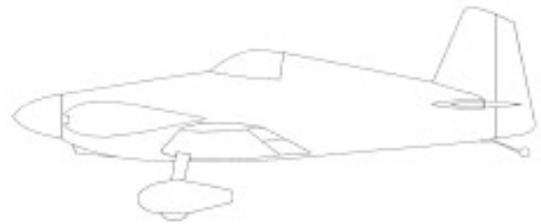

MUSTANG

News & Views

Volume 16, No. 1 (mailed 7/05)



The Midget Mustang and Mustang II newsletter for Builder's, Owner's, and Dreamers.



*Mustang II First Flight Feb. 12, 2002
by Mark Doble Tampa, FL*



*Midget Mustang
by Daniel Beltrame of Italy*

Mustang Aeronautics, Inc.

1470 Temple City
Troy, MI 48084
USA



<http://www.MustangAero.com>



MUSTANG AERONAUTICS 1470 Temple City Troy MI 48084
Voice (248) 649-6818 Fax (248) 649-0098
<http://www.MustangAero.com>

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An alternate source for answers is the e-mail builder's list at <http://groups.yahoo.com/group/mustangaero>. Information on how to subscribe to the list is on our website.

On The Cover

Mark Doble's Mustang II made it's first flight on February 12th, 2002 in Tampa, Florida. See the article on page 8 of this newsletter for more details.

Daniel Beltrame of Treviso, Italy made the first flight in his Midget Mustang this past February. It has an IO-320-B1A 160hp Lycoming engine with a special 68" MT Prop and a 4 into 1 exhaust. It was built from a Bushby kit. Daniel made his own fiberglass parts. Empty weight is 910 pounds and he has a gross weight of 1200 pounds. 70% power yields 210 knots and he reports an initial climb rate of 3400 ft/min. Stall speed is close to 50 knots. "My bird is perfect, after 14 flights no problems no vibrations. Flying at 210 kts I dive only 500 feet and I pass 260 kts and I maintain this speed for 10 minute with 90% power. When I land the people see me and ask if I have afterburner!". Earlier this year, he flew a formation flight with an ultralight at 70 kts and found that his Midget flew very well. He later flew a formation with an F-104 Starfighter. After 50 years of flight, this is the last year for the Starfighter in Italy. He has posted more pictures on the Midget Mustang Builders Group <http://groups.yahoo.com/group/M1-Mustang/>.

Newsletter Notes

We apologize again for the delay between issues and will attempt to resume our bi-monthly publication as soon as possible. We have been extremely busy with kit production and improvements. Anyone wishing to submit an article may do so by contacting our News Department through either our e-mail or general mailing addresses. As always, your comments and input are welcome.

It is the intent of this newsletter to express the ideas of other builders. No warranty, expressed or implied, shall be given.

Calendar of Events

Oshkosh Airventure 2005

July 25 - July 31 Oshkosh, WI

We will be in the same location as the last couple of years, booth 433 in the north aircraft display area. The Mustang Forum will be on Wednesday the 27th and the dinner will be at Robbins on the same day. Please check our booth for details if you plan to attend.

2005 Mustang Openhouse

September 17th Troy, MI

Our annual fly-in openhouse is Saturday, September 17th. We will be conducting tours, have kit displays, some mini forums, hands on riveting, doing some flying, and grilling burgers for lunch. Pilots that fly their Mustangs in will get a free lunch. A shuttle to and from the factory will be available at the Oakland-Troy Airport (7D2).

For more information and the latest updates visit our website at <http://www.MustangAero.com> and click on *News and Events*. Hope to see you there!

New Mustang-II T-Shirts



Spotter Shirt
\$11.00

WWII Style military spotter shirt. Logo on the front and spotter info on the back.

Top 10 Shirt
\$11.00

White T-shirt. Mustang graphic on the front with the top 10 reasons to build a Mustang on the back.



Now Available!

New IO-360 Engine Cowl

Our new fiberglass engine cowl for the IO-360 200 hp and M2YR Hartzell prop is now being manufactured by James Aircraft. It is available through Mustang Aero for \$975.00, freight collect. The fiberglass engine cooling plenum is also available for \$407.00. There is a carbureted version as well.



Brian Schmidtbauer's Mustang II

Custom T-18 Windscreen

A new Mustang II custom curved T-18 windscreen is being produced by Airplane Plastics and is available for \$1174.00, complete with canopy, in either clear or smoke tint. The new windscreen is designed mainly as a cosmetic improvement. The windshield only is \$380.

Customized Instrument Panels

We have recently acquired a new CNC machine to help expand our quick build kits and add new options. We are now able to produce parts more accurately and efficiently than ever before.

One of our first options is to offer custom cut instrument panels. We can do this on new orders or on existing panels if they are shipped back to us. DXF drawings of the Mustang II and Midget Mustang instrument panels are available on our website. Layout the panel as you want it and then send us your custom DXF drawing file. Cost varies with complexity but is typically about \$75.00.

Rick Henry's Flight To Alaska



After much planning, Rick Henry came up with an acceptable load that included all necessities plus most of his camping gear and stayed within CG limits. The weather in the upper Midwest had a break in it so he made the decision to go and filed for Topeka, KS. He was airborne just after 3:30 on June 3, 2002 and finally on the way to Alaska!

Rick flew IFR during all three legs of the first day of his trip stopping first in Topeka and then going on to Omaha, NE. There he filed for Le Mars, IA since camping was available. Sunset was right at 9:00 PM as he was on the approach at MDA which had an 800' AGL Minimum Descent Altitude. It should have been no problem and yet he was still in the clouds. "Bummer!" Missing the approach, he had to divert back to Sioux City. The forecast called for a chance of thunderstorms so he had the airplane put in the hangar for the night.

The following morning it was pouring rain in Sioux City. Mustang builder Bruce Atherton came out to the airport to see Rick's plane. His next planned stop was Worthington, MN and he was off at about 12:45 PM. At the US / Canadian border, Minneapolis Center said "Radar service terminated, contact Winnipeg Center when 70 miles southeast of Regina." Rick felt a little bit like 'Lost in Space' for 20 minutes or so. "Radar identified" was the term used by Winnipeg Center and it was a beautiful evening on visual approach.

Most of the videos and books Rick had read about flying to Alaska referred to clearing into Canada at Lethbridge, but from Memphis he entered Canada in southern Saskatchewan and passed just about over Regina, Saskatoon and Edmonton. The Canadian customs folks were very friendly and courteous. They did take a special interest in the firearm he had borrowed from Steve Crocker as a substitute for bear repellent spray, and of course he declared and registered the shotgun.

Regina was a nice, modern, clean town. Rick stayed at the West Harvest Inn and enjoyed the Earl's Restaurant across the street. He highly recommends this stop.

The following day he flew from Saskatchewan to British Columbia. He had great weather in the Regina area but got into some moderate turbulence west of Saskatoon and climbed to 14,000 ft. (on oxygen) to get out of it. It just made things worse since he was in and out of the cumulus and starting to get a little ice. He began a descent into the Edmonton Terminal area. There were significant thunderstorms west of Edmonton and moving northeast cutting him off from continuing. He secured the plane in Edmonton where he expected to spend the night and he got a late lunch. By 4:00 pm the cells had moved through fairly quickly, so he filed IFR to Ft. St. John which was about 2 1/2 hours away.

It was clear the entire leg, but the turbulence from the Low that was moving through western Alberta was bone-jarring for almost the entire flight. Again, he said to himself "This would not have been a good 'Linda Flight' [*his wife*]" . He couldn't help but keep inspecting the sheet metal and rivets of his wings out there and thought ... "You did a good job of riveting Tim [*his son*]"...

Slowing to a more tolerable speed extended his ETA, but made things much more bearable. The scenery was getting wilderness-like, with blocks of trees for as far as he could see. There were two distinct tree colors, very dark green and very light green. Visibility must have been between 70 and 100 miles. In the distance he could see just the tops of the cumulus clouds that were so far away, the lower parts were below the horizon.

The lineman at Ft. St. John was very accommodating, and Rick set up camp for the night right next to the Flight Service Station. It was not the greatest night for camping. The wind and rain started about midnight. In the morning, he dried out the tent and sleeping bag in the FBO. They had offered the pilot lounge to him overnight, but his Eagle Scout son probably would have frowned on his doing that.

The weather for flying was the next problem. A Low pressure area was stationary over northeastern British Columbia and a 500 foot overcast, rain and freezing levels near the Minimum IFR Enroute altitude made it a marginal situation.

Watching another pilot depart VFR ahead of him, Rick and some other pilots there were concerned about that decision. However, the Fort Nelson and Watson Lake weather was fairly good so Rick elected to continue and changed his destination to Watson Lake, overflying Ft. Nelson and never seeing it. The remaining pilots there were probably concerned about his decision as well.

(continued on next page)

(continued)

Virtually all of the flight was in solid instrument conditions, except for a brief glimpse of The Highway just south of Fort Nelson. Rick found himself spending 75% of his scan on the outside air temperature gauge, which hovered between +.6 and +1.4 degrees C. Moderate turbulence and rain for most of the last hour made the leg seem even longer, despite the 175 knot groundspeed. 20 miles east of Watson Lake he “popped out” of the weather and literally breathed a sigh of relief. “That was not an easy flight.”

From Watson Lake, Rick flew VFR along airway V444, which generally crisscrossed the highway. He landed at Whitehorse and set up camp for the night. The weather was crisp and relatively clear. The temperature was forecast to drop to 3 degrees C overnight, but he felt relieved that the bad weather was behind him and looked forward to a clear day to fly into Alaska. About midnight, Rick realized how silly it was to take up space and weight bringing a lantern for camping in the Yukon in the summer. Eye shades allowed him to sleep in the light that was present almost all night.

The following morning Rick made a backpack breakfast of scrambled eggs and bacon which was actually quite good. He visited the tower prior to departure, calling US Customs at Northway and giving them his ETA. Starting out VFR, he then picked up an IFR enroute and climbed to 12,000’ where it was finally smooth. Seeing the scenic, snow-covered mountains of the St. Elias and Wrangell ranges to the southwest was very exciting. He was almost to Alaska!

Passing 141 degrees west on the GPS, the eastern border of Alaska, he let out a mild “yippee!” At Northway, he cleared US Customs, got lunch and visited the FSS filing IFR to Anchorage, Merrill Field. Rick took several pictures over the Mentasta Mountains and of Mt. Sanford (16,237’), and just awed at the glaciers and mountains passing under the wings. He saw Mt. McKinley to the distant northwest as he started his descent into Anchorage.



Mt. Sanford from Rick's M-II

It seemed odd, after having flown to Anchorage numerous times in a cargo jet, that he’d be so excited to arrive this time. But those were at Mach point 85, and this time it was at Mach point 25. This time it was a lot more fun, and it was in an airplane that he built. “What a rewarding, satisfying experience!” Rick said.

The only mechanical failure came when Rick was preparing for a local flight with Mustang enthusiast and C-170 pilot, Mike Ice. His seat back broke. They made a new bracket in the well-equipped shop where Mike worked and he felt very fortunate that this was the only mechanical glitch encountered on the entire 6,000 mile trip. Also noteworthy was that it was a “Certified Manufacturer’s” part that failed, and not one that Rick or Mustang Aeronautics had made.



Packing for return flight home

For more information on Rick Henry’s flight to Alaska and his return flight to Memphis, TN you can access his website at <http://www.experimentalairplane.com/alaska.html>



TRIP SUMMARY

<u>From:</u>	<u>To:</u>		<u>N. Miles</u>	<u>Time</u>
KOLV	KTOP	Topeka, KS	379	2:33
KTOP	KOMA	Omaha, NE	149	0:57
KOMA	KSUX	Sioux City, IA	70	1:02
KSUX	KOTG	Worthington, MN	85	0:52
KOTG	KABR	Aberdeen, SD	178	1:13
KABR	KMOT	Minot, ND	218	1:28
KMOT	CYQR	Regina, SK	194	1:16
CYQR	CYXD	Edmonton, AB	401	2:43
CYXD	CYXJ	Ft. St. John, BC	310	2:08
CYXJ	CYQH	Watson Lake, YT	364	2:20
CYQH	CYXY	Whitehorse, YT	192	1:28
CYXY	PAOR	Northway, AK	247	1:39
PAOR	PAMR	Anchorage, AK	268	1:47

TRIP TOTAL: **3055 21:26**

compiled by Teri Underhill [from Rick Henry’s Website]

New At Mustang Aeronautics

Center Section Quick Build Option \$2090.00

This option includes both the assembled outer main wing spar option and the assembled center section rear spar option. Ribs and bulkheads are alodined and riveted to the spars, wing walk stiffeners and seat support stiffeners are riveted in place, skins are final drilled, control stick assembly and flap handle brackets are mounted, wing walk doublers are clecoed in position. The center section is basically assembled and a jig is no longer required. This will save at about 200 hours for a first time builder. The major remaining task is to debur, dimple, and rivet the skins on. Other remaining tasks are to finish the flap handle installation, finish the control stick assembly installation, install the seat belt attach brackets, rivet/bolt the forward fuselage attach bulkheads in place, and attach the flap hinge reinforcement.



Center Section Quick Build Option

Rolled M-II Flap and Fuselage Skins

We are now pre-forming all of the forward fuselage and tailcone side skins for the Mustang II. We are also pre-forming the leading edge on the flap top skins. In the past, these skins had been shipped as a flat sheet of material and it was up to the builder to form them. This improvement will greatly simplify construction for the builder.

Mustang II Deluxe Kit Package \$24,570.00

Save At Least \$1,250!

Complete Kit with all of the quick build options, finished wet wings, 11 gal header tank, engine mount, wheels and brakes, new high performance cowl with cooling plenum, fiberglass parts, T-18 Canopy, and crating charges.



M-II Deluxe Kit Package

The first shipment requires a 12 week lead time and contains everything but the wings. The wings will come in a second shipment, which requires a 12 month lead time. This package deal will save the builder at least \$1,250 from purchasing several partial kits and separate finishing items.

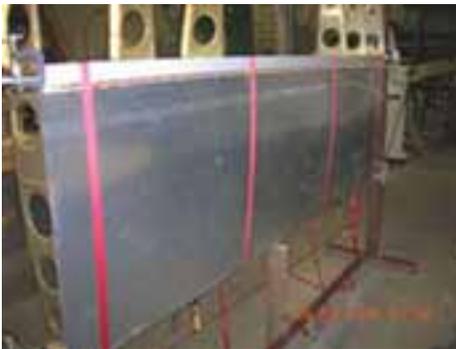
Pre-Punched Flap and Center Section Skins

Thanks to our new CNC machine we now have pre-punched flap skins. We are also pre-punching the spar rivet holes on the main center section skins with our standard kit. Many of the internal parts now have the rivet holes pilot drilled as well. This makes it easy to drill the skins from the inside out.

Building Tips

Drilling M-II Center Section Aft Skins

Pre-punch the rivet pattern directly on the ribs, rather than on the skin. If building from plans, pre-punch the rivet pattern on the skin for both the main and rear spars using an under sized drill. The center section aft skin spar lines are pre-punched with the standard Mustang II kit. Mark the center of the skin at the forward edge and also mark the center of the main spar. Align the marks, making sure the skin is correctly positioned on the main spar extrusion, and then clamp in place. Drill through the center section main spar using the pre-punched holes in the skin as a guide and clecoe the skin to the main spar as you go.



Once you have secured the aft skin to the main spar, pull the skin up tight against the center section ribs using adjustable straps that can be purchased at any hardware store. You can then drill the center section framework from the inside out. This will make it easier to ensure that the rivet holes are in the center of the rib flanges as you will be looking right at them. It is best to start at the forward center holes and work your way outboard and aft, being sure to clecoe the skin to the framework as you move along. It sometimes helps to slide a long straight edge underneath the straps on the outside of the skin to keep it tight against the ribs, especially when you get to the aft most holes.



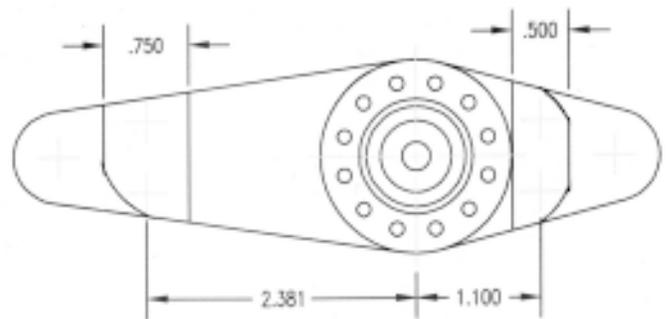
Sta. 20.0 Rib and bulkhead

Once the framework has been drilled you can then go back and drill the rear spar from the outside through the pre-punched holes in the skin. Remove the skin and drill the other one in the same manor. In the next issue, we will have tips for drilling leading edge skins.

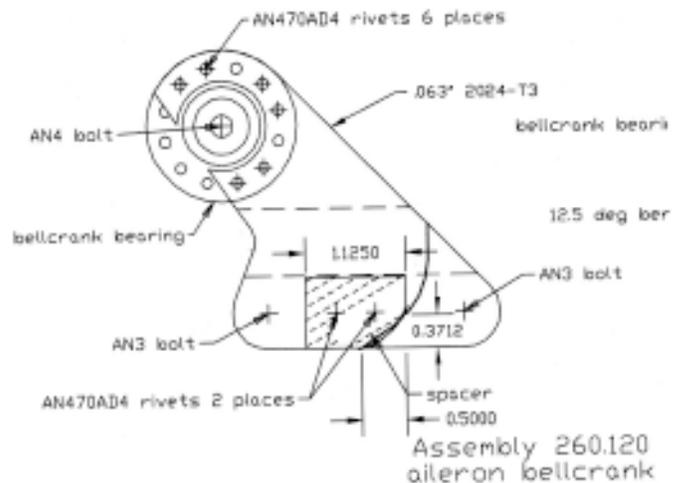
by Teri Underhill (Mustang Aero)

Elevator and Aileron Bellcrank Revisions

File Spacers to Clear Bearings as Shown Below:



P/N 260-121
ELEVATOR BELLCRANK



Mark Doble's Mustang II Makes First Flight



Mark Doble's Mustang II

Here's some info on my first flight! My Mustang II finally flew on February 12th Airport (VDF), 6 miles East of Tampa (5000' x 150' runway). The test pilot was a friend of mine in Tampa, Lee Omernik. Lee has about 10,000 more flying hours than me and has done many first flights so he was a great choice since I had been mostly building and not flying for the past 3 years.

We finally got the 25 hours flown off on Saturday and did my 10 hour insurance checkout with Lee. The plane flies great! The engine is an O-360-A1A with a 74" Hartzell C/S extended hub prop. I did a full throttle run at 1000 feet and was indicating approx. 200 mph without wheel pants. I hear that the wheel pants will add about 15 mph, at least that is what the other Mustang homebuilders are telling me. Single pilot (205 lbs) climb with full fuel at V_y is approximately 2300 fpm. I didn't take into account any winds in this very unscientific test.

Three point and wheel landings in the Mustang are easier than the Decathlon I flew for my tailwheel checkout. The plane is easy to land and I hope to get better as I get more landings under my belt. I had a few minor problems with a broken heat box, broken tach sensor, and a failed CHT probe. I'm also finding that at high speed I need to hold in some aileron. I plan to add an aileron trim servo. The engine is new so I'm breaking it in at 75% power and using straight mineral oil (Aeroshell 100). I'm seeing oil temps ranging from 195 to 210F and CHT from 370 to 410F.

The Mustang II took me 3 1/2 years to build. I built it at home in Tampa, FL in 1/2 of a 2 car garage. I moved to Holly Springs, North Carolina Nov. 1, 2002.

My suggestions to those trying to finish the Mustang:

Just do something every day toward the project, even if it is only 10 minutes. That way you will eventually get done and won't forget where you left off. Put up a picture of a finished plane flying of the same type you are building and imagine yourself flying that plane every day.

That really kept me motivated. Find time for your family and keep them happy and motivated about the project, try to get them involved with any aspect building or flying. My boys (3 and 2) would sit on the garage floor and play with clecos and tools while I built plane parts. And finally remember everyone gets discouraged and makes mistakes. Get over it, fix the problem, and move on. Get together with other builders / EAA members and talk about the problems. I've also found that drinking a few beers and getting away from the project when a mistake happens helps you to get over it!



Instrument Panel and Cockpit

Shown here are pictures of the Mustang II and of my custom-designed engine monitor I call cyclops ... so far it is working great! It shows RPM, fuel quantity, fuel flow, fuel pressure, oil temp., oil pressure, 4 CHT, 4 EGT, automatic flight timer, count timer, 8 minute digital voice recorder, voice warnings, checklists, weight and balance, flight summary, and flight data recorder.

by Mark Doble  N515MD
<http://www.mddesigns.com/mustang>