

# ***EAGLE'S PROPWASH***

**JULY 2018 ISSUE**

## **CHAPTER 113** *"The Backyard Eagles"*



Our Web Site:

[www.113.eaachapter.org](http://www.113.eaachapter.org)

[EAA113@yahoogroups.com](mailto:EAA113@yahoogroups.com)

**Meetings: 7:30 PM**

the 3rd Thursday of each  
month at the

**EAA 113 AVIATION  
EDUCATION CENTER**

**Mettetal Airport (1D2)**

**8512 Lilley Road, Canton, MI**

**(734) 392-8113**



Tony and Susan England enjoying their new Rans S-7 Courier at the Father's Day Pancake Breakfast

*Photo Courtesy of John Maxfield*

## Member Services

### Class I Board of Directors:

<b>President:</b> Joe Kirik	(248) 872-3220	president@eaa113.org
<b>Vice President:</b> Sanjay Dhall	(734) 658-7444	vicepresident@eaa113.org
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<b>Treasurer:</b> Dave Buck	(734) 223-2675	treasurer@eaa113.org

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Dan Jones	(248) 310-6018
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<b>Newsletter:</b> Elizabeth Hebron	(734) 776-9294	newsletter@eaa113.org

### Class III Board Member:

John Maxfield	(248) 890-6767
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Al Bosonetto, Dave Buck, John Maxfield

<b>Dues:</b> Dave Buck	(734) 453-5375
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### **Technical Counselors:**

Randy Hebron	(734) 326-7659
Dan Jones	(248) 310-6018
Dan Valle	(313) 539-9818

### **Flight Advisors:**

John Maxfield	(248) 890-6767
Dan Valle	(313) 539-9818

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Debbie Redding	(734) 397-3452
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### **Young Eagles/Eagle Flights:**

Debbie Redding	(734) 397-3452	events@eaa113.org
Dave James	(734) 721-4213	

<b>Web:</b> John Maxfield	(248) 890-6767	webmaster@eaa113.org
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Dave Buck	(734) 453-5375
Bill Brown	(734) 420-2733
Bruce Breisch	(734) 422-2692



### **CHAPTER MISSION STATEMENT:**

*"EAA Chapter 113's major focus is on the relationships with people who have diverse aviation interests, centered around their love of flight, fellowship, learning, and fun."*

*Chapter members have a passion for flying and are willing to share it with others.*

*Chapter 113 provides the opportunity for exchange of information, as well as the interaction that leads to friendships that last a lifetime."*

### **BOARD OF DIRECTORS:**

*"The Board of Directors are to provide both advice and assistance to the chapter officers on an ongoing basis."*



## **PRESIDENT'S *PODIUM***

**Joe Kirik** (248) 872-3220  
president@eaa113.org  
July 2018

### **Pancake Breakfast Recap**

Despite the heat, our Father's Day Pancake Breakfast was a great success! Attendance was up by more than 100 from last year for a total of almost 800 meals served. It was busy all morning, so it was good that we had the two new (to us) big grills going to keep up with demand for pancakes and sausage. We were a little puzzled by the relatively low number of fly-ins despite the favorable weather (except for the heat!). Big thanks to all who turned out to help – the Backyard Eagles always come through! And let's give a big thank-you to WWJ's Dennis Neubacher who stepped in to handle the announcer duties. His extensive aviation background and local knowledge added a lot of "flavor" to the event!

All three college scholarship recipients were on hand to receive their checks. As always, they were impressive in their spirit and dedication. Seeing such enthusiasm for aviation from young people makes it all worthwhile.

### **Oshkosh!**

It's finally July, and of course that means AirVenture! Many 113 members are busy gearing up for the annual pilgrimage to the shores of Lake Winnebago and some serious aviation overload. I'm working on my shopping list and forums schedule, and I'm looking forward to again flying my Taylorcraft in and spending the week in Vintage camping with some other 113 members. There's nothing like camping on the Flight Line! Please stop by and join the party if you have a chance. Just look for Sean Crooks' Stearman looming large above the crowd! If you're looking for a ride up to Oshkosh, or have an empty seat to offer, please post a note to the EAA 113 Yahoo Group.

**PLEASE NOTE:** There will be major changes to our traditional Chapter dinner at Oshkosh this year. First, the date has been moved to Friday, July 27, due to scheduling conflicts at the Chapter Pavilion. And second, we recently learned that Nancy and Jim Trick will not be able to host the dinner this year due to some health concerns Jim is experiencing. Debbie and John are actively working on a "Plan B" for food. Details are still being worked out, but we know we'll be having food brought in. Logistics are challenging, and there will be a cost involved, likely between \$10-12 per person. **IMPORTANT:** we **MUST** have your RSVP and payment -- in advance! -- by the July 19 Chapter Meeting. See Debbie's article inside the newsletter for further details. Jim and Nancy have hosted the spaghetti dinner in their camper for many years, completely at their own expense! We thank them for their great food and service, and hope they'll be able to be with us next year.

Also at AirVenture, Chapter 113 VP Sanjay Dhall will present two forums on the latest developments with his Flying Car prototype program. His presentations will be at the Aviation Gateway Park on Friday at 2:30 and Saturday at 10.

### **July 19 Chapter Meeting – Early Start for cookout!**

We'll be having a cookout before this month's Chapter meeting, so please be there by 6:30 if you'd like to eat. The Chapter will provide the burgers, dogs and fixins'. Please bring a dish to pass. The meeting program will feature Nigel Thompson with a show-and-tell about his recent float plane trip to Alaska. This will



be a good one! And we also expect to have another speaker to talk about helicopter operations. The EAA Chapter video will offer an AirVenture look-ahead and a great video feature on a “Boot Camp” for aspiring crop duster pilots. You’ll love the creative “simulators” this flight school has developed.

### **Upcoming Events**

Mark your calendars for two major events in August. On Saturday, August 11, we’ll be hosting the revived EAA “Flying Start” program, which is similar to a Young Eagles event but designed for adults. It will involve a short introduction and presentation on what General Aviation is and how to get involved. We’ll be offering demo rides and have flight school and flying club reps on hand to provide info. Board Member Dan Jones is taking the lead. He’ll need volunteer pilots, ground crew and hosts/presenters to make it happen. And then on August 25 starting at 4 p.m. we’ll have our annual Chapter 113 Summer Picnic.

Enjoy your summer flying, and stay safe!

Joe

*COME TO THE JULY MEETING  
AND JOIN NIGEL THOMPSON  
ON HIS ALASKAN ADVENTURE!*



Are you going through the agony of  
**Homebuilder's Meeting Withdrawal?**

**I HAVE THE SOLUTION!**

*( I know... technically, alcohol is a solution... but that's not what I'm talking about.)*

**ATTEND MY**  
**WING REMOVAL /**  
**FUSELAGE FLIPPING**



and get **INSTANT RELIEF!**

**SATURDAY, JULY 7, 2018**

**at Martin Filiatrault's home in Clarkston**

**10 a.m. to whenever - water and pop provided**

**Pizza will be served if you stay long enough. Maybe even beer, if you're not driving.**

**Contact Martin at 248-339-6236 for more details.**

**HOPE YOU CAN MAKE IT!**



## **BBQ and General Meeting**

**Thursday, July 19th, 2018**

**6:00 set-up**

**6:30 p.m. dinner served**

**EAA 113 Aviation Center**

The Chapter will supply the Hot Dogs, Hamburgers and condiments.

Please bring a dish to share.

*Come and relax before the journey to Oshkosh!*

Our General Meeting will follow the picnic.



## FATHER'S DAY PANCAKE BREAKFAST



**The small and the tall...  
a good time was had by all!**  
*All Photos Courtesy of  
Shunsuke Shibata*











President Joe Kirik with 2018 EAA Chapter 113 Scholarship winners, Colin West, Clayton Dryfuse, Tim Berasley.  
*Photo Courtesy of Kevin Berasley.*

















## ITEMS AVAILABLE FROM DONATED TAILWIND

- 1 Warp Drive 3 blade prop and spinner. Prop has composite tapered blades with stone guard leading edge kit. Condition, Excellent Cost for new \$1455.00
- 2 B & C alternator Model BC433-4 30 amp. Condition unknown. Homebuilt aircraft only. Cost for new \$674.00
- 3 2 ea Slick 4103 Magnetos. Left rotation. Include ignition harness for C85 engine and impulse couplings. Appear to be in excellent condition but have not been tested. Time in them is unknown. Cost if new \$2900.00
- 4 Delco Remy 12V Starter. Model 1109656. Condition is fair but starter gear show some damage to teeth. Value is \$150.00
- 5 Exhaust pipes for C85 on Whitman Tailwind. Value \$150.00.
- 6 Whelen rotation beacon. Model WRM. 12v system. Condition appears to be good but has not been tested. Value is \$175.00
- 7 Electric turn and bank indicator. 14V. Manufacturer unknown. Condition, unknown. Value – make offer.
- 8 Manifold Pressure indicator. Model Pioneer Instrument 1 929-8F-A1. Condition appears to be good but it is not tested.
- 9 Electric Tachometer Model UMA T19-801-1C. Condition good but not tested. Includes wiring harness. Cost new \$560.00
- 10 Stromberg Carburetor Model NA-S3A1. Condition fair. Value \$300.00.
- 11 Bendix Ignition Switch. Off-R-L-Both. Condition – Not tested. Value \$80.00
- 12 Master Relay 12V Cole-Hersee. Condition unknown. Value \$25.00
- 13 Westach Cylinder Head temp gauge Model 3AQ1. Condition good. Includes harness. Value \$50.
- 14 Amp and Voltage gauges. Automotive type. Make offer.
- 15 Whip style VHF com antenna. Condition good. Value \$25.00
- 16 Instrument light hoods. 7 ea 3 1/8 and 1 ea 2 1/4. Make offer
- 17 Dimmer Switch. Condition fair. Value \$20.00
- 18 Throttle cable, Wire type end, 3 foot length. Condition good. Value \$25.00.
- 19 Mixture cable, Wire type end, 3 foot length. Condition good. Value \$25.00.
- 20 C85 Cam Shaft. Has not been inspected but appears to be in good condition. Value \$300.00
- 21 C75, C85, C90, O200 Cam Gear PN 530535. Condition excellent. Value \$280.00
- 22 C85, C90, O200 Starter Crank Gear. Condition excellent. Value \$500.00.
- 23 C85 Crank Case. Condition Good. Value \$750.00 Has data tag but no Logs.
- 24 C85 accessory case, Condition Good. Has oil pick up tube, oil pump and oil pressure regulator. Value \$400.00
- 25 Set of 8 C85 valve lifters. Condition good. Value \$25.00 each.
- 26 Set of 4 C85 connecting rods. Condition good. Value \$350.00.
- 27 4 Each C85 Cylinders. Condition, good used. All cylinder dimensions within serviceable limits. Appear to have been recently overhauled. Each has valves, springs and rockers. Value \$500.00 each.
- 28 4 ea C85 rocker covers. Condition good. Value \$30.00 each.
- 29 4 ea C85 Pistons. Condition good. Nominal size. Value \$85.00 each.
- 30 C85 oil screen housing and screen. Condition good. Value \$65.00.
- 31 C75, C85, C90, O200 intake elbow. Set of 4. Condition good. Value \$45.00 Each.
- 32 C75, C85, C90, O200 Intake Spider. Condition Good. Value \$200.00
- 33 C75, C85, C90, O200 Intake Pipes. 4 Each. Condition good. Value \$40.00 each.
- 34 C85, C90, O200 Starter Pinion Shaft PN 23487. Condition good. Value \$125.00.

All items are “as removed” No logbooks are available. Buyer determines serviceability. Parts are available for inspection at the EAA Chapter 113 Hangar. Contact Doug Sytsma at 734 674 3345 for more info. Source of value is EBay, Barnstormers or Manufactures Web site. Items available for donation to Chapter. Items may be returned if not in serviceable condition.





**FRIDAY, JULY 27TH, 2018**

**6:00 P.M.**

**CAMP SCHOLLER CHAPTER PAVILION  
OSHKOSH, WISCONSIN**



## EAA 113 Chapter Dinner

As we continue to pray for Jim Trick's recovery from a serious illness, we will go forth with the spirit of camaraderie that Nancy and Jim provided the Chapter for so many years at Oshkosh. Their generosity and hospitality simply can not be duplicated. Also, the logistics just do not permit us to offer a similar meal.

Instead, this year we will be catering dinner through an outside vendor. Unfortunately, at this time a menu has not been finalized while we wait for details to be worked out. Depending upon which vendor we can use, we estimate the cost to be between \$10-\$12 per person. The dinner will be held on Friday night at 6:00 p.m. at the Camp Scholler Chapter Pavilion. If you plan on attending, you **MUST RSVP** and pay the money to Debbie no later than at the General Meeting on July 19th. Due to the incredible volume of business which occurs in Oshkosh the week of AirVenture, the caterer requires a week's notice for orders, so unfortunately there will be no room for late requests to attend.

Bring your own beverage of choice. There are picnic tables in the pavilion, however, you may wish to bring your own chair. Come and enjoy dinner with your EAA 113 family!



**\*\*RSVP required with payment to Debbie by July 19th\*\***

# ED LESHER: AIRCRAFT HALL OF FAMER

*This aeronautics professor taught students in mid-air and flew into record books*

**By Evan Dougherty**

Edgar J. Lesher stayed with his sister in Florida for five straight summers, waiting for the perfect day. He was looking for a clear path of good weather from St. Augustine, Florida, all the way to Tucson, Arizona.

The first three summers, Lesher was too anxious to sleep, forfeiting a number of opportunities. He reached out to Jack Lousma (BSE Aero '59), who told him astronauts often took medication. The next two summers, Lesher got enough sleep, but the weather didn't hold.

Finally, at 3:00 AM on July 2, 1975, Lesher rose from his bed and headed to the airport for what would become his seventh and final world record-breaking flight in the Teal, an airplane he built himself.

Lesher, who would tell you to call him "Ed" once he got to know you, was different things to different people. He was a husband to Margaret and a father to ten children, including four sets of twins, though one child passed away at birth.



*Margaret Lesher with their first eight children in San Diego, CA, circa 1953.  
Photo courtesy of Lesher family.*

Lesher also was a professor of aeronautical engineering at the University of Michigan. After earning a bachelor's degree in mathematics at Ohio State University in 1938 and a master's degree in aeronautical engineering at Michigan in 1940, Lesher left Ann Arbor to work at the Douglas Aircraft Company in California. About a year later, he went on to Texas A&M College, where he helped with the Civilian Pilot Training Program and earned a pilot's license. In 1942, he returned to Michigan as a professor.

And within this personal and academic mix was his acclaim as an aircraft homebuilder. A member of the Experimental Aircraft Association (EAA), Lesher built two impressive planes, and had plans for a third. The first was the Nomad, a two place, aluminum, semi-monocoque recreational craft. The second was the Teal, a sleeker, single place version of the Nomad, designed specifically to break world records. And both were pushers, which meant the propeller was in the back.



## University Life

Before Lesher started building his own aircraft, he taught aeronautics at Michigan, and would continue to do so until his retirement in 1985.



*Faculty portrait of  
Edgar J. Lesher.  
Photo University  
of Michigan.*

Most students who closely interacted with Professor Lesher came away much more inspired than those who only knew him as a lecturer. In large classes Lesher would face the blackboard and fill it with equations, explaining everything as he went but never facing the class.

“I think I learned more from Professor Lesher in casual conversations in the hallway than I learned from any of my other professors in full courses,” said Barnaby Wainfan (MSE Aero ‘78).

“He wasn’t a passionate and inspiring lecturer, by any means. But he had an almost infinite willingness to share information and help you learn. And once he decided you were somebody who cared about it, he was always available, always interested in talking,” said Wainfan.

Lesher taught one popular class, in flight dynamics, where he would pilot a Cessna and take three students with him in the air. Students would record measurements and perform tests to determine the plane’s performance, stability and control.

You could tell he liked the hands-on part of his job,” said Thomas Galloway (BSE Aero ‘62). “It was kind of like he was one of the group, you know? He didn’t act like he was any better than the students.”

“He just loved airplanes, it was very clear,” said Wainfan.

## The Nomad

Early in his professorship, Lesher took another short leave to work for the Stinson Aircraft Company, a division of Convair, in nearby Wayne County. One project that he spent quite a bit of time on was a four place light aircraft, the Convair Model 106 Skycoach. It was a pusher, which continued to intrigue Lesher, even after the project was abandoned and he had returned to Michigan.

It took more than ten years for him to revisit the idea, but in August 1958, Lesher attended one of the early EAA fly-ins in Milwaukee, Wisconsin, where like-minded aircraft enthusiasts came together to show off their homebuilt planes. Lesher returned to Ann Arbor inspired to build his own. And it would be a pusher.

Construction of the Nomad began in February 1959. Lesher called it a personal project, as it was separate from his responsibilities as a professor. But that didn’t seem to prevent him from building it on campus. And students noticed.

“Early on, I found out about the Nomad, which he was already building in the basement of the East Engineering building,” said Malcolm Monroe, an undergraduate aeronautics student at the time. “I was able to finagle some



*Cover of Sport Aviation, June  
1963, featuring Ed Lesher and his  
Nomad. Courtesy of Experimental  
Aircraft Association. Photo by  
Robert F. Pauley.*

shop privileges there.”

“They were very protective of the plane, and did not want students around it, but I did manage to touch it a few times, and help just a bit with the construction,” said Monroe.

“We felt it was pretty unique,” said Galloway. “It was nice being able to see what was possible when you had a passion for certain things.”

Lesher embraced the interest of his students, and assigned problems in his courses that helped to produce data points to better predict the performance of the Nomad.

Beyond giving his students real-world practice problems, Lesher also exposed them to one of the more significant design challenges of building a pusher. “A major concern of his was vibration in the drive shaft of the propeller,” said Galloway.

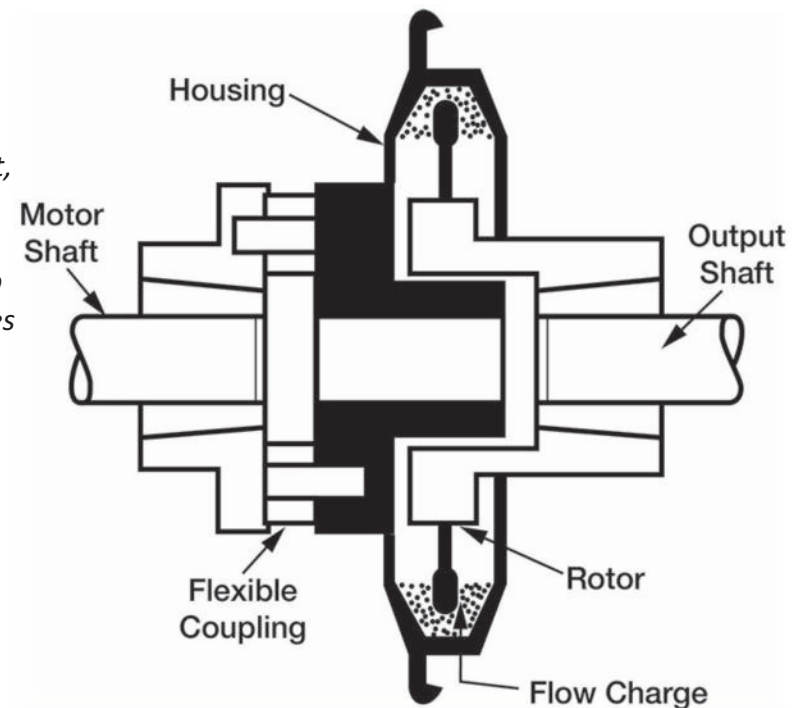
The engine in the Nomad, a 100 horsepower O-200A Continental, sat right at the center of the plane, behind the cockpit. The propeller, however, was more than eight feet away, at the rear of the aircraft. An extension shaft was needed to connect the two, but a shaft that long would create a lot of vibration due to the starting torque.

“So Ed contacted Molt Taylor,” said Robert F. Pauley, a fellow EAA member who documented much of Lesher’s work. “He designed the Aerocar, which was a so-called ‘roadable’ airplane. And he used an extension shaft in that.”

After conferring with Taylor and a few other colleagues, Lesher went with the Dodge Flexidyne 9C dry fluid coupling, which he installed between the engine and the shaft. The coupling would ease the acceleration of the extension shaft and reduce the starting torque.

*The Dodge Flexidyne coupling was key to Ed Lesher’s success in building a pusher aircraft. As the motor accelerates the drive shaft, heat-treated steel shot within the housing is pushed outward against the perimeter due to centrifugal force. As the shot compresses, it slowly locks onto a wavy rotor that is connected to the extension shaft and propeller and accelerates it until it matches the speed of the engine, reducing the starting torque.*

*Courtesy of Baldor Electric Company.*





Once construction was complete, Leshner moved everything to Willow Run Airport in nearby Ypsilanti to do the final assembly and prepare for flight. And in October 1961, after 5,000 hours of construction, the Nomad flew.

“This was a refreshing experience,” wrote Pauley in EAA’s Sport Aviation Magazine in June 1963, after getting a chance to fly in the Nomad with Leshner. “The low-set instrument panel, below knee level, allows an excellent view forward and down, rivaling the view from a helicopter. Having once become accustomed to the ‘Nomad’s’ most outstanding feature, one can sit back and relax in the roomy cabin, enjoy the view and appreciate the plane’s other virtues.”

In 1962, Leshner flew the Nomad to the EAA fly-in, which had moved to Rockford, IL.

“By weeks end, the grass around Nomad had been worn by the shoes of thousands who had inspected the ‘funny looking little plane,’” wrote Ann Pellegrino in the Summer 1970 issue of Air Trails: Homebuilt Aircraft.

Also at the fly-in was Leshner’s friend, Leon Davis, a fellow homebuilder who had brought his DA-1 airplane to the event back in 1958.

While the two were talking, Davis revealed to Leshner that he was thinking about going for distance records with his next airplane, the DA-2. Specifically, he was interested in records for the 500 kilogram class of aircraft as classified by the Fédération Aéronautique Internationale (FAI), the international organization that certifies world aviation records.

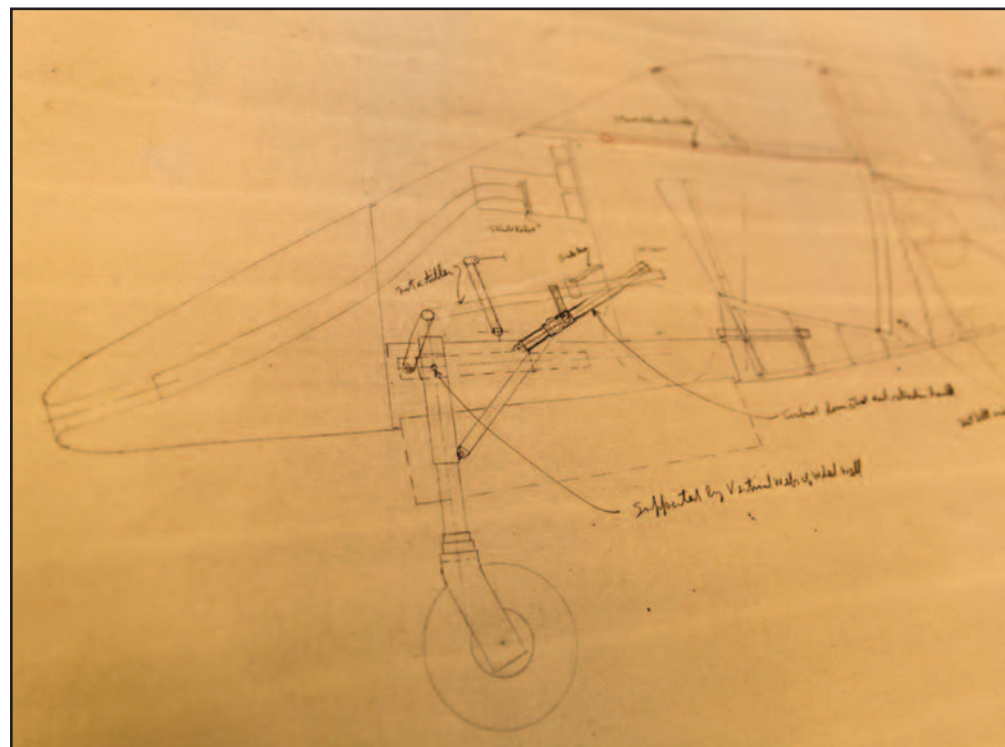
Leshner needed a new project, so he stole the idea.

## The Teal

Immediately upon returning home, Leshner wrote to the National Aeronautic Association, which represents the FAI in the U.S., asking for more information. After learning about the number of available records for a plane in the 500 kilogram class, Leshner’s ambition became designing one that would set as many records as possible. He would call it the Teal.

Leshner had his work ahead of him, as there were a number of trade-offs to consider when designing a world record-breaking aircraft. He first figured that a 50 horsepower engine would be ideal for the Teal, but he couldn’t find one with the right specifications. Instead, he decided on 100 horsepower, and later opted to pull his Continental out of the Nomad.

The next decision was whether to go with the pusher concept again. Leshner calculated that the extension shaft and Flexidyne coupling would add an extra 50 pounds compared to a tractor design (in which the propeller is at the front). Despite the weight penalty, Leshner committed to building another pusher, expecting it to “make a good showing.”



*Side view of the Teal, drawn by Ed Leshner and given to Robert F. Pauley.  
Photo by Evan Dougherty.*

Most of the difficult design decisions for the Teal were related to weight and aerodynamics. Lesher knew that, unlike the Nomad, he would have to implement a retractable landing gear to greatly lower the drag. But that would add weight. So he designed the simplest landing gear he could devise, which would require eighteen separate operations and take about two minutes to fully retract.

Lesher also seriously considered not adding brakes to the Teal, just to save weight. Other record-breaking planes did this, but after researching runway lengths and calculating the required stopping distance, he drew in a small brake for the nose wheel.

The final design decision Lesher made concerned not the Teal's form but his own — which he described in the March 1968 edition of Sport Aviation:

*“My first idea was to use a jockey pilot, as my weight was well over 200 lbs. But this would forfeit the best part. I decided that this was the perfect incentive to lose weight, and this is a continuing feature of the project.”*

Just two months after his conversation with Davis in Rockford, Lesher had completed the preliminary design and was ready to begin building the Teal. And like the Nomad, Lesher built it on campus, with students helping with performance calculations and some of the assembly.

On April 28, 1965, construction was complete and the Teal was ready for flight. Lesher took off from Willow Run Airport and made two laps, which lasted about ten minutes.

“The airplane behaved exactly as expected,” wrote Lesher.

### ***The First Go***

Over the next two years, Lesher would build up flight time in the

Teal. For his first 50 miles, he stayed within a 25 mile radius of Willow Run Airport, which was a requirement set by the Federal Aviation Act of 1958 for homebuilt aircraft. It took him about three months.

Once the Teal was certified, Lesher was ready to do some real flying. He entered the 1965 AC Flight Rally, a competition that kicks off the annual EAA fly-in.

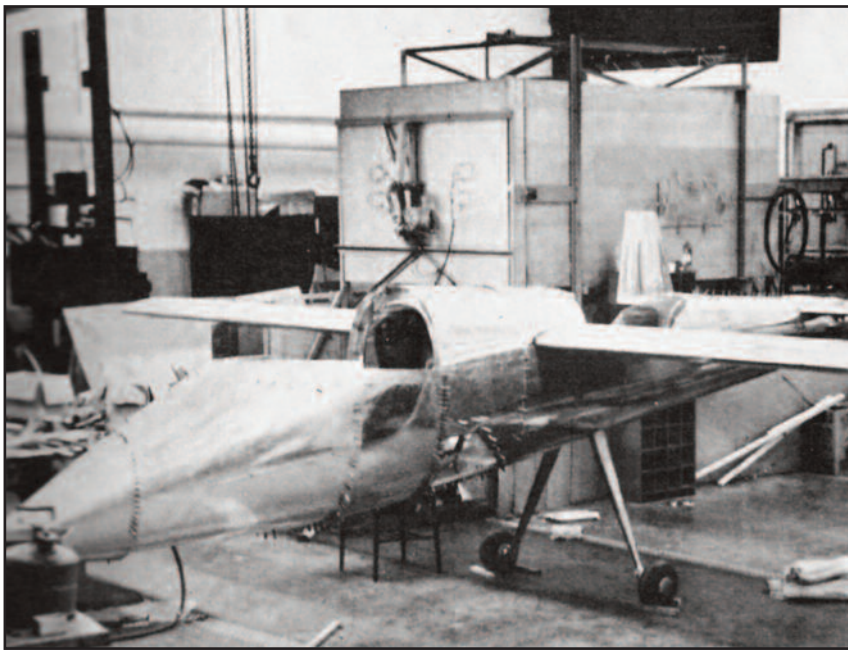
Pilots would bring their planes to various starting locations a few hundred miles from Rockford and “fly-in” to start the convention.

The rally featured a wide range of aircraft types and was judged with a handicap system based on piloting skill and aircraft capabilities. Lesher had won first prize the previous year with the Nomad, but this time bad weather forced him to abandon the rally, and he arrived in Rockford later than planned.



*The Teal in flight. Photo by Robert F. Pauley.*





*The Teal under construction in the East Engineering building at the University of Michigan. Photo by Robert F. Pauley.*



*The cockpit of the Teal in 2007. Photo University of Michigan.*

Lesher entered the Teal again the next year and was awarded fourth place. But overall, the plane still performed better than he expected.

By 1967, Lesher was happy with how the Teal was flying, and was ready to start his record attempts. The first three he would tackle were all for maximum speed in a closed course, at lengths of 500, 1,000, and 2,000 kilometers. This meant he could define a course, and just do multiple laps to meet the distance requirement.

All three records had been last set between 1952 and 1954 in Europe. In fact, one of Lesher's other motivations for attempting to break the records was because none of them were held by Americans.

Lesher settled on a course between Willow Run Airport and the WMUS radio tower in Muskegon. Specifically, the starting point was the chimney of a nearby house owned by Lee Koepke, a local airplane mechanic. The route measured 250.14 kilometers, which worked out well for the distances Lesher needed to fly.

Lesher made his first attempt on May 22, 1967, flying to Muskegon and back with an average speed of 292.17 kilometers per hour. FAI certified the flight and gave Lesher the 500 kilometer record over Iginio Guagnellini's 249.08 kilometers per hour. One down.

One month later, on June 30, 1967, Lesher attempted two laps of the course to challenge the 1,000 kilometer record held by Nello Valzania, whose average speed was 240.52 kilometers per hour. Lesher completed the flight at an FAI certified average speed of 272.32 kilometers per hour, successfully earning the record. Two down.

And then on October 20, 1967, Lesher flew four laps of the course at an average speed of 228.26 kilometers per hour, beating the previous 2,000 kilometer closed course speed record of 183.43, held by Albert Rebillon. And in a matter of months, Lesher held three world records.

### A Significant Delay

Lesher wrote in March 1968 that he planned to go for three more FAI records in July of that year. The records were for altitude, distance in a closed course and distance in a straight line. But a setback would delay his attempts more than two years.

On the afternoon of May 6, 1968, as Lesher was flying the Teal over Ann Arbor, his engine cut out. At the time, while in mid-air with no power, he thought that the drive shaft or part of the engine had failed, and worried that trying to restart it might cause the tail assembly to separate.

So with no thrust to rely on, Lesher pointed the Teal towards the Ann Arbor Municipal Airport, which would have been closer than Willow Run. And it looked like he was going to coast in for a gentle, unpowered landing.

But as Lesher began the laborious process of lowering the Teal's landing gear, the sudden drag caused the nose to dip down, taking the plane and Lesher with it. Now short of the runway, the Teal crashed, and hit a tree just across State Street from the airport.

Lesher was able to walk away from the accident mostly unhurt, save for a large bruise on his left bicep. But the damage to the Teal was significant.

Lesher later determined he had run out of fuel. After 2,505 hours of total flight time and 178 hours in the Teal, this simple but serious mistake would set him back years. But Lesher was also lucky. Unlike others in the homebuilt community, he had managed to get his plane on the ground without more serious injury.

*Ed Lesher's startup checklist from the cockpit of the Teal. Photo University of Michigan.*

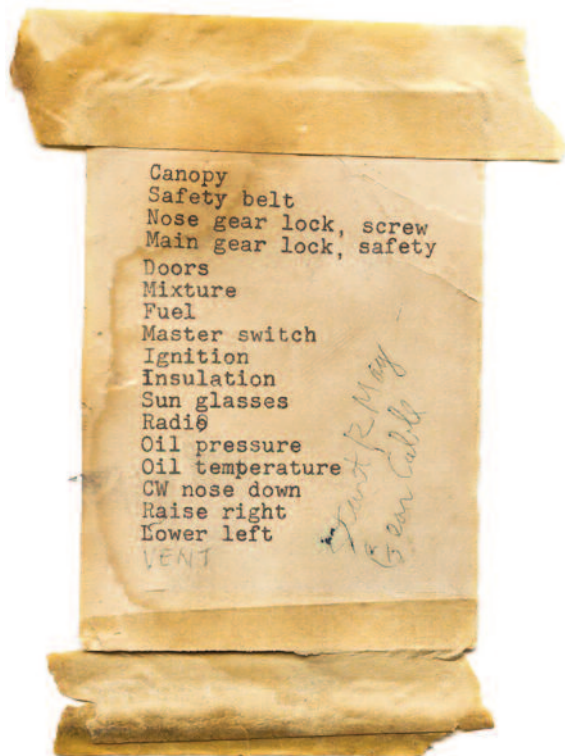
### The Teal, Rebuilt

After a year of rebuilding the Teal and another spent logging flight time, Lesher was ready to get back to his records.

The first record he went after was for maximum distance in a closed course, and Lesher opted to use his familiar route of Willow Run to Muskegon.

On September 9, 1970, at 6:06 AM, Lesher took off in the Teal from runway 27L, passed over Koepke's chimney, and turned to head for Muskegon.

Five laps and 12 hours later, Lesher passed over the chimney one last time and turned in for a landing. Many of his friends were waiting, along with a photographer from Detroit's Channel 7 news.



*The Teal's logo was designed by Robert F. Pauley. After his accident, Ed Lesher cut this piece out of the plane's damaged aluminum shell and gave it to Pauley. Photo by Evan Dougherty.*



Official measurements were made, and the remaining fuel was siphoned from the tank. Seven of the original 42 gallons remained – not nearly enough to attempt a sixth lap. But it didn't matter. A couple of months later, FAI certified that Lesher had earned his fourth world record with a distance of 2,501.4 kilometers, again beating a record held by Albert Rebillon of France.

Three more years would pass until Lesher's next set of records were attempted, this time for a couple of sprints. In September 1973, Lesher flew to Connecticut to attempt one record for speed over a course between 15 and 25 kilometers, and a second for speed over a three kilometer course.

After malfunctions with the timing equipment and delays due to local air traffic, the Teal easily conquered both records. Lesher flew an average speed of 272.195 kilometers per hour in the 15/25 kilometer course, earning the first record for the Teal's class, and 278.58 kilometers per hour in the three kilometer course, beating a five year old record set by Donald Sinclair. And Lesher only had to push the Teal to 70 percent of its rated power to do it.

Walter Carr, who had officiated Lesher's first three record flights back in 1967, later asked Lesher why he didn't "firewall" the Teal to go faster. Lesher, with a bit of humor, described his response to Carr in the June 1974 edition of Sport Aviation:

"Aside from the fact that the firewall is behind me in the Teal, I felt it was better to fly conservatively and finish rather than push and have something go wrong."

After certification by the FAI, Lesher now held six world records.

## **The Final Record**

Lesher got to the St. Augustine airport at 4:30 AM on July 2, 1975, for his final record attempt: distance in a straight line. There he met his "4 O'Clock Club," comprised of friends and officials.

They pushed the Teal up onto three certified scales, and Lesher threw in everything that would be going on the long flight: some water and hard candy, charts, two barographs that helped certify the flight and finally his AC Rally hat. Lesher then climbed in, and after the total weight came in a few pounds shy of the 500 kilogram limit for his record class, he decided to add a little bit more fuel.

After sealing the fuel tanks and the barographs, Lesher and his team took the Teal out to the runway. At 7:16 AM, the final record attempt began. Most of the flight was uneventful. There was some haze around Jackson, Mississippi, and some dark clouds with light rain in Abilene, Texas. But the real drama waited until just outside Tucson.

"I asked myself 'What am I doing here? Should I make a 180?' I had been flying for more than 12 hours and was within 60 miles of breaking the record," wrote Lesher in the February 1976 edition of Sport Aviation.

He was approaching a pass between Mount Lemmon and Mica Mountain, which borders Tucson to the east, when he spotted a wall of approaching thunderstorms. Lesher had to decide whether to turn around and lose the record, turn north toward a closer airport and be short of the record or push through and hope for the best.

Lesher decided to push on, and as he approached the pass, he could finally see the Tucson basin through the clouds, though just barely. Now reassured, he

powered through the rain, made it past the mountains and the storm, flew over his record line and landed at the Phoenix-Litchfield Airport.

Lesher was in the air for 13 hours and 27 minutes, flew a total of 2,953.89 kilometers and broke the record set 18 years earlier by Kaarlo Henrik Juhani Heinonen of Finland.

Lesher had set his seventh and final world aviation record.



*Ed Lesher poses next to his two planes, the Teal and the Nomad, at Willow Run Airport. Photo courtesy Bentley Historical Library.*

*The Teal on display in 2007 in the Francois-Xavier Bagnoud building, home of the University of Michigan Aerospace Department. Photo University of Michigan.*





## Lesher's Legacy

Lesher's accomplishments in aviation were well-noticed and recognized.

The FAI awarded him the Bleriot medal four times for his record-breaking endeavors, and Lesher was inducted into the Michigan Aviation Hall of Fame in 1988 and the EAA Hall of Fame in 2006.

But perhaps most significant was the legacy he left with the students he inspired. Many were successful in the aeronautics industry, which may not be rare for a Michigan Engineering graduate, but Lesher's students felt he had significantly influenced them.

Malcolm Monroe had a long career in anti-missile research in Cape Canaveral. Thomas Galloway spent 35 years at NASA's Ames Research Center, working on developing software to evaluate new aircraft designs. Bruce Carmichael, one of Lesher's early students, was a pioneer in the world of laminar flow and super low-drag aerodynamics. And Barnaby Wainfan, a technical fellow at Northrop Grumman, has worked on more than 21 different aircraft, including being the lead aero designer of the X-47B.

"I think he's probably the single most important teacher I've had in my entire career," said Wainfan. "He was the reason I came to Michigan.

"I originally saw a picture of the Teal in the September 1967 issue of Flying Magazine. Just one little picture. I was 11 years old at the time and I just thought it was the coolest thing I'd ever seen.

"And when the time came for me to choose where I was going to go to graduate school, I basically had a choice between Stanford and Michigan. Everything else said Stanford, but I came to Michigan because of Professor Lesher, and never regretted that decision."

***Editor's Note:*** Randy and I had the pleasure of knowing Ed Lesher who was a long-time member of Chapter 113. Chapter 113 sponsored several of Ed's record attempts.

# 2018 CALENDAR OF EVENTS FOR EAA 113

Regular Monthly Meetings are on Thursdays of each month at 7:30 p.m. These include:

[Home Builder's Corner](#) on the 1st Thursday

[Board Meeting](#) on the 2nd Thursday

[General Meeting](#) on the 3rd Thursday

[IMC/VMC](#) on the 4th Thursday



July	
19	Picnic prior to General Meeting at 6:30 p.m.
23-29	Oshkosh AirVenture
27	Chapter Dinner in Oshkosh at Pavillion in Camp Scholler

August	
11	Flying Start Event
25	EAA 113 Family Picnic 4:00 p.m.
September	
22	Young Eagle Rally 8:00-11:00 a.m.
October	
20	Young Eagle Rally 8:00-11:00 a.m.
November	
2	Movie Night 7:30 p.m.
10	Chili Fly-In 11:00-2:00 p.m.
December	
7	Movie Night 7:30 p.m.
20	Christmas Party 6:30 p.m.



















Be sure to check our website: [www.113.eaachapter.org](http://www.113.eaachapter.org) and the EAA Chapter 113 Facebook page for any changes to the schedule.





# July 2018
















Sun	Mon	Tue	Wed	Thu	Fri	Sat
<p>1 Pancake Breakfast at Clare 48D</p> 	2	<p>3</p> 	<p>4 Happy July 4th</p> 	<p>5</p> 	6	<p>7 Breakfast @ 3 Brothers 8:15am</p>
8	9	10	11	<p>12</p> <p><b>EAA 113 Board Meeting 7:30 pm</b></p>	13	<p>14 Breakfast @ 3 Brothers 8:15am</p>
<p>15 Pancake Breakfast at Chesaning (50G)</p> 	16	<p>17</p> 	<p>18</p>  <p><b>Tomorrow is the Last Day to RSVP for the Chapter Dinner in Oshkosh!</b></p>	<p>19 EAA 113 Picnic &amp; General Meeting 6:30 pm</p> 	20	<p>21 Breakfast @ 3 Brothers 8:15am</p>
<p>22</p> 	<p>23</p> 	24	<p>25</p> 	26	<p>27 Chapter Dinner at AirVenture</p> 	<p>28 Breakfast @ 3 Brothers 8:15am</p> 
<p>29</p> 	30	<p>31</p> 				

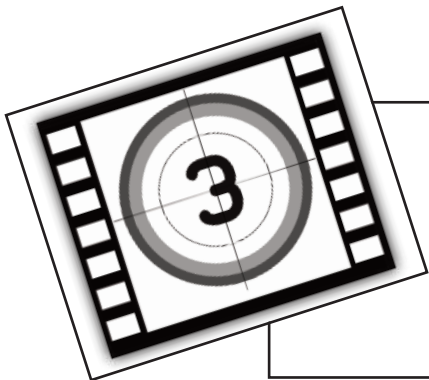


# August 2018



Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1 	2	3 	4 <b>Breakfast @ 3 Brothers</b> 8:15am
5	6	7 	8	9 <b>EAA 113 Board Meeting 7:30 pm</b>	10	11 <b>Breakfast @ 3 Brothers</b> 8:15am Flying Start 
12 	13	14	15	16 <b>EAA 113 General Meeting 7:30 pm</b>	17	18 <b>Breakfast @ 3 Brothers</b> 8:15am Mason Pancake Breakfast and Steak Lunch 
19	20	21	22 	23	24	25 <b>Breakfast @ 3 Brothers</b> 8:15am <b>EAA 113 Family PICNIC</b> 4:00 p.m. 
26 Oakland County International Airport Airshow 10-4	27 	28	29 	30 	31 	



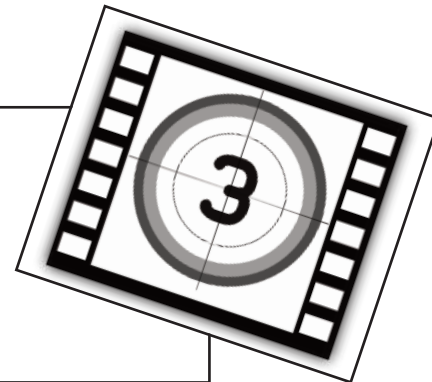


## ***Calling all video enthusiasts!***

*Submit your video of the month to Sanjay Dhall*

at [vicepresident@eaa113.org](mailto:vicepresident@eaa113.org)

(Or you might be watching someone's 60-year-old 8 mm home movies next month....)



EAA Chapter 113 member Mark French, FAA parachute rigger, offers his services to all members of the chapter at a special rate; **\*FREE\*** for any of their parachute needs. If anyone is in need of a pilot rig for testing or acrobatics, a number of pilot emergency parachutes are available for loan. Any questions related to parachutes and parachuting can be answered by contacting him at: [mark.r.french1@gmail.com](mailto:mark.r.french1@gmail.com) or by calling 734.260.7342.



**Next Meeting:**  
**Thursday, July 19, 2018**  
**7:30 PM at the**  
**EAA Aviation Education Center**

**EAA Chapter 113**  
8512 N. Lilley Rd  
Canton, MI 48187  
(734) 392-8113

