



American Steam Railroad Preservation Assoc.

Preserving America's Railway Heritage

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2100's new boiler tubes delivered, FMW Solutions selected as vendor to design new recycled oil firing system for a Wooten firebox

July 31, 2023

Cleveland, OH – Restoration of Reading T1 4-8-4 no. 2100 by the American Steam Railroad Preservation Association (ASR), a 501(c)(3) non-profit, is at the final stage of completing the boiler's interior, with the delivery of 291 new 2" boiler tubes awaiting installation.

"We are extremely grateful to our donors that contributed to the purchase of the new tubes, and proud of our younger volunteer members who did a majority of the cleaning of the boiler shell's interior while also taking 1,320 ultrasound metal thickness readings of the flues and bottom four feet of the boiler's shell, due to that area being externally inaccessible by suspension components", says President and restoration crew volunteer Rob Gardner. "Their dedicated efforts saved us tens of thousands of dollars that would have needed to be raised for professionals to come and do the same work".

In other news, based on economic and operating challenges, ASR's Board of Directors has made the decision for No. 2100 to be set up as an oil burning locomotive utilizing recycled oils, including recycled vegetable oil. "Over the past 18 months ASR has been reviewing operating opportunities and costs with regard to the fuel we should be utilizing", says Forrest Nace, Treasurer and restoration crew volunteer. "While ASR has many of the parts to finish the firebox and tender to burn coal, we still estimate \$45,000 to complete that phase of the project as repairs are needed to some of the major components, and the Cyclone Front End would need to be completely recreated".

Forrest continues to state, "While the fuel will be changing, ASR is committed to properly storing the unused coal components, and having the external firebox and inside cab appearance be as it was originally built, including the firebox butterfly doors. Since the oil bunker has already been constructed and approved for use by our professional contractor, one large cost for a recycled oil firing system has already been completed. Taking into account the expense of not only the coal but its transport, proper storage, loading, and ash abatement, it became evident that it would be difficult to have any remaining funds after operating at non-steam railroads and museums we are in discussions with. Additionally, the logistics of storing, refueling, and burning liquid fuel is in-line with what modern railroads and diesel operated tourist lines are accustomed to, thereby greatly expanding our opportunities and reducing emissions. While many large steam locomotives were built to burn oil, and some in preservation still utilize this practice, the 2100's Wooten type firebox was not scientifically designed to burn anything other than Anthracite coal. As such, ASR has selected FMW Solutions as the contractor to engineer the 2100 with a proper recycled oil firing system."

"Our firm has extensive, personal experience in operating and designing systems for oil fired steam locomotives, and we are pleased to have been selected to design and install a firing adaptation that will make the 2100 a more sustainable locomotive", states Wolfgang Fengler, Vice President of Engineering of FMW. "The versatility of this firebox's ability to burn culm, anthracite, and bituminous coal show it to be a very adaptable design. With the proper components, fire pan dimensions, layout, air controls, and draft, it will produce excellent steaming capabilities and performance burning recycled oil as fuel."

A fund-raiser for boiler tube installation was just launched to raise the remaining \$10,767.00 needed to install the tubes. Each donation of \$37.00 pays for one tube to be rolled, beaded, and welded in place.

ASR is also selling tickets for the next Legends of Steam fundraiser being held October 28th, 2023 in Cleveland, OH with Steve Wickersham as the keynote speaker. Steve was Ross Rowland's "right hand man" being hired as Administrative Assistant for the American Freedom Train as well as taking part in the "30 day miracle", then becoming an engineer, fireman, and the Chief Mechanical Officer for the 2101 during the Chessie Steam operations, and with the C&O 614 up through the ACE 3000 project. Steve will be discussing the 2101's and 614's restorations, and telling stories as the fireman and engineer on many trips with the two locomotives. Steve will also be showing many images from his personal photo and slide collection during his presentation.

Tax-deductible donations towards the restoration of the Reading T1 no. 2100 can be mailed to American Steam Railroad Preservation Association, 2800 W. 3rd St., Cleveland, OH 44113, or made online at www.americansteamrailroad.org.