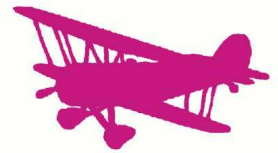




# OX5 NEWS

Celebrating 65 Years: 1955 - 2020



Volume 64 - Number 1

Spring/Summer 2021

The Slow Change To A New Normal

*Published for and by the Members of the OX5 Aviation Pioneers*

**Guest Editor - Don Voland**

## Wilbur's Waco Restoration The Anna Project - It'll be done on Thursday!



The journey of the OX5 engine began with an innocent request from Captain Richard Wilbur; "Steve, I want you to build an engine for my Waco restoration."

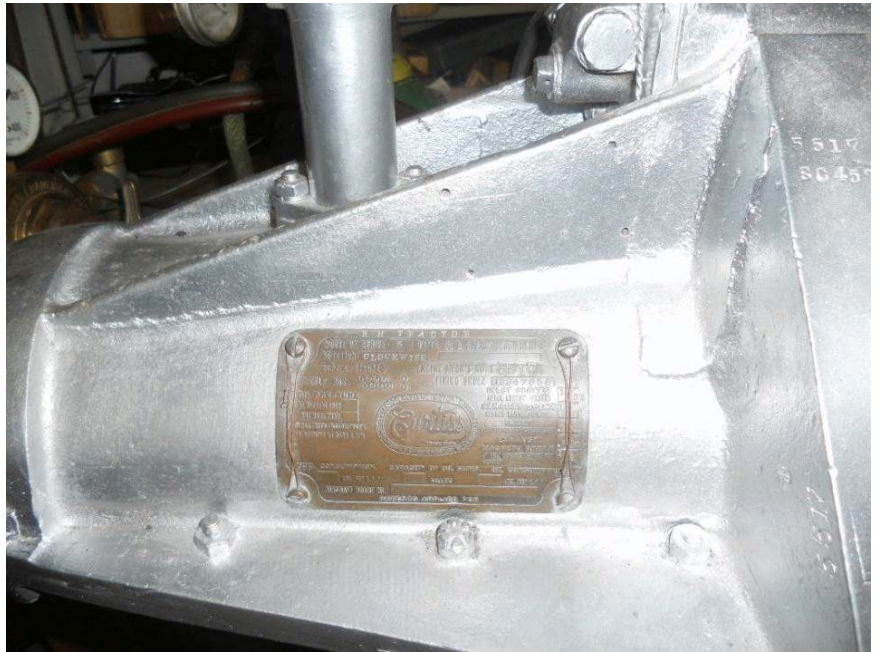
### **Fred's Engine As found In An Estate Garage**



## Restoration - Continued

I began my effort with a trip to the Seattle Museum of Flight and found an original Curtiss Standard Model OX5 Aeronautical Motor Parts List, 1917, Buffalo NY. The Parts List has been invaluable with identifying the parts and pieces of the 100-year-old engine. Next task became acquiring an engine(s). I had a professional colleague advise me that "... if you are building such a rare antique engine, you had better look for two of them to have enough parts to make up one complete engine". This advice has proven to be accurate. One engine we found through an Ohio estate auction, hence this engine was labeled "The Ohio Engine", A second engine was acquired after much sleuthing from the Oregon estate of Fred Van Abkoude; a complete Curtiss OX5 from the Hammondsport factory, christened "Fred's engine". Additional parts were purchased from helpful Club members and some eBay listings.

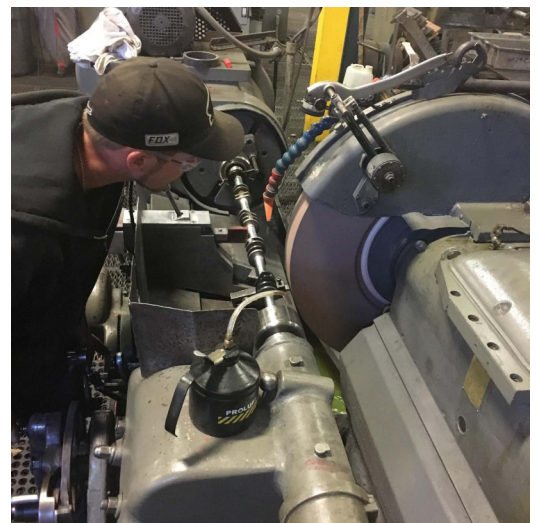
**Curtiss Data Plate Fred's Engine**



It has now been five years since we took possession of the engines, parts. The first task was to disassemble, inspect and measure EVERYTHING. Aluminum cases were cleaned via an industrial chemical dip tank. The crankshafts were cleaned in an ultrasonic tank, automotive style dishwasher cabinet and a special built flushing tank with a pneumatic pump and a 4% NAOH (sodium hydroxide) solution.



**Flush Tank For Crankshafts**



**Camshaft Surface Grinding of Journals**

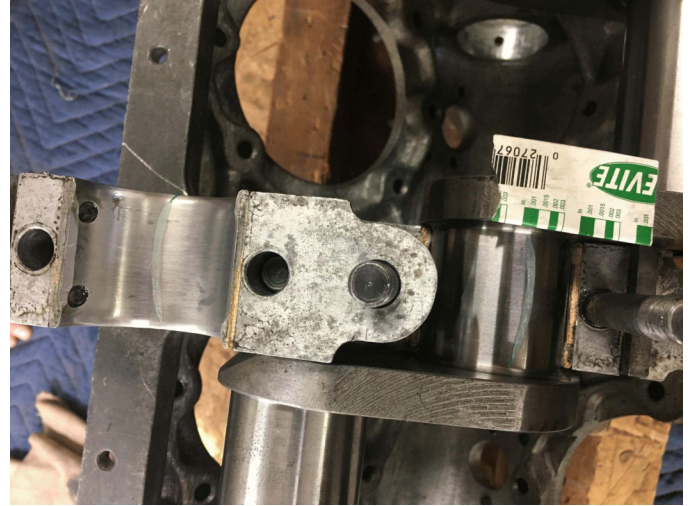


## Restoration - Continued

The camshaft journals were next on the priority list. The OX5 lubrication system is not a “priority lubrication system”, in which oil is first fed to the crankshaft main bearings. The OX5 first delivers the lubricating oil to the camshaft and bearing journals and then the oil flows through case galleys to the crankshaft. This design necessitates a proper clearance (.0015”) at the camshaft journals so oil pressure is not lost before reaching the high loads of the crankshaft main bearings. The camshaft was sent to a chrome plating firm and once a .010”-.015” layer of chrome was electro-plated onto the journals, they were then precision ground to bearing clearance.



**OX5 Camshaft After Chrome Plating  
Prior To Finish Grind**



**New Babbitt Main Bearing Plasti-Gauge;  
0.0015-0.002" Clearance**

Eight rods and five main shells were re-babbitted at a firm outside of Kansas City with new babbitt/tin alloy and finished to bearing clearance dimensions. Also replaced were the connecting rod bolts and castle nuts as well as main cap nuts. (replacement rod bolt; Pioneer Bolt Supply CRB-300 ; Ford V-8 390 CID and 428 CID application.)

Connecting rods and camshaft were magnafluxed for cracks, none were found. The small end of the rod was fitted with a bronze bushing and honed to fit the wrist pins. Piston and rod assemblies need to be weighted and balanced to equal weights.



## Restoration - Continued

Future tasks include evaluating the cylinder condition. Valve train, guides and valve seats all need to be evaluated and re-conditioned. The exhaust seats are anticipated to be the major challenge ahead.

The ignition system has yet to be evaluated. What type of ignition to use has not been decided.

I am thankful that the Society of Automotive Engineers, (SAE) was founded in 1905, and screw thread standards were established prior to the 1917 manufacture of the OX5 engines. A 1931 edition of the SAE Handbook lists Curtiss Aeroplane and Motor Co. Engineers on Standard Committees. Most of the fastener threads are current sizes. There are a few exceptions I have found. These include a #14-24 tpi machine screw used on some case closures, and a 1/4"-24 tpi machine screw used on the oil pump mount.

**Text And Photos Submitted by Steve Hennessy #23168 - June 10, 2021**

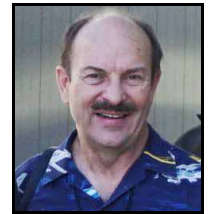


## *Message From The Officers*



### **President's Message:**

Greetings OX5ers! I hope once again that this newsletter finds everyone healthy as this Pandemic is finally coming to an end. I hope all of you are vaccinated that want to be so you can have as much freedom to do the things that we normally can do. I am excited to be attending EAA AirVenture. I hope to connect with as many members as possible. I know that everyone missed it as much as I did. Thanks to all the members that were able to make it to Sun n Fun. It was great to visit with so many friends.



The restoration progress never goes as fast as we hope it will be. I have made progress. The engine crankcase is back at Steve Hennessy's shop, the crankshaft has been boiled out, checked for straightness and has been magnafluxed. The camshaft is at McQuillen Engines getting a new grind. My Waco fuselage finally made the trip from IL, where it has been in storage, to my hangar in CO. I hope to start assembly in a few months.

Please stay safe and healthy.

Rich Wilbur  
National OX5 President  
719-439-8088  
[waconine@yahoo.com](mailto:waconine@yahoo.com)

### **Treasurer's**

#### **Message:**

I was glad to remove my mask and get back to normal – or to whatever the new normal will be. Good reports from Sun n Fun – a record breaker. Sounds like the Florida OX5 wing was busy hosting and feeding a lot of visitors. That clubhouse is always a destination. Thank you to all at the Florida Wing – plus to every other volunteer that made it happen.



Our EAA Chapter 48 opened our local flying season celebrating over 60 years at the same location with the first fly-in – Funday Sunday on May 2<sup>nd</sup> – Blue skies and good weather made for a terrific turnout. We still had to adapt our food service with social distancing – individual condiment packages – outside seating only -



## Message From The Officers - Continued

separate lines with 6 foot markers – but the excitement of hearing the planes arriving made it all worthwhile.

The WACO museum hosted a pancake breakfast May 22<sup>nd</sup>. Light winds and blue skies attracted planes of all types and sizes. Most flew in just to sample Russ Berry's famous pancakes. Russ was assisted by Tim Pinkerton until that last pancake was served. The field was a kaleidoscope of colors accented by the sounds of engines – such a pretty sight!

It has been nice to renew friendships with old friends- meet new enthusiasts and compare stories over the past year. Looking forward to a fun flying summer....

Thank you for all the dues payments and donations that keep our scholarship programs active. If you haven't already paid – please send a check or visit our website and use the PayPal option.

Patty Wagner  
National Treasurer  
937-999-9594  
[nc7444h@aol.com](mailto:nc7444h@aol.com)

### Secretary's Message:

Greetings OX5 Members:

One important point that I need to pass on is that I do not text and my old cell phone does not know what to do with a text - thank you kindly! This year progressed with the National Organization expecting to have a new Newsletter Editor taking over my old job - that has not happened. Rich Wilbur, our President, finally asked me to step back in temporally to get a National Newsletter sent out to the OX5 Membership. We have important information for the membership that needs to be published. All the great pictures of the folks who attended Sun 'n Fun this year were also lost when the person who was supposed to be your new Newsletter Editor disappeared from the face of the earth with no contact or explanation.



If any of our Regular Members paid their National dues at Sun 'n Fun to the Midwest Florida Wing, please contact our Treasurer Patty or myself so that we can update our master records. I want to make sure that Regular Members who paid their National OX5 dues for 2021 get their updated membership cards.

The OX5 Scholarship Program is off and running strong for another year. Application forms are included at the end of this Newsletter and can also be found on our website at [ox5.org](http://ox5.org). Please consider passing this information on to any qualified person and also being a mentor for them.

AirVenture is just around the corner and the Vintage Area has asked the OX5 Wisconsin Wing to run our display engine again during their show time every day. We expect to have a booth in the display building and I look forward to meeting OX5 members. Best wishes and happy memories.

Don Volland  
National OX5 Secretary  
262-642-3115  
[aerooptics@aerooptics.com](mailto:aerooptics@aerooptics.com)



# Wing Struts



**Kansas Wing:** Harold Walter included the following article in their March 2021 Kansas Wing OX5 News.

**U-CONTROL MODEL by Harold Walter:** When working at Convair San Diego the airplane Aero Group would get together and fly model airplanes on Saturday mornings, if work was not necessary. The meeting place was at Hour Glass Field. The field had been an emergency landing area for Miramar Naval Air station, and was located next to that airfield. It was no longer in use, and had plow “ditches” in order to prevent drag racing – an ideal place to fly models.

The models were built by individuals, and were generally experimental in nature. There were many configurations intended for exploring different ideas and modifications by the builder. Model types generally consisted of free-flight, U control and hand launch gliders.

One of my personal projects was to design and build a small U-control model and learn to fly it. When construction was finished, I could fly it easily. Next, our daughter, Sharon, learned to fly it. It was so tame that it would land itself. A symmetrical wing airfoil and a horizontal tail stabilator with an anti-servo tab were basic features.

It was very educational. I learned that the stabilator pivot point needed to be at or very near the quarter chord point of the stabilator, its Mean Aerodynamic Center. I’ve since been told about an airplane that had a small pitching oscillation, and have suggested that the pivot point be moved forward a small amount, based on my findings.

Several ideas were tested.. It was always interesting to see each person’s product.

**Ohio Wing:** Jim Beisner reports to us with the following information regarding our past OX5 National Treasurer who flew west several years ago.

Just a note to let you know that the Ohio Wing has established a memorial fund in honor of Janet Barnard. It will be earmarked for the technology section of the Learning Center at the Waco Museum. She had contributed hundreds of hours as a volunteer in the aviation related educational programs for young people. We are starting with \$600. Sorry for the delay in this announcement. Hope all is well! Jim B

**Wisconsin Wing:** Don Voland reports that the Wisconsin Wing has their OX5 Demonstration Engine ready to go for the 2021 season.

The first run is expected to be at Palmyra, WI on Fathers Day for their usual pancake breakfast. We are also expecting to be at AirVenture again each day in the Vintage Area.







# Flown West



It has been reported that the following members have Flown West:

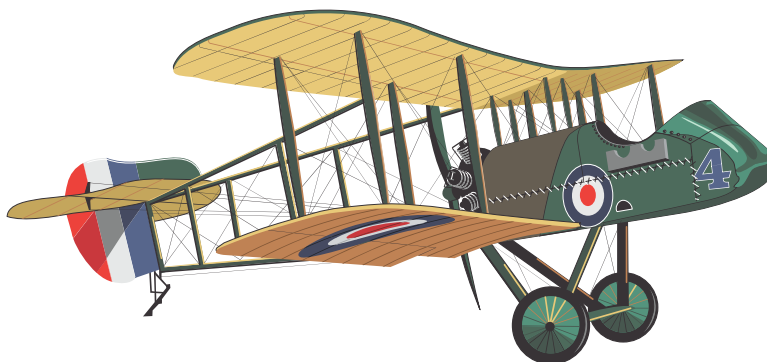
		Wing	Date
Gene Hammond	OX5 Membership # 21870	Illinois	12-Nov-20
Dennis L. Shapiro	OX5 Membership # L-21210	Nantucket/New England	16-Feb-21
George A. Chandler	OX5 Membership # L-13275	Texas	10-Feb-21
Albert Stix	OX5 Membership # 23275	St. Louis	Unknown
Leon Burton Dick	OX5 Membership # 22132	Alaska	05-24-21
John Caldwell	OX5 Membership # 20383	Maryland	2019

## HELP WANTED

Join the OX5 National Team And Be Our  
Newsletter Editor - Immediate Opening

Please Contact:

Rich Wilbur  
National OX5 President  
719-439-8088  
waconine@yahoo.com





## OX5 AVIATION PIONEERS

PO Box 769, Troy, Ohio 45373

501 (c)(3) Non-Profit Pennsylvania Corporation

### Colorado Springs, CO Office:

8657 Coyote Creek Drive  
Colorado Springs, CO 80924  
Richard Wilbur, President

### Troy Ohio Office:

PO Box 769  
Troy, Ohio 45373  
Patty Wagner, Treasurer

### East Troy, Wisconsin Office:

N8680 Stone School Road  
East Troy, Wisconsin 53120-2334  
Donald Voland, Secretary

## MINUTES FOR 2021 NATIONAL OX5 BOARD MEETING - LAKELAND, FL - APRIL 15, 2021

### A. Roll Call

Attendees: Richard Wilbur, Tim Pinkerton, Donald Voland, James Beisner, Sam Meek  
Lindsay Martin, Nicole Azzaro

Proxy Votes: Donald Voland held proxy votes for Patty Wagner and Dennis Yerkey. (Patty was unable to connect via zoom due to confused information.)

A quorum was represented to allow a legal Governors Meeting.

### B. Secretary's Report:

A copy of the Minutes from the National OX5 Board Meeting - October 10, 2020 was provided to each attendee.

### C. Treasurer's Report:

Check Book Balance - Information available to members only on a need to know basis.

Investment Balance - Information available to members only on a need to know basis.

### D. President's Report:

1. The Financial Health of the Organization is good and the Scholarship Program is expected to continue. The EAA Camp was cancelled for 2021 - the \$600 Scholarship registration fee was refunded to the OX5 Organization.
2. Reunion for 2022 - The plan is to try to have the Reunion in Fairbanks, Alaska.

### E. Old Business:

1. The transfer of OX5 Newsletter editors duties to Nicole Azzaro - National Governor. Nicole is planning on working on the Newsletter right after Sun 'n Fun.

### F. New Business:

1. Richard Wilbur indicated that Dennis Yerkey told him that he would be willing to step down as a Governor due to his inability to participate personally in the Board Meetings. The Board Members thanked Dennis for his many years of service as a Governor. Dennis will continue his duties as OX5 Webmaster.



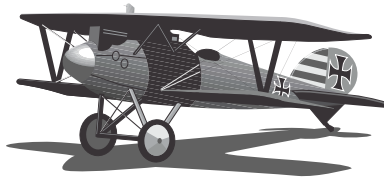
## Board Meeting Minutes - Continued

2. Greg Gaynor, 1350 Cherry Creek Road, Sparta, TN 38583 agreed to fill the unfinished Governors term of Dennis Yerkey. A motion was made, seconded, and approved by the Board to accomplish this transition for the open Governors position.
3. A motion was made, seconded, and approved to have Lindsay Martin and Nicole Azzaro formulate a contingency plan for the continuity of both the Secretary and Treasurers duties. This is to be accomplished by November 1, 2021.

G. Meeting adjourned.

Donald R. Voland, National OX5 Secretary

(Note: An informal OX5 Membership Meeting followed the Board Meeting to brief those attending Sun 'n Fun on the matters discussed in the Board Meeting.)



## Scholarships

OX5 Aviation Pioneers Scholarships:

For 7 years, the OX5 Aviation Pioneers have awarded aviation training scholarships with the goal of supporting young men and women in their efforts toward an aviation career.

In 2021, the OX5 Aviation Pioneers will award two \$1000 scholarships for aviation education for those who are working towards a career in aviation. The application deadline for the Educational Scholarship is **August 1, 2021**.

Additionally, a \$500 Discover Aviation scholarship will be available for children aged 12-16 who would like to attend an aviation camp.

The application deadline for the Discover Aviation Scholarship is **August 1, 2021**.

Send completed scholarship applications to:

OX5 Aviation Pioneers  
Scholarship Program  
PO Box 769  
Troy, OH 45373

**OX5 Aviation Pioneers  
2021 Education Scholarship Application**



Name \_\_\_\_\_ Date of Birth \_\_\_\_\_

Permanent Address \_\_\_\_\_

Home Phone \_\_\_\_\_ Cell Phone \_\_\_\_\_

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

**OX-5 Sponsoring Member:**

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

Member # \_\_\_\_\_

Member Address \_\_\_\_\_

Member Phone \_\_\_\_\_ Email \_\_\_\_\_

Wing \_\_\_\_\_

**Education:**

School City/State Years Attended Degree or Diploma GPA

**Pilot Certification (if any):**

**Private Commercial Ratings Flight Hours**

On separate paper, please respond to items listed below. Put your name on the top of each sheet and refer to the items by the appropriate letter (A, B, C).

**A. Accomplishments in or out of school**

Indicate honors, awards, performances, clubs, etc.

**B. Aviation Activities**

List aviation activities in which you participate, membership in aviation organizations and any aviation related employment.

**C. Goals**

Tell us about yourself and your goals. Write a statement about your educational and career goals. State how you first became interested in aviation and your future goals with aviation. Specify certificate, rating or education goal you will be obtaining with this scholarship.

**Letters of Recommendation:** Two are required. At least one must be from a person knowledgeable of your aviation goals.

**The application deadline for the Educational Scholarship is August 1, 2021**

**Funds are made possible, in part, from the generous gifts from the Colorado, Georgia, and Maryland Wings.**

**Send application materials to:** OX5 Aviation Pioneers, Scholarship Program, PO Box 769, Troy, OH 45373



**OX5 Aviation Pioneers**  
**2021 Discover Aviation Learning Through Fun Scholarship Application**



Name \_\_\_\_\_ Date of Birth \_\_\_\_\_

Permanent Address \_\_\_\_\_

Home Phone \_\_\_\_\_ Cell Phone \_\_\_\_\_

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

**OX-5 Sponsoring Member:**

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

Member # \_\_\_\_\_

Member Address \_\_\_\_\_

Member Phone \_\_\_\_\_ Email \_\_\_\_\_

Wing \_\_\_\_\_

**Education:**

School City/State Years Attended Degree or Diploma GPA.

**Pilot Certification (if any):**

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**OX5 Aviation Pioneers**  
**P. O. Box 769**  
**Troy, OH 45373**



**Web Site: [www.ox5.org](http://www.ox5.org)**

**Attention Regular OX5 Members - Dues Renewal Time** - The annual dues year starts January 1, 2021 and extends to December 31, 2021. Regular Members who have not paid their dues by April 1, 2021 will be considered as "not in good standing". Regular Members who have not paid their dues for the past two years will be removed from the Master Membership List.