

SHORT WING PIPER NEWS

September-October, 1999



Plane of the Month

The Grand Champion at the national convention in Denver this summer was this perky white and red Colt owned by Scott J. Brunner of Shelbyville, Indiana. The Colt, 5351A, was totally rebuilt by Scott, who said the plane was completely stripped down, corrosion treated, primed and everything was replaced -- every screw, bolt, control cable and everything else. Scott also installed a skylight and the Williams toe brakes assembly. Starting on page 89 is a complete story on all that went into making 51Z one of the best looking airplanes at the convention.

Cover Plane



Here's another view of our cover plane, the grand champion from this summer's convention, on the 2000 foot grass strip on Scott and Jaye Brunner's farm.

The rebuilding of 51Zulu ... in a bit more than 6 weeks

Editor's Note: Scott Brunner, owner of a 1962 Piper Colt, was the Grand Champion winner and also Champion Original at the National Convention last July in Denver.

By Scott J. Brunner
1984 N. State Rd. 9
Shelbyville, IN 46176-9419

I purchased my Colt, N5351Z, in August of 1992 as an affordable way to become more active in flying again. I had flown with my dad as a kid. First in a J-

3 Cub; then he had an Aeronca Chief, and finally he purchased a 150 h.p. Tri-Pacer, N2800P. The fabric was rotten, but he had 2800P recovered at a vocational school in Indianapolis and then painted at the paint shop at our local airport.

We farm the ground north and east of the Shelbyville airport, and even though we live just a mile and a half away, Dad wanted his own grass strip, which in the late 1960s he put in the field behind our house.

He kept the Tri-Pacer tied down in the backyard. I have a lot of great memories of flying in and out of that strip and of 2800P. Dad played a dirty trick on me, though. He SOLD that plane just before I turned 15, just when I was about ready to start flying lessons.

Dad did, however, find someone to teach me. Dad wanted me to learn to fly in a taildragger and had a friend named Bob Willis teach me in his Taylorcraft, using the 700-foot strip (including the front yard and side yard) behind his house. Bob soloed me in six and a half hours shortly after my 16th birthday. I finished up my license while attending Purdue a couple of years later and flew regularly in a club there that had a Cherokee 140, a Cessna 150, and an Aire-Coupe on a grass strip north of Lafayette.

After graduation and returning home to farm, however, I found funds for flying very tight. I couldn't buy a plane and renting was expensive. For the next 15 years or so I always stayed current, keeping my medical and my BFR up and renting for two or three hours each year. This brings me back to the purchase of my Colt.

I had been thinking about building a KitFox, when Vic Nasby stopped by and said he had a Colt for sale. It needed to be recovered, but he thought since I was thinking of building and covering a plane anyway that this might be an easier way for me to go.

After considering the time and money to be spent and the fact that the Colt would give me a certified airplane when finished,

I decided to make the purchase. That evening, Vic helped me lift the wings over the north gate of the airport and I taxied the Colt down the mile and a half of country roads to my farm shop. I got some concerned reaction and fly-bys from the other aircraft in the pattern that evening. They thought that poor student was really lost!

Since I farm only crops and no livestock, I have some slow time in January and February. I figured I could dedicate six weeks and \$2,300 for paint and fabric and by March of 1993 I would be flying. I visited a couple of restoration projects an hour or so away to try to learn something about recovering. They were very helpful, but when I told them of my six-week plan they really laughed; I couldn't figure out way. I spent a lot of time that fall reading and re-reading the Stits manual. Then I would watch the videotape and then read the manual again.

During December, I disassembled the Colt, photographing every step of the way. I even videotaped and narrated some of the routing of the wiring and cables and tubing. I purchased hundreds of ziplock baggies with colored panels for writing descriptions of parts. Whenever Dan Catherman (my IA) would stop by to help a little he would tear into something and parts and bolts and washers and fasteners would fly all over and all go into the same box unlabeled and I would be in a panic. I would surely never figure out how to get it back together.

As I was taking things apart, I forgot to stop with just



Two views of the paint booth Scott built for the recovery. This view shows the rest of the work area.



the fabric and before I knew it I had just a bare fuselage in front of me. In the meantime, My IA called and said that I needed to come over to the airport for a talk about my recovery. The sound of that my IA's minor corrections walls from me.

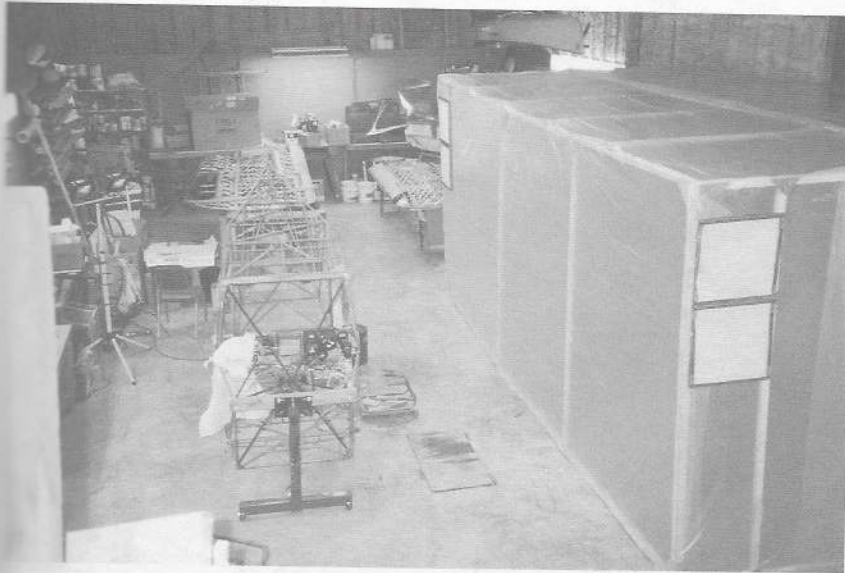
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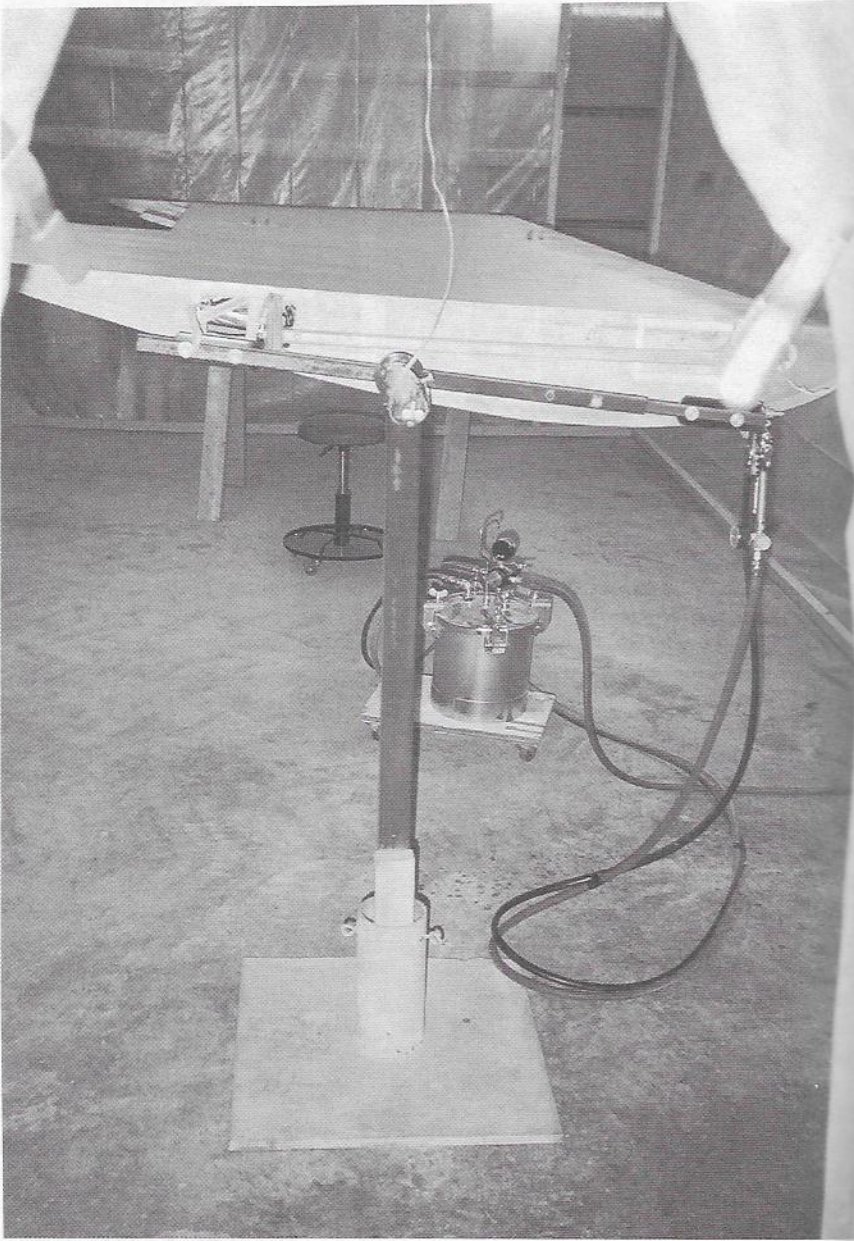


Two views of the paint booth Scott built for the renovation. The view below also shows the rest of the work area.



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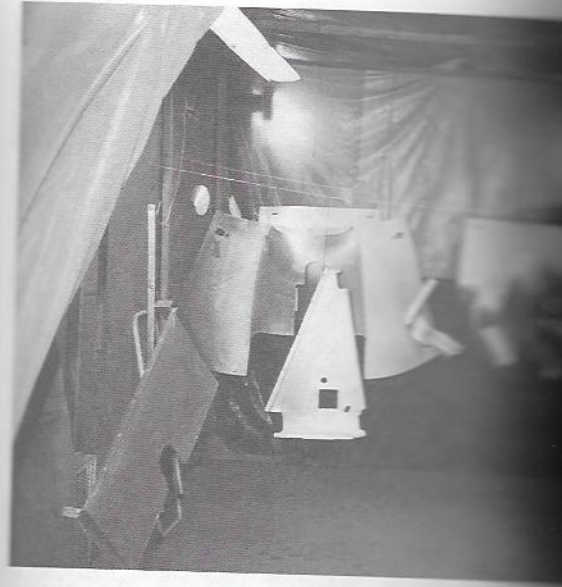
about my engine. I didn't like the sound of that. It turned out that my 750 SMOH engine had minor corrosion on the cylinder walls from occasional inactivity



In the paint booth with the 2-gallon pressure pot.

during its life. We decided to send the cylinders out to be bored .010 over and to install all new valves, springs, guides, etc. While we

were at it we sent the carburetor in for a factory overhaul. We rebuilt the mags and installed a new harness. While the engine

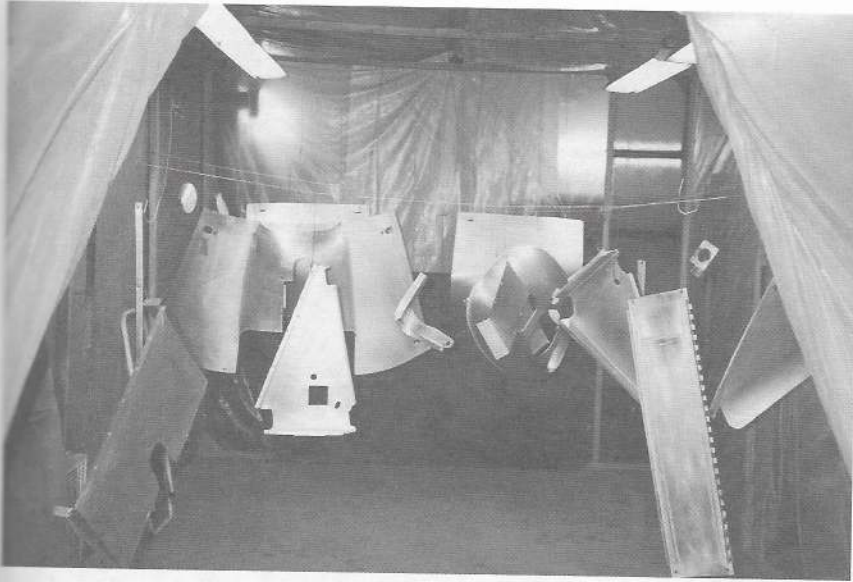


Metal items hang in the paint booth



Wet sanding

was apart, I cleaned, primed, and painted each part before Dan reassembled it.



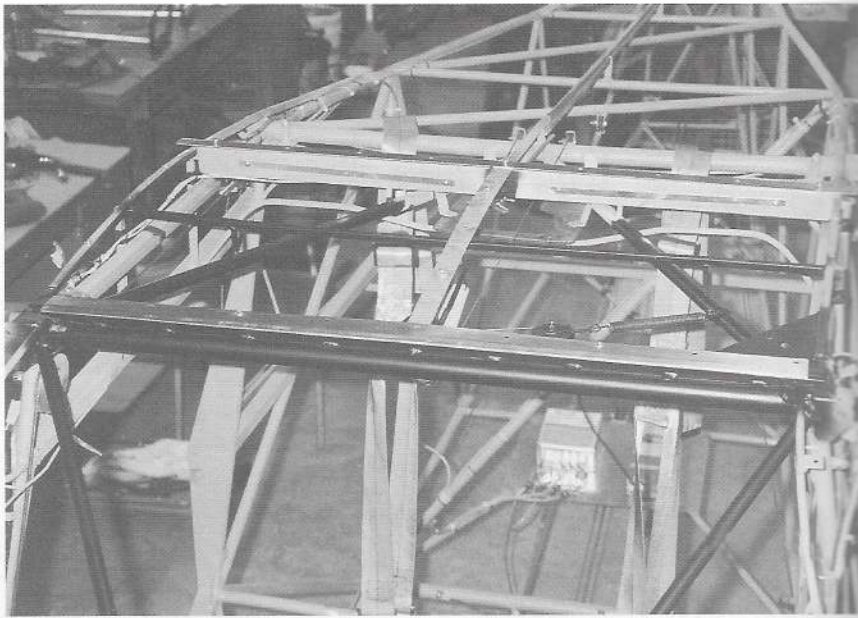
Metal items hang in the paint booth



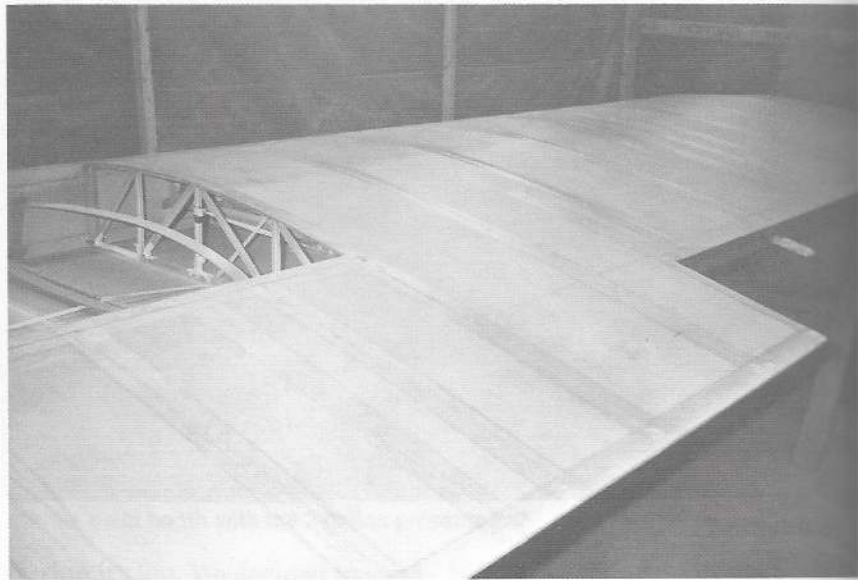
Wet sanding

was apart, I cleaned, primed, and painted each part before Dan reassembled it.

I had joined the SWPC as soon as I bought the Colt and had ordered all the back



Here are two steps in the skylight installation.



issues of the SWPN that I could get my hands on. After a lot of reading, I decided to make several modifications to the Colt in the name of safety, while still trying to restore it to as original

in appearance as possible.

Among the changes is the addition of a skylight for better visibility in turns and in pattern work. I love it and highly recommended it. I also installed the Williams toe brake assembly. Very nice workmanship, and I now have fantastic brakes. Whalen strobe lights were installed for better visibility to others. I installed shoulder harness kits and although they are not really safety related, I used prefabricated interior panels for future accessibility for maintenance.

I borrowed many blueprints from the club library, made copies for my use, and returned the originals. These were a great help in recovering and painting to the original paints scheme. Also, copies of the PA-22 Parts Manual and the Piper Service bulletins books from Univair are excellent references.

During the rebuilt, every bolt, screw, tinnerman, etc., was replaced with cadmium plated or stainless steel hardware. I made up new stainless steel control cables with a Nicopress tool. All metal was stripped, corrosion treated, epoxy primed, and either covered or painted with Stits Aerothane. Bogert battery cables and battery box mods were installed.

My six week project had turned into a monster. In August of 1994, I bought a one-third interest in a beautifully restored 1941 J-3 Franklin Cub just so I could be flying while finishing the Colt. I now have 220 hours in the Cub, and I have flown it around the Great Lakes on four different times, and to the Antique Field at Blakesburg.

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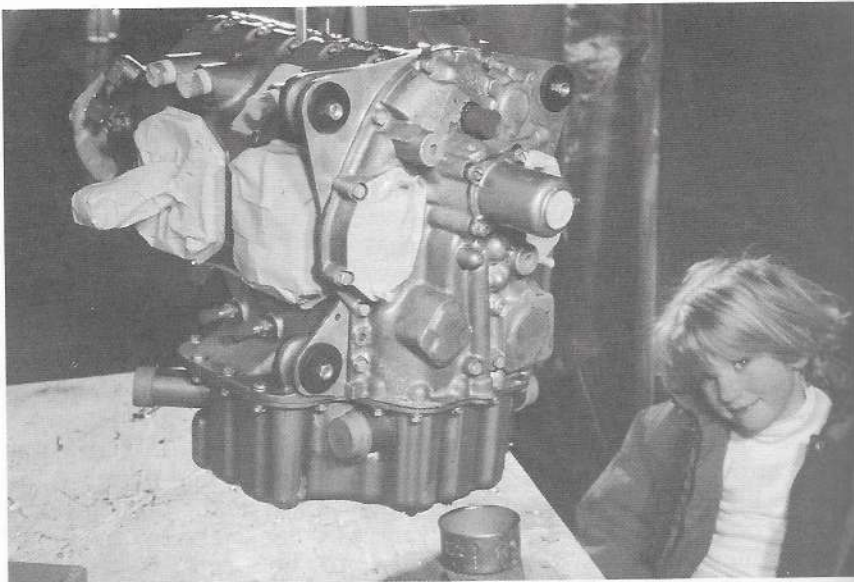
Iowa, once. What a fun airplane.

My goal a couple of years ago was to have 5351Z finished in time to go to Middletown, Ohio, SWPC convention. It is only about 70 miles from home and it's where we fly for breakfast fairly often anyway. Well, that didn't happen either. The weather was even too back to fly the Cub, so I drove over for a day. I saw a beautiful Colt, N5549Z, being judged. I could see the competition would be tough so back home and back to work.

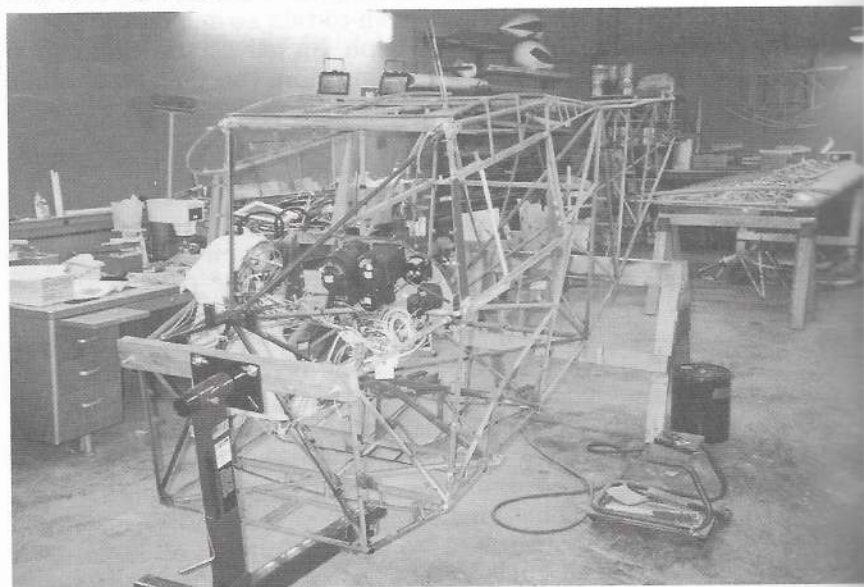
By February of 1999 I was down to taping and painting the wings. I towed the fuselage with my ATV for the mile and a half back to the airport to the radio shop for a new King com radio, transponder, and encoder. I had already installed an intercom and push-to-talk switch on the yokes. Ralph Bissell at the radio shop let me store the Colt there while I finished the wings. That made a lot more room in the shop, plus I didn't have to worry about overspray.

Finally, in April I towed 5351Z back home and bolted the wings on. After rigging by the manual, we wiggled the 30-foot plane sideways out the 24-foot door of my shop and we were ready for fuel. After buying into the Cub a few years ago, I had renovated the landing strip on our farm, and I now had a very nice 2,000 foot by 90 foot strip to fly the Colt out of.

After six and half years, the engine fired up instantly. After a couple of short run-ups and leak checks and a safety briefing from my IA, Dan, it was finally time to realize my dream of rebuilding a plane and

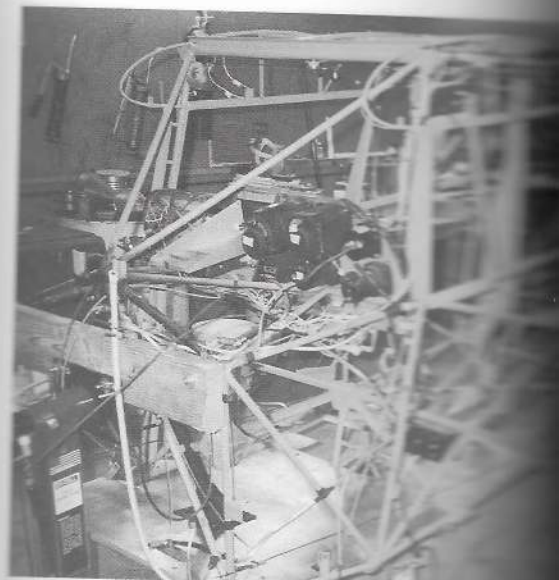


The engine is prepped for painting. Shown is Ali, Scott's daughter and "my little helper," but growing fast. She's now 11 years old and 5'2", Scott says.



The fuselage above is mounted on an engine stand so it can be rotated while covering and painting work goes on.

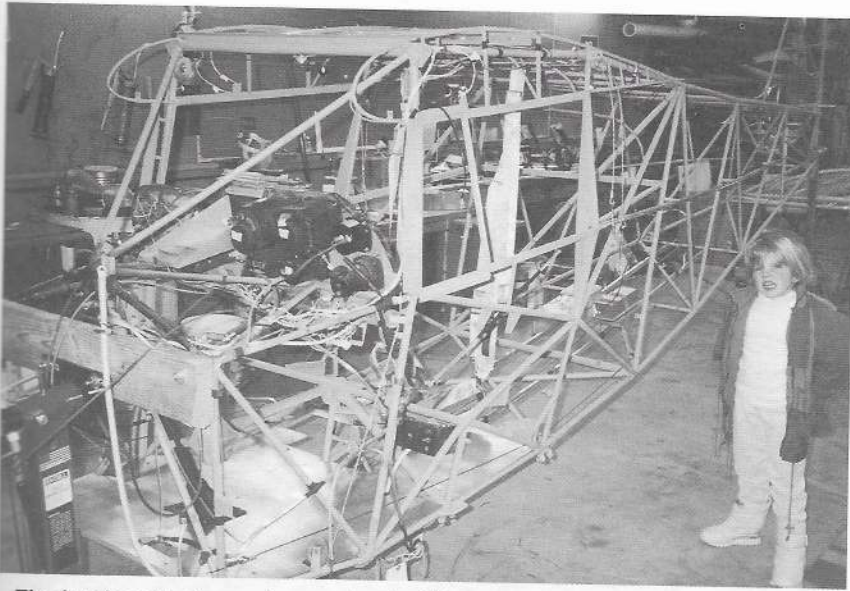
flying from my own grass strip. (take off over 400 acres of flat I had hoped for a north wind empty field), but the wind was



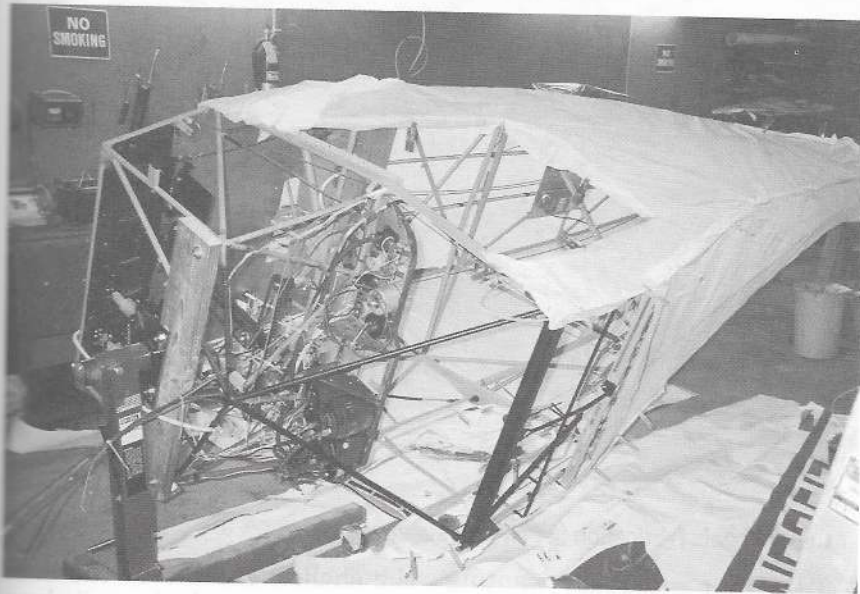
The fuselage is shown above primed with epoxy.



Here, the fuselage has been "rolled" on the engine stand from the south, meaning take off over power lines. I taxied to the north end of the strip, did a quick



The fuselage is shown above primed with epoxy primer.



Here, the fuselage has been "rolled" on the engine mount during covering.

from the south, meaning take off over power lines. I taxied to the north end of the strip, did a quick run-up, held the brakes, powered up, and started rolling. About half way down the strip, I could



Control cable fabrication . . . all new stainless cables.

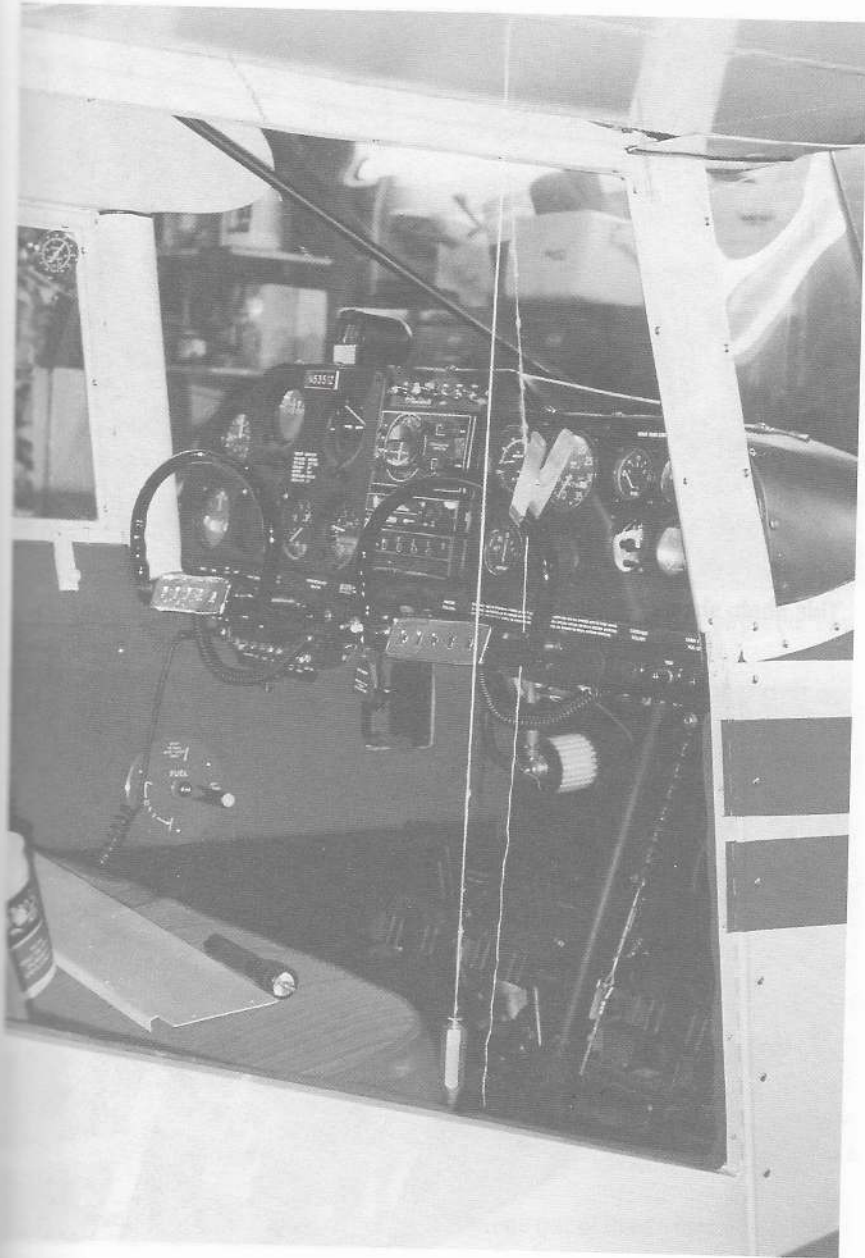
feel the Colt was really wanting to fly, so I rotated and started a shallow climb.

Then I checked the airspeed; it was indicating 45 mph! With power lines and not much runway ahead, I decided to continue

the shallow climb over the lines and then toward the mile-long paved runway a mile and a half away at the airport. Everything was running and working fine, so I decided it was a problem in the indicator somewhere and

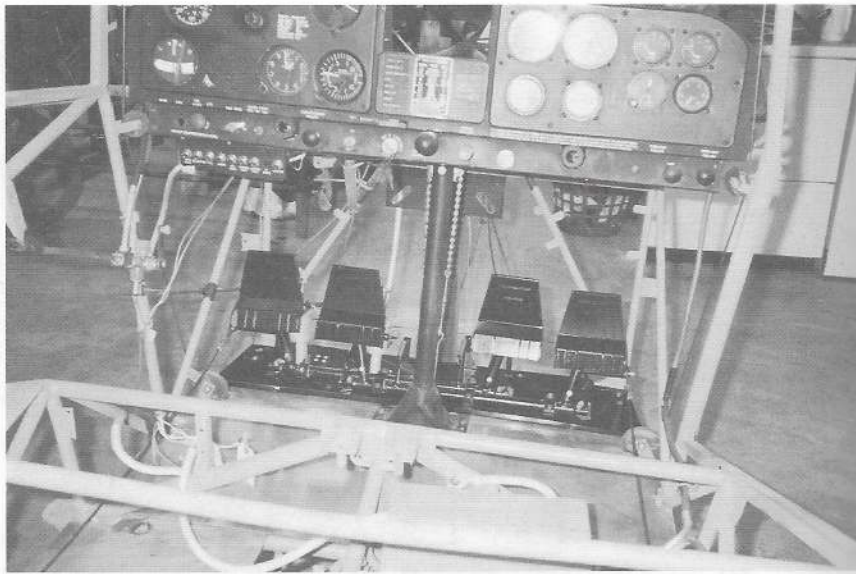


Leveling with the plumb bob for rigging.

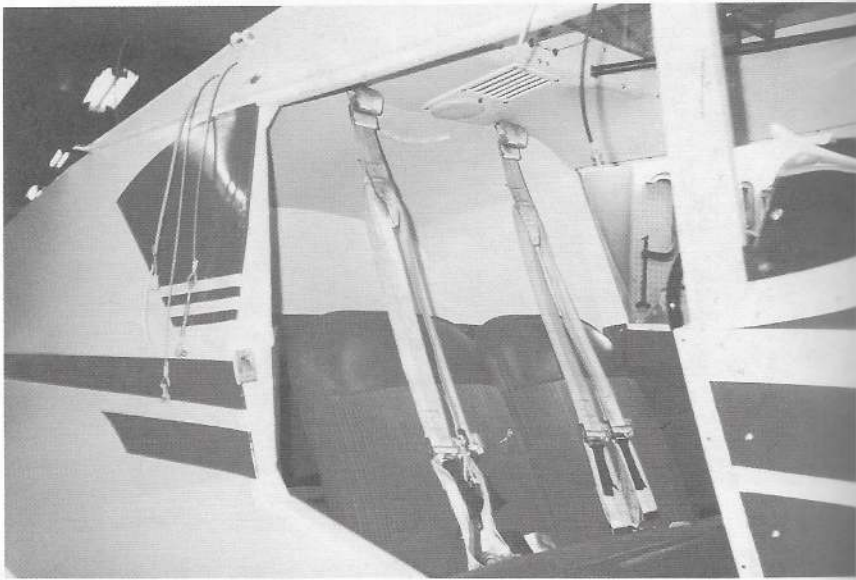


Leveling with the plumb bob for rigging.

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This photo shows the Williams Aircraft toe brake installation.



Here is a view of the shoulder harness from Wag Aero.

continued climbing and circled the airport for a while. Dan finally called on the radio to see how things were going. I said "Fine, just no airspeed." "Well, you're flying by the seat of your



On the way to the radio shop for a new communication system away down a county road.



It took some "wiggling" to get the 30-foot wings out

pants now," he came back. After 35 minutes of circling, I made a slow descent and made a somewhat fast but very smooth landing. I then put 5361Z in a hangar and didn't see her for almost 19 and...



On the way to the radio shop for a new com and transponder. The airport is 1 mile away down a county road.



It took some "wiggling" to get the 30-foot wings out of the 24-foot door.

pants now," he came back.

After 35 minutes of circling, I made a slow descent and made a somewhat fast but very smooth landing. I then put 5351Z in a hangar and didn't see her for

almost three weeks. It was April 19 and time to plant a crop.

In June, I flew several hours and got the rings seated well. I now have 60 hours on the engine and have just now changed the



A last minute look at the engine and a tank of gas in preparation for the first flight.

oil for the third time. In that 60 hours I have only added a quart and a half of oil. I took one turn on the left rear strut and it flies great now.

In July, my wife Jaye flew with me to Denver for the

convention. We had a great time camping under the wing and getting to meet so many of you. Thanks for your wonderful hospitality. Hope to see you at Lakeland in 2000.

PIPER COLT N5351Z
PA22-108
S/N 9072

RECOVER AND PAINT

- Entire aircraft recovered and painted with Stits process and materials
- Recovered per Stits STC using Procedure Manual No. 1, Revision No. 17, January 1997
- All metal completely stripped, cleaned and treated before priming
- All steel surfaces cleaned with Stits C-2200 METL-SOL before priming
- All aluminum surfaces cleaned and etched with Stits ALUMA-DYNE E-2310 phosphoric acid etch
- All aluminum surfaces corrosion protected with Stits ALUMA-DYNE E-2300 chromic acid conversion coating
- Stits epoxy primer EP 420 green zinc chromate primer used on all metal

Revised: 9-Apr-98



First run-up for first flight!

- Stits Aerothane two-part polyurethane used as final color coat
- Base color 120 Daytona White, trim color 151 Prussian Blue
- All fabric is Stits Poly-Fiber P-110 polyester, with either P-110 or P-110-1
- All fabric attached using envelope method and Stits Poly-Tak
- All fabric received the following coats:
 - 1 coat Poly-Brush applied with brush
 - Stitching, reinforcing patches, and finishing tape
 - 2 coats Poly-Brush sprayed on
 - 2 cross coats Poly-Spray sprayed on
 - Wet sanding, 320 followed by 400 grit
 - 1 additional cross coat Poly-Spray
 - Final color coat Aerothane (3 light cross coats 150 mesh)

WINGS

- Installed new wingtip bows, epoxy varnished (Alexander Aerothane)
- New inter-rib bracing tape (1/2" Stits) installed
- Stits polyester flannel installed on leading edges of wings
- New lower right hand strut fairing - Univair U12969-001
- Installed new wing brace channel U12252-03 in right wing - Univair
- Remove, bead blast, epoxy prime, and reinstall aileron hinge bracket
- New landing light lens cover installed LP Aero # 041 clear, CEK
- New felt installed on fuel tank mounting straps
- Both wings recovered and painted with aerothane per Stits STC
- New lift strut fork bolts installed - Univair U 13241-000

FUSELAGE

- Stripped, inspected, and epoxy primed (Stits) all tubing and sheet metal
- All sheet metal painted with Stit's aerothane
- Cleaned and etched galvanized firewall, epoxy primed w/ Stits primer
- Replaced cowl chafe seal
- Installed soundproofing mat (meets FAR 25.853b, from Wick's)
- New twist-lock hardware on cowl latches
- New windshield, clear, LP Aero (ordered thru Alexander Aerothane)



First run-up for first flight!

Stits Aerothane two-part polyurethane used as final color coat on all parts

Base color 120 Daytona White, trim color 191 Pontiac Red

All fabric is Stits Poly-Fiber P-110 polyester, with either P-110 or P-106 finishing tapes used throughout

All fabric attached using envelope method and Stits Poly-Tak fabric cement

All fabric received the following coats:

1 coat Poly-Brush applied with brush

Stitching, reinforcing patches, and finishing tapes completed

2 coats Poly-Brush sprayed on

2 cross coats Poly-Spray sprayed on

Wet sanding, 320 followed by 400 grit

1 additional cross coat Poly-Spray

Final color coat Aerothane (3 light cross coats 15 minutes apart)

WINGS

Installed new wingtip bows, epoxy varnished (Alexander Aeroplane)

New inter-rib bracing tape (1/2" Stits) installed

Stits polyester flannel installed on leading edges of wings

New lower right hand strut fairing - Univair U12969-001

Installed new wing brace channel U12252-03 in right wing - Univair

Remove, bead blast, epoxy prime, and reinstall aileron hinge brackets on wings

New landing light lens cover installed LP Aero # 041 clear, OEM # 12532-00

New felt installed on fuel tank mounting straps

Both wings recovered and painted with aerothane per Stit's STC

New lift strut fork bolts installed - Univair U 13241-000

FUSELAGE

Stripped, inspected, and epoxy primed (Stits) all tubing and sheet metal

All sheet metal painted with Stit's aerothane

Cleaned and etched galvanized firewall, epoxy primed w/ Stit's, painted w/ silver metallic Imron

Replaced cowl chafe seal

Installed soundproofing mat (meets FAR 25.853b, from Wick's) surrounding cockpit, (replaced old fiberglass)

New twist-lock hardware on cowl latches

New windshield, clear, LP Aero (ordered thru Alexander Aeroplane) #463 clear

New safety walk on step
 Installed doubler under skin where venturi mounts on boot cowl
 Repaired and reinforced with doubler sheet metal fairings around gear legs under fuselage
 Fabricated mount (for strobe power supply and ELT) from aluminum and mounted with cushion clamps aft of baggage compartment (same location ELT was before)
 Replaced plywood mount for rotating beacon on belly of fuselage with new epoxy varnished plywood mount and replaced rotating beacon with Whelen strobe per STC
 New Piper louver installed (bottom cowling at rear) Univair U14303-000
 Top front of fuselage reworked, sky-light installed per Steve's Aircraft STC
 Channels around door opening inspected for corrosion, none found, corrosion proofed w/ zinc chromate
 Tubing repaired and replaced on bottom of door frame, door frame corrosion proofed w/ zinc chromate
 Installed new side and door windows - 1/8" plexiglass
 New stainless steel wires installed in cowling hinges
 Fuselage recovered and painted with aerthane per Stit's STC

COCKPIT

Installed nyla-flow tubing to extend static line to other instruments and left port for installation of encoder for transponder
 New headliner installed, Airtex - Natural 1612
 New fuel drain placard
 New prefabricated interior panels installed, Airtex PMA# 9640
 New firewall pad installed (cockpit side), Alexander Aeroplane
 Rechromed Piper emblem on control yokes
 Control yokes stripped, epoxy primed, painted w/ black Imron
 Air filter and hoses installed to vacuum instruments 157-1
 New defroster ducts installed Univair 85052-016
 Installed shoulder harness/lap belt kits per Wag-Aero STC

CONTROLS

All new control cables fabricated and installed, 1/8 7x19 Stainless Steel
 Replaced one tailbrace wire with new wire - Univair U41031-002
 New nipples U41051-000 and nuts on tailbrace wires, Univair
 Replaced tubing on outboard trailing edge of ailerons - 5/16" x 035 4130
 Installed new packings (seals) at firewall around steering rods, Univair 189-410
 Installed new hinge pins and washers for rudder, elevators, and ailerons; bushings were ok, Univair
 Control cable pulleys inspected, bushings and washers replaced as needed, Univair
 Installed new trailing edge U42933-03 on right aileron - Univair
 Installed new trim cable tension spring 81411-02 - Univair
 Installed both new elevator bungee cable springs 10940-02 - Univair
 Remove, bead blast, epoxy prime, and reinstall aileron hinge brackets on ailerons
 Repair previous damage at bottom of rudder frame (not rust) by welding tube and splice on channel
 All controls surfaces recovered and painted with aerthane per Stit's STC

FUEL SYSTEM

Fuel gauge sending units removed, reinstalled with new gaskets
 Fuel outlet screens removed, inspected, reinstalled
 New screen installed in front gascolater, Univair 750-272
 New gaskets installed in both gascolaters, Univair LAT-07
 New o-rings installed in fuel quick-drains
 Fuel selector valve seat ground with polishing compound, lubed with fuel lube
 installed new detent washer Univair 756-645 and o-ring
 All fuel lines removed from fuselage, old tape removed, inspected, re-taped with new friction tape as original configuration, and reinstalled and pressure tested
 New flush-type fuel drains installed in tanks, Univair F391-14
 New fuel hoses and S/S clamps at tank outlets

CHASSIS

New special bolt on top of steering horn, Univair 10836-002
 New tire - nosewheel
 New tubes - all 3 wheels
 New shock cords (#1080) on hydrasorbs
 New Piper hydrasorb units installed - Univair U487-558
 New rubber bumper washers on hydrasorb units - Univair 85012-057
 New bushing 86102-027 and eye-bolt 11601-002 installed on shimmy-dampener - Univair

New bearing installed at top of nose strut - Univair 400000
 New rubber bumper block on nose strut assembly - Univair
 Wheel bearings cleaned and repacked
 Installed new trailing edge on right landing gear
 Installed Piper boot (vinyl) at top of nosewheel strut
 Both landing gears recovered and painted with aerthane
 New nose wheel fairing attach bracket assembly installed

BRAKES

Old brake master cyl, parking brake valve, and brake master cyl with master cyl for individual toe brakes
 New brake linings installed on disk brake callipers at rear
 New flex hoses installed at landing gear / fuselage
 New fittings added to brake lines at wheel to facilitate

ELECTRICAL SYSTEM

New fuse block installed inside of master switch box
 New copper battery / starter cables installed per Eigen
 Remanufactured Prestolite starter installed
 Battery box modified for direct cable connection per Eigen
 New insulating strips in battery box, Univair 14070-000
 New p-leads installed
 New generator to voltage regulator wire installed
 Electric clock wiring changed to direct to hot side of master
 Installed strobe light power unit, belly and wing-tip
 New battery installed
 New clock installed in panel

POWER PLANT

Entire exhaust system overhauled, Dawley Aviation
 New tailpipe installed, Univair U11417-04
 New tailpipe support installed, Univair 15217-000
 Muffler bail installed in tailpipe, Univair U452-060
 New muffler clamps, Univair U14235-000
 New propeller bolts
 Oil pressure line - new restrictor fitting at engine, new
 installed through firewall
 Top Overhaul of engine by Flight Care, Cylinder work by
 Cylinders .010 standard
 New pistons and rings
 New valves and springs
 3 new primer nozzles
 Baffling repaired
 New baffle seal installed, Wick's SR3-1/8
 New primer line brackets installed, Univair 14470-000
 New primer line clamps installed, Univair 18307-000
 New primer lines installed
 Mags overhauled by Flightcare per work order A1065
 New quick-drain installed in oil pan, AE8068-1
 New Slick lead set installed, M2364
 Tanis pre-heat system installed, TAS100-01
 Carburetor factory rebuilt with new float and one piece
 Carb air box overhauled with new bearing kit
 Engine mount bead blasted, inspected, primed w/ Stit's epoxy
 New engine mount rubber bushings installed
 New flexible fuel hose to carb installed
 New air filter assembly BA-4108 Rev "D" and filter installed
 Propeller primed w/ Stit's epoxy, painted w/ Stit's aerthane
 New generator belt installed
 New breather tube connect hose installed

RADIOS

All new antennae cables installed
 New transponder antennae installed and wired

New bearing installed at top of nose strut - Univair 452-419
 New rubber bumper block on nose strut assembly - Univair 13114-000
 Wheel bearings cleaned and repacked
 Installed new trailing edge on right landing gear U13123-00 Univair
 Installed Piper boot (vinyl) at top of nosewheel strut (to protect bearing), Univair 14087-000
 Both landing gears recovered and painted with aerothane per Stit's STC
 New nose wheel fairing attach bracket assembly installed, Univair 15055-000

BRAKES

Old brake master cyl, parking brake valve, and brake handle removed; new rudder pedal assembly with master cyl for individual toe brakes both sides installed per Williams Aircraft STC
 New brake linings installed on disk brake callipers at each wheel
 New flex hoses installed at landing gear / fuselage pivot
 New fittings added to brake lines at wheel to facilitate addition of flex line at callipers

ELECTRICAL SYSTEM

New fuse block installed inside of master switch box - Univair 13051-000
 New copper battery / starter cables installed per Bogert STC
 Remanufactured Prestolite starter installed
 Battery box modified for direct cable connection per Bogert STC
 New insulating strips in battery box, Univair 14070-000
 New p-leads installed
 New generator to voltage regulator wire installed
 Electric clock wiring changed to direct to hot side of master switch (with fuse holder)
 Installed strobe light power unit, belly and wing-tip strobes, and wiring per Whelen STC
 New battery installed
 New clock installed in panel

POWER PLANT

Entire exhaust system overhauled, Dawley Aviation, (old tailpipe red tagged)
 New tailpipe installed, Univair U11417-04
 New tailpipe support installed, Univair 15217-000
 Muffler bail installed in tailpipe, Univair U452-093
 New muffler clamps, Univair U14235-000
 New propeller bolts
 Oil pressure line - new restrictor fitting at engine, new flexible line to firewall, new bulkhead fitting installed through firewall
 Top Overhaul of engine by Flight Care, Cylinder work by G & N Aircraft
 Cylinders .010 standard
 New pistons and rings
 New valves and springs
 3 new primer nozzles
 Baffling repaired
 New baffle seal installed, Wick's SR3-1/8
 New primer line brackets installed, Univair 14470-000
 New primer line clamps installed, Univair 18307-000
 New primer lines installed
 Mags overhauled by Flightcare per work order A1095
 New quick-drain installed in oil pan, AE8066-1
 New Slick lead set installed, M2364
 Tanis pre-heat system installed, TAS100-01
 Carburetor factory rebuilt with new float and one piece venturi
 Carb air box overhauled with new bearing kit
 Engine mount bead blasted, inspected, primed w/ Stit's epoxy primer, painted w/ black Imron
 New engine mount rubber bushings installed
 New flexible fuel hose to carb installed
 New air filter assembly BA-4108 Rev "D" and filter installed
 Propeller primed w/ Stit's epoxy, painted w/ Stit's aerothane epoxy
 New generator belt installed
 New breather tube connect hose installed

RADIOS

All new antennae cables installed
 New transponder antennae installed and wired

Genave radio calibrated, B&B avionics
Installed Sigtronics SPA-400 intercom with left and right front headset connections and push-to-talk switches on control yokes

Installed new cockpit speaker

Installed and flush riveted doublers under skin in wing root fairings where antennae mount

B & B Avionics:

King KY 97A com radio installed
King KT 76A transponder w/ encoder installed
New breaker installed for radio
Avionics master switch installed and avionics rewired through it
New com select switches for microphone and speaker installed

ENTIRE PLANE

Where possible every bolt, nut, screw, clamp, grommet, etc. replaced with new hardware - cadmium plated and stainless steel when possible

STC'S

STC #	STC Holder	Description
SA1008WE	Stits Polyfiber	Recover and repaint entire plane
SA3531NM	Bogert	Copper battery / starter cables
SA4008NM	Bogert	Battery box modification
SA3519NM	Steve's Aircraft	Skylite modification
SA8438SW	Williams Aircraft Co	Toe-brake installation
SA615EA SA800EA	Whelen	Strobe light installation
SA1493GL	Wag-Aero	Shoulder harness installation
_____	Brackett	Engine air filter installation

Proficient Pilot

Airspace and You! Part 2

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Part 1, Airspace and You, has an error. The last paragraph of the Class D discussion states that the airspeed limitation is 200 knots at or below 2,000 feet within 4 NM of the primary airport. This should read 2,500 feet above the ground. Now I'm sure us Short Wingers will

not have to worry about this restriction unless Frank comes up with an STC to install a PT-6 in our airplanes. Sorry about the mistake!

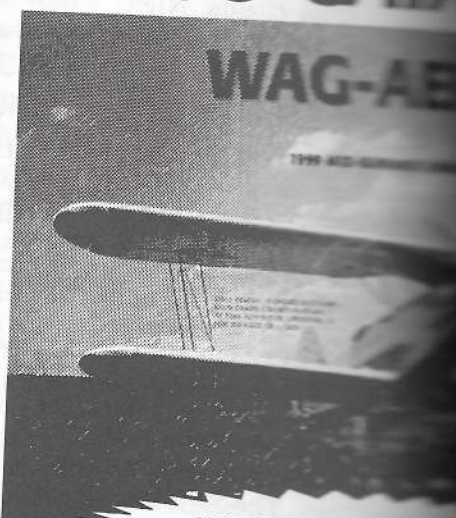
We will continue our discussion of the National Airspace System (NAS). We finished last time with Class D. In order to better understand the information we will be discussing you should have a current sectional chart handy.

Class E airspace is best defined as controlled airspace that, unless designated at a lower altitude, starts at 14,500 MSL and goes up to but does not include 18,000 feet MSL. Most of the time Class E starts well below 14,500 feet MSL.

Normally Class E airspace starts at 1,200 feet AGL. De-

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