand and more red tape troubles with the feds than he likes to remember. It took a lot of Asheboros to pay for the big Warner, but the performance gains were spectacular — and the bird was still licensed in the Standard Category.

After the winning of the aerobatic title in 1948, Woody picked up Gulf Oil as a sponsor and performed in air shows all over the east and midwest from 1949 through 1951.



Two very important figures in the restoration of Little Butch, Elizabeth McCulloch, left, and Beverly Hyde, "the long suffering wives" of John McCulloch and Ken Hyde — who, according to John, "have to have a sense of humor when they're married to some kind of airplane nut!"

With the coming of the Korean War in 1950, air show activity began to taper off and, concurrently, Woody's business interests began to take more and more of his time. It all added up to a gradual decline in the use of Little Butch during the 50s. The 110 Special is a demanding airplane as far as pilot proficiency is concerned and Woody knew this, so rather than continuing to risk his neck and the airplane in only occasional flights, a very reluctant decision was made in 1960 to sell Little Butch to air show pilot Johnny Foyle.

Butch apparently did not take kindly to new hands on the stick. Foyle promptly found himself on his back during landing roll-out and after the plane had been rebuilt, duplicated the feat on the very first test flight . . . in front of movie cameras, no less. Shortly after the 'Coupe was rolled back into the late Frank Sadler's shop at South Boston, Virginia, Johnny Foyle was killed when his Stearman collided with a T-6 during filming for a TV show in Florida. In 1965 the remains of Little Butch were offered for sale by Foyle's estate and a lot of avia-

tion buffs made their way to South Boston to see the famous little showplane — including the author. I didn't know it at the time, but I just missed the man who came to buy rather than look — Eastern Airlines Captain John McCulloch, then of Hialeah, Florida. Pushed back in the corner of a hangar, Little Butch was a sick looking bird — a poignant contrast to the proud world's champion of my 1948 vintage memories. But John could see beyond the dust and damage . . . on June 18, 1965 the prize was his.

John had Carl Poston (the man who in 1950 had snatched the last factory built 110 Special [N16E] from the hands of the local sheriff come to padlock the doors of a bankrupted Monocoupe company) retrieve Little Butch's bones and trailer them to Florida. Over the fall and winter the plane was completely rebuilt, largely by Monocoupe specialist C. V. Stewart. On March 8, 1966 John test flew N36Y, beginning a love affair that endures undiminished to this day.

In the early 1950s John McCulloch was in Korea futilely chasing MIGs with an F-84 while Woody Edmondson was still thrilling the air show crowds with Little Butch back home in John's native North Carolina (Thomasville). After mustering out of the Air Force and signing on with Eastern, John soon came under the Monocoupe spell. Something had compelled him to purchase the late Rusty Heard's D-145 (N86570, Serial Number D-122). The appreciation he developed for this demanding little 'Coupe was, of course, what eventually prompted him to acquire Little Butch . . . the ultimate Monocoupe.

That summer John started showing Little Butch on the fly-in circuit and, fortunately for me, decided to bring it to Gastonia, N. C. for the fall fly-in of the Carolinas-Virginia Antique Airplane Foundation (now EAA Chapter 395). After I had taken my 346th slide of the 'Coupe and related my story of Woody and Butch at Asheboro in '48 for the 23rd time, John finally realized I was never going to go away, so he gave in and told me to get in the right seat and hold the brakes while he propped the Warner.

From the moment I reached out and pulled the funny little pentagonal door open and squirmed into the cabin, I found myself slipping into a near schizophrenic experience. For the next 30 minutes, every maneuver, every sensation I experienced, I experienced twice . . . simultaneously. The real thing and its mirror image of 18 years before. I was sitting there with my backside strapped to Little Butch loving every second of John's rolls,

loops, 195 mph passes down the fly-by runway, the high G pull ups . . . while at the same time I was seeing it all from the other side of the looking glass. *THIS is the way it felt, the way the world tumbled past the windshield, the way it sounded from inside the cabin of Little Butch that warm Sunday in 1948.*

That was the most exciting airplane ride I had ever had . . . it is the most exciting airplane ride I will **ever** have. On that September morning — yes, it was a Sunday morning — I had about 350 hours of flying time and I had never flown in an aircraft with this kind of performance. In short, I was at the most impressionable point of my flying career. I have been in N36Y several times since and I have been fortunate to have flown and ridden in a great number of airplanes since, including a P-51, but nothing else has and, I know, never will surpass the thrill of that September 25, 1966 ride. I am simply grateful to John directly and Woody indirectly for making this moment of my life what it was . . . and is . . . to me.

Throughout the late 60s and early 70s John flew Butch to fly-ins all over the eastern half of the U. S. from his home airport in Manassas, Virginia — he had been transferred from Miami to Washington, D. C. by Eastern shortly after my Gastonia ride in 1966. He became quite proficient in aerobatics with the little dude and occasionally flew an air show. When the Flying Circus began its operation at Bealeton, Virginia John flew a show there now and then when his duties as a DC-9 captain allowed. Little Butch has not seen a hard life in recent years by any means, but aerobatics and the simple accumulation of hours take their toll on any airframe. A couple of years ago John decided it was high time he had a look at Butch's innards . . . and it was a good thing he did.

Little Butch is very special to John McCulloch. He is acutely aware that he possesses a unique historical artifact that, in a larger sense, belongs to all of us. Thus, when the decision was made to again rebuild the ship, he wanted the work done by someone who was not only a highly skilled craftsman, but, just as important, a kindred spirit, someone who would share his feelings for the airplane. He didn't have to look far.

Ken Hyde of Warrenton, Virginia is an American Airlines Captain . . . and the owner and operator of Virginia Aviation Company. He has restored a number of antique airplanes over the years — his tongue-in-cheek named Aeronca C-3, "Speedy", portions of a 1922 Farman Sport, a Stearman, and, most recently, has been hard at work on two Curtiss Jennies, just to name a few of interest



How's this for close! John tucks Little Butch right into the cameraman's lap.



Little Butch and owner John McCulloch back in their element after the airplane's latest restoration.

to antiquers. All have been beautiful pieces of work. Somehow, John convinced Ken he should squeeze Little Butch in ahead of the Jennies.

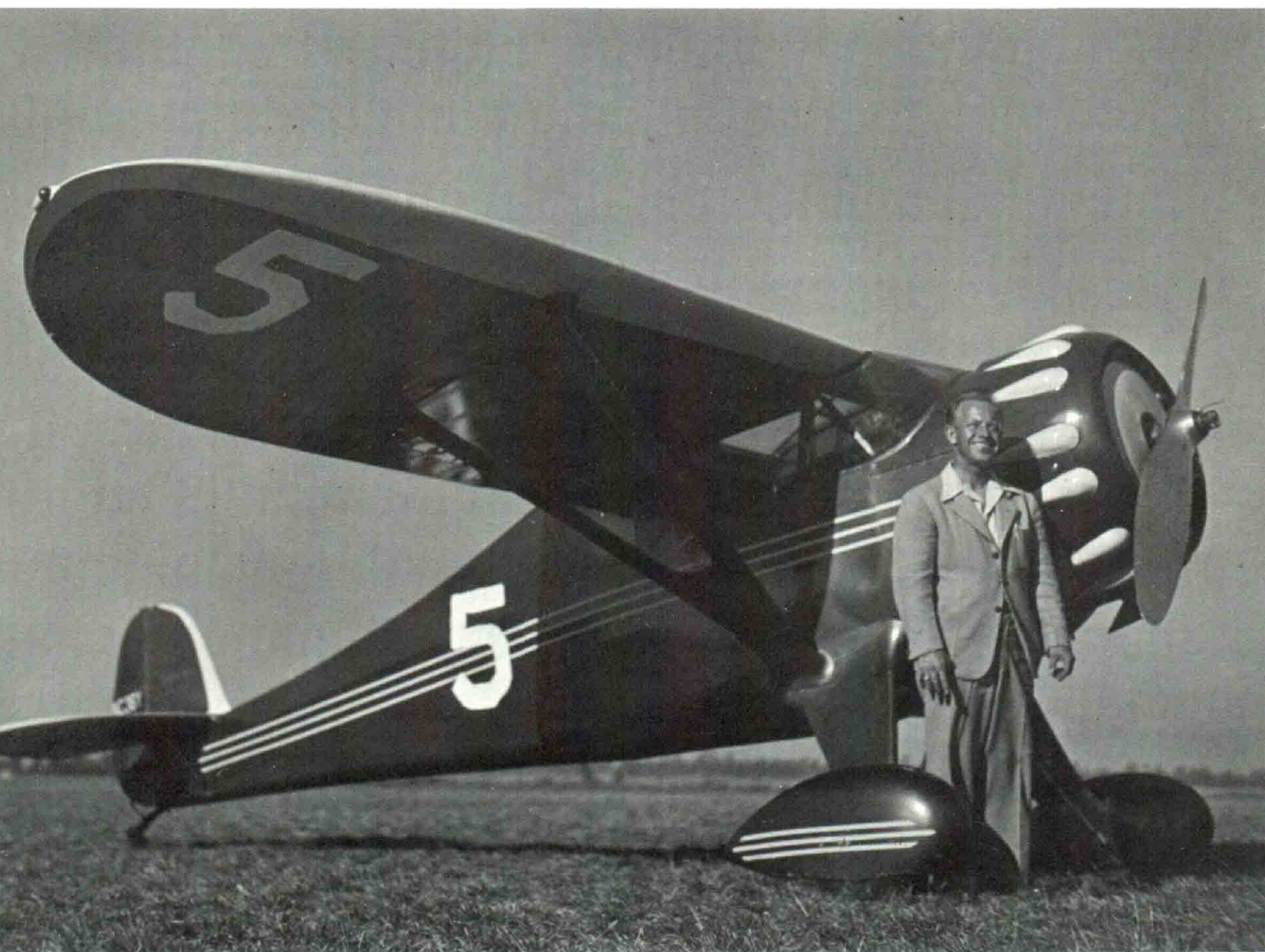
As soon as the 23 foot, one piece wing was removed and examined, the project took a completely new direction. Both the main and rear spars were cracked! After the little cold shiver that was racing up and down his spine subsided, John was able to reason that his most recent aerobatic flights were not really as near the brink of disaster as one might initially imagine. The cracks were in the center of the wing near the points at which it attaches to the upper fuselage. This wing is so inherently rigid that it is close akin to being a full cantilever unit. The addition of heavy struts makes it bridge-like in strength. In fact, a couple of Clipwings have been rolled up in balls with the outer portions of the wing smashed to splinters and in each instance the wing — or what was left of it — did not separate from the fuselage. In all likelihood the airplane could have been flown for years without incident, so overbuilt is it . . . but that was academic now. The airframe was disassembled, so the only thing to do was build a new wing.

Back in the days when Woody owned N36Y, it had been maintained by F. E. "Pop" Hatcher of Lynchburg. When

John moved to the Washington area, he made it a point to look Pop up, and the two — 3 counting Little Butch — struck up a friendship. After discovering the spar cracks and coming to the realization that the time that was going to be necessary to restore the airplane was now roughly doubled, the decision was made to farm out the wing. Pop Hatcher was the only logical choice. That way Ken could concentrate on the rest of the airframe and, if all went well, the various components would be ready for cover about the same time.

The pictures accompanying the article tell better than words the extent of the work that went into this most recent restoration of Little Butch. The airframe was completely stripped down to the last nut and bolt, a new wing was built and the engine was majored. Peeling away the fabric and paint during the teardown was a sort of leafing back through the pages of history. The fuselage tubing bore mute evidence — in the form of numerous splices — of past damage. The entire tail section apparently has been off more than once. Interestingly, one landing gear leg was longer and bent at a different angle than the other. The cowling was a complete mess, a body putty salesman's paradise.

All these discrepancies were corrected and as the bird



(Photo Courtesy Richard Austin)

W. W. "Woody" Edmondson and N36Y as it came from the Monocoupe factory at Orlando, Florida in February of 1941. It was dark blue with ivory trim. Factory Clipwings were powered with 145 Warners and Curtiss Reed props. The "5's" are temporary race numbers. Woody has now retired and lives in Myrtle Beach, S. C.

went back together a lot of new goodies were added — a new wood instrument panel finished to glisten like a piece of fine furniture, floorboards that look just as good, a black and white upholstery job and a new set of credits for the airplane oglers to read. Printed in the back of the fabric covered baggage compartment is the following:

Curtiss Trophy Race	1st Place	1946
Aeronca Trophy Race	1st Place	1946
Aerobatic Championship	2nd Place	1946
Aerobatic Championship	2nd Place	1947

Also, attached to the rear spar, just behind the pilot's head (in the Monocoupe the top of the cabin is open — the wing bolts right on top of the upper longerons and the spars are fully exposed . . . the skylight is the roof of the cabin) are two small plaques. One reads, "This aircraft restored by Ken Hyde, Va. Aviation Co., Warrenton, Va.," and the other, "Wing woodwork by F. E. "Pop" Hatcher, Lynchburg, Va."

With the airframe essentially completed, the freshly majored Warner was installed and fired up for a ground check. Much to John's chagrin, a longstanding problem still persisted — a rough left mag. All past efforts had been for naught, but John was determined that after going through the airplane the way Ken had, he was not going to settle for anything less than equal perfection in the engine compartment. The mags were overhauled . . . no improvement. A new set of overhauled mags were obtained . . . still rough. Finally, one day one of the right mags was substituted for the mysteriously plagued lefts . . . and the darn engine ran perfectly! Smoother, in fact, than it ever had since John had owned the airplane. Apparently, for a long time — maybe as far back as when the 185 Warner was first installed, the left mag had been in-

correctly timed internally for a Warner. In what must have been in the face of astronomical odds, the new left mag was internally timed the same as the old one. With that problem solved at long last, the plane was buttoned up and in early October, 1974 was flown off Ken's small grass strip.

In the air John immediately found Butch was a new airplane in more ways than one. With the beautiful new wing fitted with a much smoother leading edge, the bird just didn't want to quit flying and the top speed had increased from an indicated 155-160 to 170 mph at the same power setting of 22 inches and 1950 rpm. And since all was recorded on movie film so he can't lie out of it, we can tell you it took John three tries to get Little Butch down on Ken's tiny greensward!

So once again, this famous little Monocoupe has been given a new lease on life — this time perhaps the best it's ever had. Undoubtedly, the finest tribute to the work Ken did came from Pop Hatcher. When he saw the completed airplane for the first time, he walked around it several times and finally said, "It ain't NEVER looked like this!" He should know because his name first appears in Little Butch's logs from nearly 30 years ago! On the third flight of the newly restored airplane, John roared down to Lynchburg and had Pop sign the logs again.

EAAers and aviation enthusiasts will be pleased to know John McCulloch intends to eventually place N36Y in the EAA Museum. Further, Woody Edmondson, who now lives in Myrtle Beach, South Carolina, has accepted EAA's invitation to participate in its Aviation Greats program at Oshkosh this summer. The goal is obvious . . . Woody and Little Butch reunited at Oshkosh '75!



preliminaries. He climbed N 5182 up to 1500 feet and for the next quarter hour did steep turns and stalls over the air field. All too soon the Pup rejoined the circuit, turned on final and landed. As Neil taxied into dispersal, the well-wishers cheered. N 5182 had flown again!

As soon as possible I asked Neil, "What was it like? How did it fly?"

"There will be a written report," said Neil. And here it is —

FLIGHT REPORT ON SOPWITH "PUP" N 5182

Place: Fair Oaks Aerodrome, Chobham, Surrey

Purpose: Initial flight

Date: 11 August 1973 **Take-off:** 1835 local time

Time: 15 minutes

Introduction

The purpose of the flight was to prove the aircraft in flight and to note any primary handling problems.

Conditions relevant to flight

The wind was NE, less than 5 Kts. The sky was clear and there was no turbulence. Approximately 3 gallons of petrol was aboard.

Starting

The engine was reluctant to start and there seemed to be insufficient priming fuel available. Smooth running at high power was achieved on the chocks with the air lever vertical and the fine adjustment $\frac{1}{2}$ inch ahead of it.

Taxiing

Engine handling was normal for the type. Wing tip assistance was found necessary to steer on the ground.

Take-Off

The aircraft was aligned into the wind and full power was applied. The lever positions found on the chocks were used, but the engine would not develop full revs, nor would it run smoothly. The optimum lever position to give the highest power available were quickly found, but these differed from the static positions during acceleration and when the aircraft reached the flying attitude. This was achieved with the stick well forward, and as the tail lifted the aircraft felt directionally "loose" with less rudder

response. However, there was sufficient control to maintain direction and the aircraft was allowed to run straight with its tail up. Although the engine sounded rough and was not giving full power, it was felt that there was adequate thrust for flight. Also, although rough, it was steady. The aircraft flew itself off the ground, and was found to be tail heavy. A careful climb-out path was followed to allow for a possible engine failure at any time. However, the engine continued to run steadily though roughly at 1800 rpm indicated.

Flight

The aircraft was positioned over the approach at 1200 feet as a safety precaution and the following points emerged:

1. The machine was out of trim longitudinally, nose up, and required a push force of 5 to 15 lbs. through the speed range tested; i.e., from 37 to 90 mph. This push force precluded lateral and directional tests proper, there being no trimmer. When the aircraft was allowed to commence a pitch-up maneuver, a large amount of forward elevator was required to arrest it. At 90 mph the stick was about 2 inches from fully forward.

2. There was no noticeable wing heaviness, and normal rudder settings produced balanced flight.

3. The aircraft was brought to the stall, power off, and this occurred without warning at an estimated 37 mph. The stall was very gentle and was marked by a small nose-down pitch. There was no wing drop and no tendency for the engine to stop.

4. Turns were made in both directions, up to 75° bank, and the turns to the right felt more comfortable. Coincident with the slight increase in acceleration in these turns was a sudden smoothing out of the engine together with a noticeable increase in power, with the rpm increasing from 1800 to 2150 indicated.

5. The level speed stabilized at 70 mph, but when the aircraft was dived to 90 mph, the engine speed again increased and the rough running disappeared coincident with the slight "g" pulled at the bottom of the dive. IAS

N-5182 immediately after its first flight in more than 50 years. Autographed by T. O. M. Sopwith.

