



Engineers' News

December 2021

Vol. 84 No. 4

[www.FortWayneEngineersClub.org](http://www.FortWayneEngineersClub.org)



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## December Social

This year's event will be at the former International Harvester Engineering Center - 2911 Meyer Rd and is hosted by the Harvester Homecoming organization

**When:** Thursday, December 9th 6:00 PM to 9:00 PM

**Website:** <https://harvesterhomecoming.com/>

**Info:** Pizza, snacks, and drinks will be provided at the club's expense. Please join us for a fun night of eating, socializing, and touring the old International Harvester building.

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## November Tour Summary

**FORT WAYNE  
RAILROAD  
HISTORICAL SOCIETY INC.**

by Rod Vargo

**Where:** 15808 Edgerton Rd., New Haven

**Date:** November 18th 2021

Generations of highly skilled volunteers have gradually grown this society into a financially stable and nationally respected all-volunteer nonprofit 501(c)3 collection of actual railroading activity, restoration projects, and museum pieces. Decades of continuous operation mean literally anyone of any knowledge level and almost any age can fit in. A common first task (if desired) is to hand wash the huge connecting rods on Locomotive 765's drive wheels to reduce grime entering its vulnerable brass bearings. Our tour participants were instructed and then free (as cautious engineering types) to climb on 765, which is 100' long x 16' high x 11' wide. Many loved to hang out in the Society's peaceful 1890 and 1900 era cabooses, and explore the shop floor.

For more, click [here](#) to read the full summary

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## **Volunteer Positions within the Club**

This month's spotlight is on the position of

### **Discover-E Committee**

Discover-E week (formerly Engineers' Week) is celebrated annually during the last week in February. This week is set aside to be a celebration of the Engineering profession in our society and if you ask me it should really be the whole month! Virtually everything you use throughout your daily life was designed and/or improved upon by an engineer. If you took a hot shower today, thank a mechanical engineer for designing your plumbing system; an electrical for the instant hot water heater; a civil for providing you clean water to wash with; and finally a chemical engineer for clearing that water before it hits the river. I could go on and on, but you get the idea.

How you can express your gratitude for all that engineers' have provided throughout these years, by joining the [Discover-E Week committee](#). Our local celebration typically includes a tour by the Fort Wayne Engineers' Club, as well as the annual [Bridge Building competition](#) held at PFW and local high schools. [Future Cities competitions](#) are also judged that week, as well as many community science fairs and events.

If interested, please email Ryan at [Info@FortWayneEngineersClub.org](mailto:Info@FortWayneEngineersClub.org)

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## **Job posting and resumes listed**

The club accepts both job openings from around the area, as well as resumes from those seeking employment. Please submit these to the following email address:

[Info@FortWayneEngineersClub.org](mailto:Info@FortWayneEngineersClub.org)

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## Items of Note

FWEC member Rod Vargo is Chair of the 27 year-old and all-volunteer [Utility Advisory Group](#), which formally advises Fort Wayne City Utilities and often City Council. Your comments are welcome at [rodvargo@Comcast.net](mailto:rodvargo@Comcast.net)

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AN EFFECTIVE WAY TO INFLUENCE ROAD, BICYCLE, AND SIDEWALK PLANNING. It has consistently been worth my time to interact with NIRCC (Northeastern Indiana Regional Coordinating Council). A public comment period is now open on the "Participation Plan Final Draft 2021" through January 2, 2022. See [www.nircc.com](http://www.nircc.com) and/or visit NIRCC's office at room 230 in Citizen Square. The usual Open House each February or March is probably cancelled due to Pandemic restrictions. Requests and comments should be directed to Dan Avery, Executive Director of NIRCC, at [dan.avery@co.allen.in.us](mailto:dan.avery@co.allen.in.us) or by mail.

Rod

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## Local Opportunities

### Experimental Aircraft Association Chapter 2

The Experimental Aircraft Association's Chapter 2 is very active. Check the [EAA-2 website](#) for current information!

Have you ever seen an airplane built in a week? Check out this [link](#) to see it.

[Calendar of Events](#)

### TekVenture

Autum 'N Makin' Workshops in blacksmithing, tool skills, ceramics, hybrid car batteries, CNC, art welding, electronics and electricity, cardboard carpentry, and theatrical brainstorming, are ongoing through Dec. 29 at TekVenture Maker Space, 1550 Griffin Street. Details at [www.tekventure.org/workshops](http://www.tekventure.org/workshops). Phone: (260) 432-1095.

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## General Club Info

Fort Wayne Engineers Club dues are \$0. Donations are welcome but strictly voluntary. In recent years, club funds have helped support Discover-E, the Regional Science and Engineering Fair, annual bridge building contests in schools, academic awards, networking events, mentoring, our website, and facilitating free tours. Please see [FortWayneEngineersClub.org](http://FortWayneEngineersClub.org), LinkedIn, or Facebook for updates on current Club activities, other news, and/or prior newsletters.

Those participating in activities through FWEC and our hosts does so strictly at their own risk, including disease exposures. Participation in club events is voluntary, free,

nonprofit, and solely for the benefit of participants and the community at large. Anyone with an interest may participate unless restrictions are specified for specific events, such as minimum age or minimum safety attire.

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## **Interested in hosting a tour?**

Contact us at [Info@FortWayneEngineersClub.org](mailto:Info@FortWayneEngineersClub.org)

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## **FWEC Board Meetings**

The FWEC board meets eight times a year to plan and organize tours for our members. These meetings are open for anyone to attend. We are always looking for new members to join our team! If you are interested in being a board member please attend our next board meeting or contact us at [info@fortwayneengineersclub.org](mailto:info@fortwayneengineersclub.org).

### **Next Meeting**

Date: Tuesday January 4th, 2022

Time: 7:00 pm

Location: Blackstone Laboratories 502 E Pettit Ave, Fort Wayne, IN 46806

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## **FWEC roster for FY2021-2022**

President: Nate Berndt

Vice President: Open

Secretary: Marna Renteria

Treasurer: Ryan Stark

Treasurer-Trainee: John Magsam

First-year Board Members: John Magsam, Mike Magsam

Second-year Board Member: Dave Gordon, Bert Spellman

Third-year Board Member: Craig Welch, John Renie

Editor of Engineer News: Open - interim: Ryan Stark

Membership and Contact Chair: Open

Northeast Indiana DiscoverE Chair: Open

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## **Advertise in the Engineers' News**

The FWEC provides advertising space within the Engineers' News. Advertisements are \$10 per issue and limited to ½ page of content. For submissions please contact [info@fortwayneengineersclub.org](mailto:info@fortwayneengineersclub.org).

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### **November Tour Summary Continued**

They have not had a meaningful injury or accident in their half century of existence, despite working with retired equipment of a notoriously dangerous industry. As with most of our outstanding hosts, much was said about sound financial management, operating costs, and planning which were learned from harsh experiences. They originally moved ahead on a frugal pay-as-they-go basis, but learned to also lay away funds from locomotive rides and other activities to replace parts as they wear out. Discussions were routine regarding regulations, reasons for them, and fatigue or wear.

They tend to operate on a project manager type basis, where individuals with a particular passion or project are vetted and then supported in pursuit of the goal.

Cold wet weather with vicious winds kept our tour mainly inside their wonderfully warm and well lit shop with ample space for Locomotive 765, two cabooses used for Christmas Santa rides, a vintage wood boxcar undergoing restoration, storage, and ample overall facilities. They are known for extensive outdoor collections at their site on the north side of a former military storage depot, directly east of New Haven.

An early diesel locomotive is nearly restored, awaiting painting. The next project waiting outside is an exquisite oil-fired steam loco from 1906 with six drive wheels and imposing size, but designed for local general purpose uses. It survived into modern times doing switchyard services at a local steel mill, until the locomotive's rolling resistance became impossible from bearing wear. Cost of fuel and other materials will be \$175/hr at current prices, compared to \$2100/hr for Loco 765. It will allow the Society to use a steam loco for many tourist activities and fundraisers, instead of a diesel, and require far fewer volunteers. (Locomotive 765 needs about 12 volunteers every 2-4 hr for lubing and other activities, plus 4 specialized volunteers to operate it.)

Locomotive 765 became a focal point of our tour. It was built for Nickel Plate Railroad fast freight during World War II and eventually ended up as a display relic in a Fort Wayne park until 1972. Experienced volunteers needed until 1989 to get it operational, but did not set aside funds from tourist ticket sales for repairs and overhauls. It was inoperable from 1993 until 2005. Since then, money is set aside to sustain wear and legally required inspections.

The Fort Wayne Railroad Historic Society is somewhat unusual in operating on mainline railroad rights-of-way (versus isolated "short line" trackage) under a system

where most of the train and supporting volunteers are, for legal purposes, leased to and controlled by a commercial railroad. For various homeland-type security and other regulatory reasons, 765 has various inconspicuous retrofits for modern communications and regulations. When "leased" by a railroad, it also has a few of that railroad's employees aboard and one of the leasing railroad's diesels in tow. The diesel could be eliminated but saves \$35,000 a year in electronic subscriptions and offers backup power just in case. Locomotive 765 has Positive Train Control.

Most of these late-model coal locomotives burn more cleanly than modern diesel cars and trucks, but will likely convert in time to oil. Optimum boiler pressure is 245 psi and superheating pipes are used to expose steam to furnace heat again, assuring all moisture is in the form of steam for maximum expansion power in the drive cylinders. (Water remaining in steam will not expand, but occupies space in the steam supply.) Officially, 765 is a Berkshire 2-8-4 of 4,500 HP set up for bituminous coal (originally burned harder to obtain and very expensive anthracite). Top speed 80 mph. Readily does 70 mph in use with 30 cars and a backup diesel loco in tow.

Up close, the array of piping and plugs seems implausible for volunteers to keep track of, and then equally complex lubrication points every watering and coaling stop (perhaps 140 miles/fill). Steam powers air compressors at the front of the loco, drives three dynamo's near the roof of the cab, turns a coal auger/crusher in the tender, carries and sprays crushed coal into the firebox (when the train is moving), helps move sand to the drive wheels when needed for traction, steam-cleans the track in front of the drive wheels when needed, and (using exhaust steam going up the "chimney") helps draw air through the furnace and boiler tubes.

Most of 765's wheels can pivot, shift sideways, or otherwise articulate sufficiently to allow up to a 20 degree curve (= 288' radius in layman's terms). This is equivalent to today's ubiquitous SD40 general purpose diesel engines, and more nimble than a SD70.

This report is shorter than usual to free space up in this month's newsletter. But, a simple visit to the Fort Wayne Railroad Historical Society is highly recommended and readily available to anyone. Visit [www.fwrhs.org](http://www.fwrhs.org) ahead of time, but the facility is typically open for visitors on weekends from noon to 4 pm. Special thank you to Chris Homco for a lively and thoroughly engaging dirty-hands evening.

Rod Vargo





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