



Engine 557 Restoration Company

November 27, 2015

John H. Emery Rail Heritage Trust
First Option Bank
Attention: Kathy Lovig, Senior Trust Officer
702 Baptiste Drive
Paola, Kansas 66071

Dear Ms. Lovig,

Per the stipulations of our grant award I am providing a status report of the Engine 557 restoration project and the use of John H. Emery Rail Heritage Trust grant funds.

a. Description of progress made including photographs if appropriate.

The Engine 557 restoration had been in progress for nearly three years at the time of our grant application and the status as of mid-2015 was described in our application. Significant accomplishments subsequent to our application include:

Boiler

During two intense 10-day periods in July and August, a contracted professional engineer/boiler maker, a contracted boiler maker, and 17 volunteers completed final fitting of new firebox components, installed the replacement firebox, made initial welding passes to stabilize and secure all plates, and hot riveted the firebox to the mud ring. The installation of the firebox is approximately 85 percent completed. Remaining work includes fitting and welding lower corners and making additional welding passes on all seams.

The welded installation of “sockets” for the upgrade of approximately 400 rigid stays to flexible stays is underway. Several individuals certified to weld pressure vessels are donating their time to install the sockets and do other boiler welding.

Brakes and Running Gear

Retired Alaska Railroad Chief Mechanical Officer Jerry Peters has personally taken on the tasks of inspecting and overhauling the locomotive and tender braking systems and control valves and is leading the overhaul of the brakes.

Tender

Cleaning, sand blasting, and repainting of the tender frame has been completed.

Cleaning and sand blasting, internal and external, of the water tank has been completed. The interior has been coated with a specialized coating. The exterior has been primed and the first finish coat of paint has been applied. The water tank has been returned to the frame and is temporarily supported on blocks to allow the fitting of piping and final assembly.

The Municipality of Anchorage gave the Engine 557 Restoration Company permission to remove components from park display locomotive ARR #556. Included were parts of the buffer attaching the locomotive to tender, an injector, several specialized fittings and valves, and other specialized components. The donated buffer parts and a newly fabricated buffer receiver have been installed to replace components removed by the railroad many years ago when the tender was converted for maintenance-of-way use.

Tender truck side frames have been modified to allow the fitting of roller bearings to replace bronze “friction” bearings. Roller bearings and adapter kits for the conversion have been acquired.

The tender hand brake system is being overhauled and several missing pieces have been fabricated in-house.

Education and Outreach

Most of our resources are currently dedicated to the restoration and overhaul of Engine 557. However, an important part of our non-profit mission is education, and we have welcomed a number of groups and individuals in visits to the engine house. Education and outreach has also been conducted at a number of venues, including the Alaska State Fair, the Anchorage Centennial celebration, and Anchorage Parks Founder’s day event.

Photographs of recent accomplishments are attached and show work completed since mid-year.

b. Summarized accounting of funds (received and distributed) for this project.

The grant gifted by the Trust has been received and placed in reserve for a final payment for boiler stays and other internal boiler parts. These parts are currently being custom manufactured. Trust funds and other reserved funds will be used to make a \$27,000 final payment, due within approximately two months when the components are completed.

c. Accounting of volunteer labor.

Detailed hourly records of all volunteer labor were maintained for the first year of the restoration. However, we determined the benefit of routinely collecting the detailed data did not justify the administrative workload that this data collection entailed. We now estimate volunteer labor hours based on the number of days that each volunteers signs in at the job site. We estimate that in excess of 30,000 volunteer hours have been expended on the restoration since August, 2012. More detailed records are kept when necessary for grant matching or other purposes and we kept detailed records of the volunteer labor in support of the contracted boiler makers during July and August, 2015. Over a 23-day period, 17 volunteers contributed 1,142 hours.

d. Plans for the remainder of the identified time through 31 March 2016.

Major tasks which we expect to complete by March, 2016 include:

Boiler

Complete the welding of the firebox seams and installation of firebox corners.

Fit and weld remaining sockets for flexible stays.

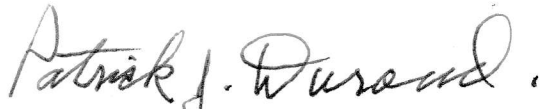
Installation of a portion of the boiler stays.

Tender

Complete the overhaul of the tender, to include piping, brakes, a final coat of paint, and lettering. Two items remain to be purchased or outsourced, stencils for tender lettering and new wheels and axles. A local firm has committed to supplying laser cut stencils and we believe we have found a source for donated axles. Overhaul of the original trucks will be completed when new wheels and axles are acquired.

If you have questions, feel free to contact Secretary/Treasurer Dick Morris at (907) 338-5338 or rmorris@alaska.net.

Sincerely,



Patrick J. Durand
President

Photographs



A line of volunteers' vehicles is parked next to the engine house on a typical Saturday in October, 2015. The lease of the near half of the building is donated for the duration of Engine 557's restoration. This building is ideally situated. Immediately behind the photographer and visible where it curves around the far end of the building is the main line of the Alaska Railroad. To the photographer's left is the siding which will be tied to the tracks in the building when Engine 557 is ready to make her first shake down runs. The closest vehicle is our "new" "company truck," recently donated by Enstar Natural Gas. The 1981 F650 with lift gate and only 51,000 original miles is perfect for our needs.



A boiler maker and a 557 volunteer do the final alignment and fitting of a firebox side sheet prior to any welding.

The boiler maker uses tack welds to secure the new boiler sheets into place.





After the firebox sheets are fitted and the rivet holes in the mud ring are reamed to size, the fun begins! Rivets are heated to 1800 degrees, removed from the oven, and quickly moved to the mud ring where they are inserted into the rivet hole.

Rivet heads are then formed using a pneumatic hammer on each side before they cool.



A perfect line of rivets!



At the end of a grueling 12 hour day, all the mud ring rivets have been installed and the crew poses for a victory photo.

We are frequently asked, “Where do you get replacement parts?” On rare occasions we get lucky and there are original parts available from another locomotive. We were fortunate that the Municipality of Anchorage permitted us to remove a number of parts from sister locomotive ARR #556, displayed in an Anchorage park, in what some city officials referred to as an “organ transplant.”



557 Maintenance Department volunteers remove buffer parts from ARR #556.



These buffer parts from ARR #556 might look like a pile of rusty scrap metal to some, but for us they were well worth the year spent working within the municipal bureaucracy to get permission to remove them. Wanting to leave something in return, we fabricated, and during our visit we installed, non-working replica safety valves and whistle to replace items that were stolen 50 years ago.

Other times, missing parts are fabricated to meet original specifications from our library of nearly 1,000, circa 1944 engineering drawings. Volunteers in the Mechanical Department transformed 1" steel plate and 12" diameter, 1" wall pipe into a buffer receiver, replacing a steel casting that was removed at least 50 years ago. Despite a quoted price of \$1,000 for the steel, donations of materials allowed us to replicate the original casting for only the cost of welding rod.



After being inverted for several months while the underside was cleaned, sand blasted, inspected, and painted, the tender frame is turned right-side-up in preparation for reassembly of the tender.



There were smiles all around when the tender frame was rolled up to the locomotive and the new buffer created from #556 parts and newly fabricated parts lined up perfectly with the mating part on the locomotive frame.

The tender water tank is being set into place. Our donated Case 721 loader has been invaluable for any number of "little" jobs.



The tender tank is reunited with the frame after a year's work on both pieces. It is on blocks until piping and final fitting can be completed. It temporarily rides on "shop trucks" while the original trucks are rebuilt and converted to roller bearings.

Although most of our resources are directed at the restoration, we always remember that education is an important part of our mission. Here Jeff Debroeck teaches a group of Boy Scouts about Alaska Railroad History and how a steam locomotive operates.



Many individuals and over 50 businesses each provide substantial support of the restoration. An example is Nonessentials, a local gift shop, which invited us to use half of their booth at the Alaska State Fair in August, where we contacted thousands of fair visitors and did education and outreach, collected donations, and sold 557 merchandise.

Anchorage House of Hobbies is another long-time supporter and allows us to use part of their valuable counter space for brochures and a donation jar. The most recent consolidated collection from their customers was for \$200.

