

**Hatz of the month:**

**Radial Hatz Bantam**

**Mark Marino**

**Hangar 10 Aero, Duluth, MN**

**A**longside HBA Director North Mark Marino's Hatz Bantam kits and his impressive new Hatz Aluminum Wing, the first Radial Hatz Bantam is nearing completion, as could be seen at the HBA gathering in Brodhead last year. We asked Mark to comment on the status of his latest creation, and he obliged with the following report.

Currently, at Hangar 10 Aero, we are working on a third Hatz Bantam with a round engine light enough for the Bantam airframe - the Verner 7U! At 180 pounds and 124hp, the 7U is almost exactly the same weight as a Jabiru 3300 or a UL Power 350is. Not only is the 7U light enough, but with direct drive, it sounds like a radial engine should.

Builder John VanderHorn and I are in the process of developing a FWF for the 7U with a full cowl,



including inter-cylinder baffles, exhaust collector, engine ring, oil tank and engine mount. We decided to turn the exhaust headers inward toward the center of the engine to reduce the overall diameter of the collector, helping to save weight and to fully enclose the exhaust system. A biplane with a radial engine always gets your heart racing and the 7U is perfect for the Hatz Bantam.

**More Hatz Bantam News:** In the process of building the second Hatz Bantam (N1968H), we learned that building the top wing



**What's inside this month:**

Hatz of the Month: Radial Hatz Bantam	1
The View from Above, Hatz Canopy, by Jeff Orear	2
Builder Progress, Larry Clements' CB-1	5
HBA Latest Club Newz	6
Member Shops and Events	7
Touchwood for Aircraft Spruce	8
Kevin Kirtley and CB-1 "Belle"	10
Scott Bell's CB-1 Flies Again	14

*continued on pg 4*

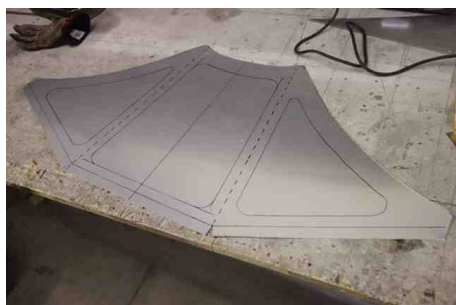


## The View from Above

**Jeff Orear, President**  
Hatz Biplane Association



I've been asked to outline how I made my windscreens for my Classic. I must preface all this by saying that I am no metal working expert. The materials and techniques I used are an amalgamation of those that I have seen implemented by other builders, so I really can't take credit. First, I used the drawings of the windscreens that were provided on the plans to make templates. These were used to cut out the basic shape of the frames in 3003 aluminum. This is a very workable aluminum alloy, and my first impression was that the frame would not be strong enough. More on that later.



I wanted to have a nice radius at the bends which also helps to make forming the flange at the base of the frame, so I made a bending form to use on my Harbor Freight bending brake.



The retaining slots for the lexan were then bent at the aft edges. Because the frame had been bent, I could not use my bending brake, so I clamped a piece of steel angle to the table and used a soft mallet to form the first bend. Then I used a piece of 1/8" ply to make the second bend and form the slot for the lexan. Next, the challenge of



bending the flange at the base of the frame is tackled. To do this, I modified a joggling tool....actually two of them.

The edge of the aluminum is placed between the two sets of rollers, making sure it is inserted all the way to the base of the tool. Then as I slid the tool along the edge, I gradually bent the aluminum. Of course, the most challenging aspect was going around the corner. Because the 3003 aluminum is so workable, persistence prevailed. The fit of the frame is checked as the flanges are bent, then it is located and clecoed in place.



The cutouts for the lexan are then done. The area where the flanges meet for the slots that retain the lexan at the upper corners of the frame were then welded by a master welder I know, as I would have ended up with an unrecognizable glob of aluminum if I had tried my hand at it.

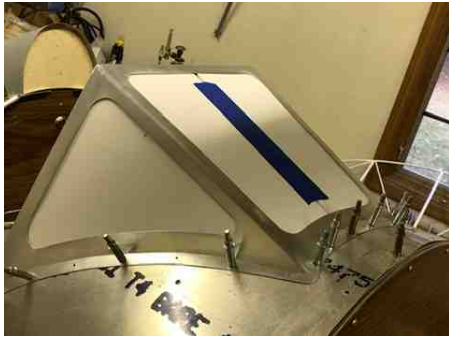


*continued on pg. 3*



continued from pg. 2

Next comes fitting the lexan. I first made a template out of 1/8" foam board which was made in two halves. This allowed me to get a good fit.



I made a bending device from ideas I found on YouTube. The nichrome wire I used is 20 gauge and the power source is a car battery charger set on the 50 amp start mode. I let the wire heat up the lexan, which still has the protective covering on it, until I could see the covering get a slight glaze to it. I made a gauge that I used to determine the proper amount of bend I needed.



The upper corners where the welds in the frame are located required some rounded slots to clear the welds. The bottom of the lexan was fine tuned to make it rest on the fuselage skin when inserted in the frame. As I noted before, the aluminum frame is a bit flimsy, but once the lexan is in place, and the whole works is



screwed to the fuselage skin, it becomes solid as a rock.

I hope this has been helpful. I was pleasantly surprised at how this turned out. I think I get a majority of my pleasure in building by challenges like this where a plan has to be derived and then seeing that plan be successful.

Hatz building, and as always, remain calm, and Hatz on!

**Jeff Orear**



*This 1917 Nieuport 28 C-1, serial number 512, was owned and flown from the 1930's through the 1960's by movie pilots Frank Tallman and Paul Mantz of Tallmantz Aviation in Santa Ana, CA and was used in a number of movies and television shows. Now owned by the Collings Foundation, its restoration was just completed by Mikael Carlson of Sweden. The first flight from his home airfield will take place soon.*



in one piece would not only save a fair amount of weight, but also reduce the parts count and make it much easier to build. We powered N1968H with a 130hp, fuel injected UL Power 350is. The "Super Bantam" was born. The empty weight came in at 767 pounds...probably a record for any Hatz.

We also learned that most pilots incorrectly thought the Bantam cockpit was smaller than the CB-1 or the Classic. So we tooled up to make a completely welded fuselage package that is 2" wider (same width as a Champ) and 1" higher (between the longerons) to allow the pilot to sit slightly lower and add more leg room. Our new fuselage is wider and deeper to address builders who want more room.

Windshield turbulence has always been a topic for Hatz builders. With concerns of wind down the back of your neck, front

windshield angle, curved vs three panel designs, etc, we decided to try a Pitcairn style four panel design that hopefully will slice through the air easily with less drag and turbulence. Plus, we like the way it looks.

The Bantam wings have always had pressed aluminum ribs and Sitka Spruce spars. Building the top wing in one piece requires 21 foot spars. Because of issues with availability, quality, and price, we decided to replace the wood with custom extruded aluminum spars. We also decided to get rid of the challenging job of bending aluminum skins around the nose ribs. A custom extruded nose channel matching the Clark Y airfoil did the trick.

One concern I have had is how to balance the two rear parallel flying wires. If the two wires are not equally tensioned, only one wire is carrying the load. I made a two piece "balancing" lug with a

swivel to keep the two wires equal in tension. Our lugs are machined out of stainless steel, but the same concept could be used with welded lugs as in the CB-1 plans.

Every day is a play day here. Check out [hatzbantam.com](http://hatzbantam.com) for more pictures. I am also posting on Facebook (Hatz Biplane, and on Verner Motor Owners). It is too cold to fly up here in Duluth...just have to keep building!

**Mark Marino**



**Builder Progress**  
**Larry Clements CB-1**  
**Verona, WI**  
**Hatz Biplane Association**

**M**y name is Larry Clements and I am currently the secretary of Chapter 431 here at Brodhead airport in Wisconsin. I want to send out a big thank you to Ted Tracy for his kind remarks concerning the Brodhead Pietenpol/Hatz fly-in this past year. I should tell you that I am also the President of the Pietenpol organization and in my fourth year of construction of a Hatz CB-1. I also take care of four other airplanes at a private airport in Verona WI, which includes a 1946 Stampe SV-4, 1946 Champ, a Low Camp, (Italian kit plane) and a Pietenpol. How's that for being a busy guy?

I am not a A&P but have been building engines all my life. Everything from Triumphs, Older Mercedes (early 50's) to street rods and Alcohol funny cars. When I retired my wife thought I was going to build another street rod, but I fooled her and started to build the Hatz. I've been building RC airplanes all my life and got talked into building a full size airplane. What are friends for, right?

Just to give you a short up date on it's development it is progressing nicely, and at a good pace. The wings are done and sitting in the racks waiting to be mounted. I should just say everything is built waiting to be mounted. Just finished painting the fuse, and every item that goes



in or around it is laid out waiting it turn to be bolted or wired into the fuse.

The motor is a new Superior 0-320 150hp with two new Slick mags. Still looking for the proper prop. I just purchased a set of Acme Aero landing struts and a T-3 tailwheel to smooth out the landings. Can't wait to get the fabric on and painted. I'm using Sikkens paints, Dodge Viper Red with cream colored wings. It should stand out if you go by the color on the "N" struts and landing gear.

I started by buying two partially completed CB-1 air frames and ended up with a set of covered wings and a "mostly" completed fuselage. I took all the best parts from both and sold what was left on Barnstormers. I stripped the covering from the wings just to check them out as the covering job could have been better. I found a few minor discrepancies that I was able to fix without too much



problem, along with redesigning the center section trailing edge, which only took six months. Time just seemed slip away.

Then late last summer I found a wrecked CB-1 out East that only needed the landing gear fixed. Well now I have torn the whole fuselage down to the bare frame and I am rebuilding from the ground up. I had to repair one bent tube, and it has now been blasted and painted with chromate primer with a topcoat of tan. The N struts, cabanes, and landing gear are painted Dodge Viper Red, as will be the fuselage. All the small pieces inside and out of the fuselage are done in black. I upholstered the seats in a dark brown distressed leather with red piping, and the birch floors and dash panels along with the headrests are stained with a teak finish. I'm still working on those.

I'm in the process of rewiring the whole panel with better gauges and more circuit brakes, plus a real bus bar as it has everything running from one hot wire and one ground.

**Larry Clements**

# HATZ BIPLANE ASSOCIATION

## LATEST CLUB NEWZ



### Officers and Directors

President:  
Jeff Orear 715-923-2613  
jorear@new.rr.com

Vice President:  
Mark Taylor 513-907-5571  
hatz493@hotmail.com

Secretary:  
Rick Shultz 937-728-1028  
rfs1260@yahoo.com

Treasurer:  
Jeff Moore 765-425-6248  
hatz248@aol.com

Director Tennessee:  
Mark Lightsey 951-378-8980  
mark@aerocraftsman.com

Director North:  
Mark Marino 218-310-2333  
markm@hatzbantam.com

Director East:  
Rob Lynn 304-892-4515  
Citabriarob@hotmail.com

Director West:  
Jeff Cain 303-722-4311, cell 303-886-5276, biplane@ix.netcom.com

Director International:  
Hans Gautschi +41 79 408 56 92  
hans@aeroplaneworks.ch

Webmaster:  
Doug Mowry  
admin@hatzbiplane.com

Newsletter Editor:  
Kent Misegades 910-568-2580  
kent@aerosouth.net

Official Address:  
Hatz Biplane Association  
9981 S. 50W  
Pendleton, IN 46064 USA  
www.hatzbiplane.com

archive at [aerosouth.net/hba](http://aerosouth.net/hba)

### Will 2022 be a record year for the Hatz?

As this and other issues of the HBA Newzletter shows, many Hatz builders are nearing completion of their projects. While I do not have any recent records of completions per year, my sense is that 2022 will see many **first flights**, perhaps a record in this century. If you are one of these, be sure to let our President, **Jeff Orear**, know, and send me some images and a short description so that we may all congratulate you on what is always a tremendous achievement. And it does not matter if you built your Hatz from scratch, restored an existing one, created a Frankenplane from several wrecks (see **Larry Clement's** story in this issue), or simply gave your bird a nice refresh or added a new flux capacitor or similar addition.

HBA President Jeff Orear and Treasurer Jeff Moore have been working behind the scenes on the **Association's web site**, which has served well but is in need of a face lift. More news coming, stay tuned...

Thinking ahead to the **2022 Fly-In season**, here's hoping we can start things off with a bang again at **Sun 'n Fun**, scheduled this year for **April 5-10**. If you are planning on attending, please let me know so we can plan another luncheon get-together. See the next page for a current list of events in the U.S. that traditionally attract Hatz owners and fans. Please send me others for inclusion.

I've also started tracking **events outside the US**, so you nice folks overseas please remember to send me information on aviation events in your countries, too. HBA members do get around, and what could be more fun than foreign travel scheduled around local aviation events? The only challenge would be doing this without our wives' knowledge, and simply stumbling across them during travel...

**Kent Misegades, Newsletter Editor**

### More Newz from the Editor

- Thanks to **Mark Marino, Jeff Orear, Mikael Carlson, Larry Clements, Kevin Kirtley and Scott Bell** for their contributions to this issue.
- Get your **Hatz embroidered logo gear** now from **Land's End** at <https://business.landsend.com/store/hatzbiplane/>
- An **archive of HBA Newsletters** can be found now at **aerosouth.net/hba**. This page is hidden from the general public.

The **NEWZLETTER** is published on a regular basis by the American Hatz Association dba Hatz Biplane Association, founded by **Lorin and Mary Jones Wilkinson**, Past President, Emeritus, for Owners, Builders and Lovers of the Great Little Biplanes Inspired by John Hatz.

More than **50 YEARS of Happiness**

Hatz CB1 Kelly-D Hatz Classic Hatz Bantam Vintage Hatz



# HATZ BIPLANE ASSOCIATION MEMBER SHOPS & EVENTS



With international air travel slowly returning to normal, we can expect the cork to pop on a bottle of pent up desire for our fellow aviators to meet at events such as this one planned for late May at the historic aerodrome in Cerny, France (just south of Paris), "**Le Temps des Hélices**", which roughly translates to "the era of propellers". Seeing posters like this one sure gets my attention, for the aircraft, of course! This airfield is home to the famed **Salis Flying Museum** with some 50 vintage aircraft, most of them airworthy. To keep a-breast of aviation events in Europe like this one, here is one good web site among many over yonder:

<https://www.air-shows.org.uk/2021/02/european-airshow-calendar-2022/>

1999 "Tommy Hawk", built by Elwood Haston and registered to Robert Ueck of Minnetonka, MN.



## 2022 EVENTS

February 5th, Chili Chilly Fly-In, Triple Tree Airport (SC00), Woodruff, SC, USA, [tta.aero](http://tta.aero)

April 1-3, Uncle John's Fly-In, Triple Tree Airport (SC00), Woodruff, SC, USA, [tta.aero](http://tta.aero)

April 5-10, Sun 'n Fun Aerospace Expo\*, Lakeland Linder International Airport (KLAL), Lakeland, FL, USA [flightsnf.org](http://flightsnf.org)

April 27-30, AERO Friedrichshafen, Germany, [www.aero-expo.com](http://www.aero-expo.com)

July 21-24, Hatz/Pietenpol Fly-In\*, Brodhead Airport (C37), Brodhead, WI, USA, [eaa431.org](http://eaa431.org)

July 25-31, EAA AirVenture\*, Wittman Regional Airport (KOSH), Oshkosh, WI, USA, [eaa.org](http://eaa.org)

September 1-4, Antique Airplane Association Homecoming & Fly-In, Antique Airfield (IA27), Blakesburg, IA, USA, [antiqueairfieldia27.com](http://antiqueairfieldia27.com)

September 17-18 Meeting Aerien, Armor Aéro Passion, Morlaix, France, <http://aeropassion.fr>

September 19-25, Triple Tree Fly-In\*, Triple Tree Airport (SC00), Woodruff, SC, USA, [tta.aero](http://tta.aero)

\* - official HBA events

Please send event notices to the newsletter editor, Kent Misegades.

## Touchwood for Aircraft Spruce

by Kent Misegades  
Hatz Biplane Association



As I have mentioned in a past issue, some years ago while visiting an EAA buddy living in southern Sweden my wife and I had the great pleasure to meet one of the world's foremost creators of early aircraft replicas, Mikael Carlson. A picture of his latest progeny, an authentic WWI Nieuport fighter, restored to airworthy condition for the Collings Foundation, appears on the bottom of page 3.

Mikael and I have stayed in contact since our visit, so when it came time to find a source of aircraft spruce for my CB-1, I was curious where he got his. This was prompted in part by the few choices of suppliers for such things that one has these days.

Mikael quickly responded to my inquiry. Much of his wood comes in fact from trees on his own farm, location of his workshop and airstrip. For the critical, load-bearing Sitka spruce however, he turned to a company in The Netherlands called "Touchwood". ([sitkaspruce.nl/](http://sitkaspruce.nl/))

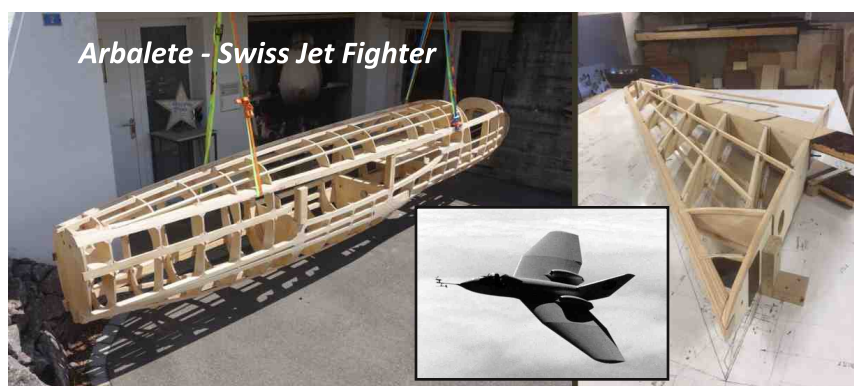
Not surprisingly, Touchwood gets its spruce from British Columbia, Canada. In the town of Terrace along the Kitsumkalum River they own a lumber mill where the trees are cut to smaller lengths before being shipped to their facility in Schijndel, just south of s'-Hertogenbosch (got that?). At their modern mill in Schijndel the logs from Canada are further cut, selected and



*DeHavilland Mosquito*



*Nieuport 28*



*Arbalette - Swiss Jet Fighter*

tested for appropriate use.

If you were wondering if the market in Europe for homebuilt wooden aircraft is so large that the expense of shipping massive logs halfway around the world makes sense, in reality Touchwood's largest markets are for musical instruments (think Steinway in Hamburg, Germany) and vintage sailing yachts, with their enormous spruce masts and spars.

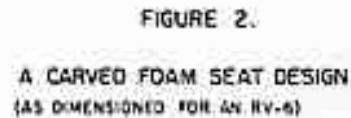
Fortunately for aircraft builders, one of the owners of Touchwood, Ernst Boucher, flies a Jodel DR1050, a classic French

homebuilt made mostly of wood. It was a precursor to the popular "Robin" line of aircraft seen often across Europe.

Images shown here are some of the projects incorporating Touchwood's aircraft spruce. While the company currently has no plans to supply its products directly from North America, they do ship around the world from Holland. For more details, contact the company through their web site and ask for Ernst Boucher.

**Kent Misegades**





PAGE 9

## Kevin Kirtley and CB-1 "Belle"

Hatz Biplane Association



What do you do when your life is upended in profound ways? For me I doubled down on myself and my passion for flying and bought a Hatz. Upending is not necessarily a bad thing. It can bring about rewarding changes in your life and that of others.

Two years ago, I was finishing my career as an engineering leader for a manufacturer of jet engines which was stressful enough, but the Covid-19 pandemic was significantly curtailing air travel and the revenue it brings to my business. My teams in the US and across the globe were shrinking to reduce costs and the remaining were scattering to the safety of their homes. Some individuals were working on a laptop between their microwave and panini press and I had to keep them engaged and motivated and delivering on their technical goals 24/7.

At the same time, I was taking care of my mother, who was facing into Covid lockdowns and dementia with a bravery I had never seen. To be with her, my partner Deb and I were frequently flying to Naples Florida from South Carolina in my '62 Piper Comanche 250. "The Beast" served us well. It was fast and capable, always fueled up and ready for the 3.5 hour flight at any moment my mom needed me. But the frequency of those flights and my business commitments left no time nor even desire to fly for fun.



*Above: Belle with the author, ready to practice wheelies at KGMU, Greenville, SC. Right: "The Beast", Kevin's Comanche traveling machine.*



As the pressure built, I felt the need to get a just-for-fun airplane I could kick the tires and go fly simply to keep me balanced and manage my stress. I opened Barnstormers one evening and was looking for a Short Wing Piper like I had owned in the past. Those memories brought me back to a Sentimental Journey Fly-in in Lock Haven PA where I first saw a Kinner radial powered Hatz. What a beauty. I typed "Hatz" in the search page and up popped N3250A, a CB-1 with cylinders in the wind and no electrical system. Just a stick and throttle and a breeze down my neck. That's what I needed; that's what I wanted. I called the owner Stan a few days later and we talked for a long time. He gave me the history and said he flew it about 20 hours a year just chasing cows in the heartland of Texas. Stan had a

Mooney and flew that much more often and felt it was time to sell the Hatz. Stan came across as an honest man. I paid his price without ever putting my hands on the airplane.

The Hatz started life in the hands of Mr. A.G. Quarton in Oakland CA. According to Stan, 3250A was Mr. Quarton's sixth homebuilt aircraft hence the AGQ-6 serial number. I don't know much about the build. The airframe log has an "OK to cover" sign off in 1982 and an Airworthiness Certificate 8 years later. 40 years after that, it has only 240 hours on it. Registered as a CB-1, 50A now sports an experimental Lycoming O-320 replacing the O-290 it originally had. With an 18-gallon fuel tank, 80 mph cruise, and some fuel

*continued on pg. 11*



## Kevin Kirtley and CB-1 "Belle"

Hatz Biplane Association



*continued from pg. 10*

reserve prudence it takes a lot of legs to get across the country.

Stan had the airplane ferried from Oakland to Texas and it took 16 fuel stops to get there. It looked like 3 to 4 days to get it to South Carolina, and I did not have the time or the skill to pull that off in an airplane I had never flown so I elected to have a professional ferry the Hatz. In stepped Marie-Claire who in her spare time flies a Pitts S-1S at the Reno Air Races. Marie-Claire and her husband Kevin are aviation professionals, and their passion is racing their pair of Pitts.

It was a scary time for all of us in aviation two years ago as jobs dried up as people stopped flying. I was happy to be calling them to get the Hatz and check me out in it. To make the trip, Marie-Claire needed stable VFR weather in April for the expected 3 days of flying and it took several weeks to find a window. In that time my mom passed away with me and Deb by her side. We flew home in The Beast the next day and parked it for a while.

Covid was now creating its own headwinds with fuel shortages and hotel uncertainties. But on April 13, Marie-Claire launched with a tailwind. That night she texted me "1.4 hrs at 2200 rpm, 10gal! She's a delightful bird and so easy to fly, you're going to love her. Great fabric and strong engine. Gonna stop here in Waco for the night and hit



*Left: Marie Claire preparing to ferry La Belle from Texas. Right: The bare bones panel ... all you need.*



*Above: Warning to passengers. Right: My constant co-pilot Deb.*



it early tomorrow am." Stan had sold me what he told me. I relayed the good news to Deb. "Well, we already have The Beast ... we should call her 'Belle'".

At Marie-Claire's grass airstrip Meadowlark, south of Atlanta, I took possession of Belle. Kevin, a jet pilot, pilot examiner and accomplished Pitts racer, gave me the checkout. I had about 200 hours in my old Pacer over 25 years ago, but I was rusty with only an hour in the back seat of a Champ as a primer before I drove to Meadowlark. The checkout was straightforward with some helpful tailwheel tips. "Let the runway come to you" was Kevin's mantra over the noise of the O-320 during landing practice. I wasn't going to roll Belle into a ball and Kevin signed me off warning me to avoid crosswinds landings until I had

more practice.

With Marie-Claire's cross-country experience they estimated I had about 8 gallons of fuel to get me to the nearest avgas about 30 miles away. With Deb on the ground filming and Marie-Claire and Kevin cheering me on, I launched into a high overcast sky with the sight fuel gauge bouncing near bottom. I was now an open cockpit biplane pilot ... and a very cold one at that but when I looked from wing tip to wing tip my grin got just as wide. I made two stops on my way to Greenville SC. I survived the first solo landing on asphalt but not before a wing came up on

*continued on pg. 12*

## Kevin Kirtley and CB-1 "Belle"

Hatz Biplane Association



*continued from pg. 11*

me. Oh yeah, that stick means something on landing. The fuel pump worked and I stuffed 14 gallons into it. The second landing was marginally better, but the airport fuel pump did not work. I checked the flying time and had enough fuel to make it. What I did not account for was using a handheld radio with a loud buzz in my ear to get into my home field's class D airspace. Even using my best IFR voice and phraseology I was lucky to get my clearance. As the sun set that day, I was tired and thrilled and The Beast had Belle as a stable mate.

N3250A is a bare bones baby weighing in at 922 lbs and max gross weight based on whatever can fit in the front cockpit. Every flight I feel a little like a test pilot. She has a battery and starter but no generator. Stan claimed you can get 16 starts on one charge based on the ferry from Oakland. I believe him but I keep a BatteryMinder on it when not flying. Everything else is no frills including the minimalist instrumentation.

I discovered the ammeter is just for show and is not even hooked up. Even the paint is simply Stits UV-blocking silver primer with a green accent strip. Maybe one day I'll paint it or maybe that will be too fancy for Belle. She's just for flying and more specifically for flying with someone if they can get into the



*Belle spotted at the Triple Tree Aerodrome Fly-In, September 2021.*

front cockpit. Fortunately, my partner Deb loves to fly and can get into the front seat and we tool around the Upstate region together admiring the beauty of the North Carolina mountains to the north, expansive farmland to the south, and Lake Hartwell to the west. But Greenville is busy airspace with a lot of business jets and tons of flight training, so communication and monitoring traffic is key to safe flying.

The handheld radio used to be connected to a standard AV-534 whip antenna forward of the front cockpit. About three minutes after takeoff, I would get a buzz so loud in my headset I could barely hear the tower, although some stray FM radio station seemed to come in clearly at times. I figured it was a poor ground plane or static electricity building up (at 70 mph? nah). I tried a Lynx ¼ wave whip located in front of the rear cockpit. That behaved similarly and my attempt to use an Advanced Aircraft Electronics VHF-5 antenna suspended inside the rear fuselage

gave me an unsatisfying SWR of 2.6 and complaints from the tower. What works best is the antenna that came with the handheld ... it must be a ground thing ... I'm not giving up.

Another key to better communication was connecting the radio to the aircraft battery for max voltage instead of relying on the AAs in the device. I added a voltmeter to monitor battery health. For situational awareness I use a portable Stratos ADS-B in receiver suction-cupped to the floorboard and tethered to my iPhone in my pocket. With more pilots keeping their head in the cockpit watching the fish finder I need to have that picture too so I know who doesn't see me. An accurate position report also lets the tower controllers ID that pesky primary target (me) and I can time my arrivals when there are gaps in the jet traffic. None of these gadgets detract from the open cockpit experience as there

*continued on pg. 13*



## Kevin Kirtley and CB-1 "Belle"

Hatz Biplane Association



*continued from pg. 12*

are lots of cows to chase and waterfalls to view where no one else is in the sky.

During my checkout pre-flight, Kevin, also an A&P, pointed out flying wire tension that seemed unbalanced. Sure enough, at certain airspeeds the left javelin would vibrate more than the right. I thought it would be a simple process to track down what the tension should be but it all seemed like folk lore. From a "B flat" tone to the "50 and 1 rule" all explanations seemed

unsatisfying. Having formal training long ago in computation aerodynamics I figured I could work this out. What I measured using a Holloway torque-based tensiometer seemed pretty low and variable, 100 lbs. to 130 lbs. and everything in between. But the wings haven't fallen off yet. Further, if you assume a max weight of 1400 lbs. and the 6 wires carry nearly all the flight load equally, at +5 Gs those wires will hold about 2200 lbs. each, well below their minimum strength capability. Preload is not additive to the flight loads wires can carry so why preload? The answer is simply to avoid high cycle metal fatigue from vortex shedding behind the wires. Vortex shedding is a function of flight speed and trailing edge diameter (look up Strouhal Number). That shedding induces motion in the wire which is a function of the preload. The



*Above: Belle spotted at the Triple Tree Aerodrome Fly-In, Sept. 2021. Right: A gathering of children and parents at KGMU's playground admiring Belle.*

aeroelastic response of the wire can be very complex with torsional and longitudinal modes when using streamlined wires. If the stress and cycles are too great you can exceed the fatigue strength and quickly have a problem. Alas my education is insufficient beyond this point but I'm working to figure it out and build a fatigue curve. What I'm not going to do is preload the long flying wires to 400,000 lbs to get a middle B flat tone. However, 50 lbs on the fish scale with 1 inch deflection equates to just over 1000 lbs and maybe that's a good number.

Since I bought Belle, I retired from my career and decided to move to Boise Idaho to go fishing and hiking with my son. I will miss KGMU with its aviation-themed playground and Runway Café. One afternoon during a veritable heat wave in December, I took Deb's son Anthony flying around the mountains. What he loved best



and now viral on Instagram was the passenger warning in front of him. With Deb watching we taxied back past the adjacent playground. It was full of children gawking at Belle taxiing by and the ramp was clear of all aircraft except for us. Remembering my days hanging on the airport fence wishing to get close to those machines, I taxied over, kicked Belle around and pulled the mixture. With Deb watching the ramp monitoring safety, I climbed out, went to the fence and I called the kids and parents out to touch Belle, move the stick, ask their questions, and deepen their understanding of what flying is. Belle maintained her poise. In at least one child I hope I was able

*continued on pg. 14*

## Kevin Kirtley and CB-1 "Belle"

Hatz Biplane Association

*continued from pg. 13*

to spark a passion for flying that I've always had and perhaps the desire to build a Hatz one day.

I've since charted a course to fly her out to Boise where I have a hangar and there are abundant elk to chase and back country airstrips to enjoy. I would need over 20 fuel stops and 30 to 40 hours of flying over perhaps a week. I'd need at least a few hours at 8500 feet through some high valleys to get into Idaho. All doable but perhaps not prudent so I'll crate her up and ship her to Boise where the Beast has already set up home ... or maybe I'll call Marie-Claire again.

**Kevin Kirtley**



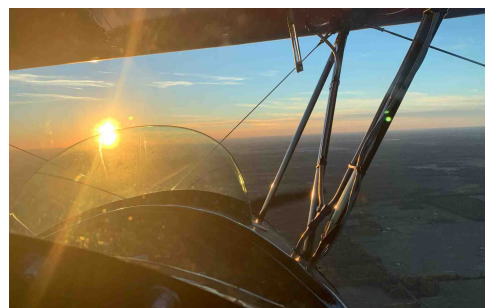
*Above: Belle being prepared for shipment to its new home in Idaho.*

## Scott Bell's CB-1 Flies Again

Hatz Biplane Association



Back in May of 2021 Scott Bell of McAlpin, FL, took delivery of Hatz CB-1 N680SW, a Lycoming O-290 powered version originally built by Samuel Weaver. Images from his face-lifting appeared in the July 2021 issue of this newsletter. Scott's pretty CB-1 recently took again to the skies and he sent us these pictures. Congratulations, Scott!






# Hatz Biplane Association

## The Great Stuff for Sale Page



PLEASE PATRONIZE HBA MEMBER  
BUSINESSES! WANT TO SEE YOUR  
BUSINESS CARD BELOW? CONTACT THE  
EDITOR FOR OUR REALLY CHEAP OFFER!



**PolyFiber Distributors**  
**Mark and Sheila Lightsey**  
951-378-8980  
Weakley's Field Pleasant View, Tennessee  
mark@aerocraftsman.com www.aerocraftsman.com



*Sailboats - Engineering Education - Aviation*  
**Kent Misegades**  
Owner & President  
kent@aerosouth.net  
www.aerosouth.net  
Seven Lakes, NC  
910-568-2580



Show your **HATZ PRIDE** by wearing your Land's End Logo Gear or by buying a Hatz T-shirt like the ones shown above. Contact the NL editor Kent Misegades to get a T-Shirt while they last!



### Plans



#### ORIGINAL HATZ CB-1 BIPLANE PLANS

A complete set of Hatz CB-1 plans, as drawn by Dudley Kelly!

Your plans set will carry its own serial number and will include weight/balance calculations, flying wire dimensions, a full-scale wing rib template drawing and more. Time to start building that Hatz!

**\$200.00 US each**



#### ORIGINAL HATZ CLASSIC

Your plans set will carry its own serial number and include all the information you'll need to build your Hatz Classic.

**Plans \$250.00 US each**

Preview Drawings \$45.00  
Construction Photos \$25.00 Set  
Or get both for one price!  
Non-members \$60.00 Members \$55.00



#### ORIGINAL KELLY-D BIPLANE PLANS

The "simpler Hatz", designed by Dudley Kelly. Without a center section and with most of the curves squared-off, the Kelly-D is distinctive, yet flies much like the Hatz.

Your plans set will carry its own serial number and include all the information you'll need for that one-of-a-kind Kelly-D.

**\$150.00 US each**

### Hatz Biplane Association Back-issue Newzletters



The Hatz newsletter back issues are available on a thumb drive. All issues from volume 1 number 1, through the current issue are present, with many of the pages in full color. The newsletter is in Adobe PDF format and is displayed exactly like the original paper master from which it was scanned. All text, photos, and advertisements are here. The Hatz Biplane Association history and communal support are presented in detail. Research in topics of interest can be investigated through the word search capabilities imbedded in the PDF file. All of the pages may be printed by the enthusiast (in color and/or black and white).

Computer requirements: USB port and software to read the newsletter (PDF version 1.5). Software is freely available from ([www.adobe.com](http://www.adobe.com)). Adobe Reader version 4 works fine, though Adobe Reader version 5 or greater is recommended for word search capability.

#### Newzletter back-issues

Hatz Biplane Association Member's price: \$20.00 U.S. each  
Nonmembers price: \$45.00 US (Thumb drive and 1 year HBA membership)

TO ORDER PLANS AND BACK ISSUES, SEE  
[WWW.HATZBIPLANE.COM](http://WWW.HATZBIPLANE.COM)  
HBA STORE PAGE



Order your own **Hatz Biplane Factory** sign from HBA member **Bob Burkholder** for only \$50!  
bobsairplane@gmail.com

ORDER YOUR HBA LOGO GEAR NOW!

[HTTPS://BUSINESS.LANSEND.COM/STORE/HATZBIPLANE/](https://business.landsend.com/store/hatzbiplane/)



## Hatz Biplane Association Membership/Renewal Form

*\*\*Please update information and return promptly! Also put any news or project information for the newsletter on the back.\*\**

Name/Spouse Name: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Country: \_\_\_\_\_

Home Phone #: \_\_\_\_\_ Cell Phone #: \_\_\_\_\_

Email Address: \_\_\_\_\_

*The Association's newsletter is paperless. Please look for future issues in your email inbox.*

Membership Locator: Do you wish to have your information added to our online member locator? YES NO

### Base Airport:

Name: \_\_\_\_\_

Identifier: \_\_\_\_\_

City/State: \_\_\_\_\_

### Hatz Project/Aircraft or Other Aircraft Owned:

Year:	Model Name:	Serial #:	N#:	Flying	Project
_____	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>

**!!!! NOTICE DUES INCREASE !!!!**

**\*\*\*\*\*Annual Membership Dues Are Now: \$25.00\*\*\*\*\***

**You can pay by check or PayPal**

**To pay by check please send this form to:**

**OR**

**To pay using PayPal send an email to:**

Hatz Biplane Association  
9981 S. 50 W.  
Pendleton, IN 46064  
(c)765-425-6248

hbatreascb1@gmail.com  
Include this form as an attachment  
You will receive an invoice.

***Please make sure you return the completed form with your membership dues request.  
Thank you in advance for your cooperation and support.***