



## Norfolk & Western Class 'A' Project Information



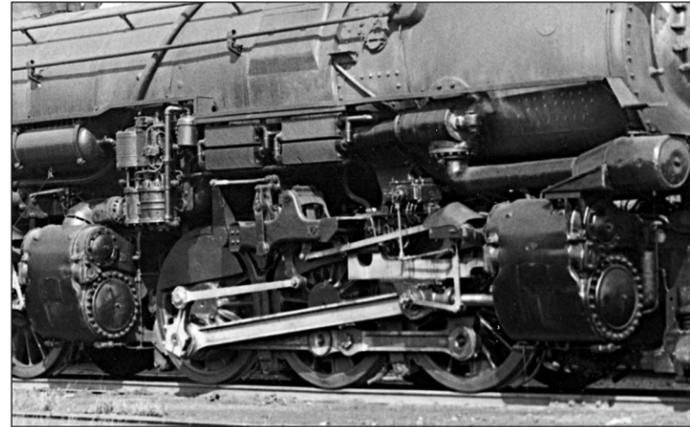
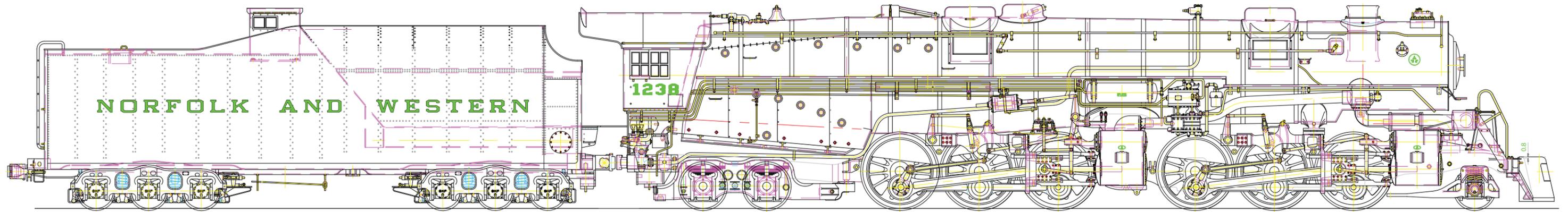
Our selection of the Norfolk & Western class 'A' locomotive as the subject of our latest locomotive model project was based on the great respect for the road's engineering and design expertise that we came to appreciate during the development of our first two Norfolk & Western projects, the Y6a and Y6b. The 'A' is widely acknowledged as one of, if not the most efficient steam locomotive ever built. Comparing very favorably with both the Union Pacific 4884 class (Big Boy) and Chesapeake & Ohio H-8 Allegheny, the class A was lighter and able to operate in areas where its two big rivals could not venture. A locomotive unique in many ways, it was a class of locomotive built entirely in N&W's own Roanoke Shops. The first of the class were built beginning in 1936 and the last member of the class was completed in 1950, being the last simple articulated steam locomotive built in North America.

With each project Kohs & Company has undertaken, it has always been our intent and ultimately our practice to advance the modeling art in significant ways taking advantage of the unique design opportunities presented by the subject prototype, our class A will be no different. Not only a large locomotive, the class A embodies features not seen on any other prototype, making it a very exciting challenge to do the prototype justice in our efforts. With the computer aided design capabilities that we have developed with our previous projects and our ability to produce parts with never before seen accuracy in brass modeling using CNC machining and Rapid Prototyping, this will be the first project that we take directly from design to production. You will be able to follow every step of the development and production on the project site at our web home. Our base specifications are listed below.

### Model Locomotive Specifications

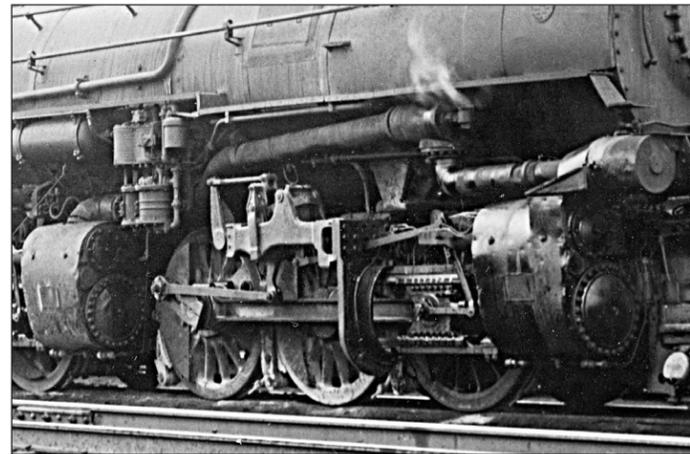
- Custom Electronics Control & Sound System Synced to each Engine
- Custom Speaker System with 4 Speakers for the Sound System
- Prototypically Mounted Running Boards with Functional Bracketing
- Fully Equalized and Sprung Suspension with Real Leaf Springs
- Dual Custom Wound Pittman Ball-Bearing Motors
- Electronically Controlled Valve Gear Mechanism
- All Bearing Boxes and Journals are Ball-Bearing Equipped
- Ball-Bearing Equipped Main and Side Rods
- Ball-Bearing Equipped Custom Drive Mechanisms
- Nickel Silver Main Rods, Side Rods and Valve Gear
- All Hatches and Compartments Open to show Full Detail
- Full Cab Interior Detail including Real Wood Components
- Brass Bezels and Lenses on Backhead Gauges
- Full Under-Body Detail on Locomotive & Tender
- Constant-Voltage Lighting
- Stainless Tires on Drivers and Wheel Sets
- Scale Profiles on Drivers and all Wheel Sets
- 65" Operating Radius

The first prototypes built in 1936 saw many changes and improvements, with major rebuilds taking place on the earliest examples leading to a class in the end that embodied very similar features and characteristics. The two major areas of difference between the locomotives were the running gear and the tenders utilized for each production group. Our versions will represent



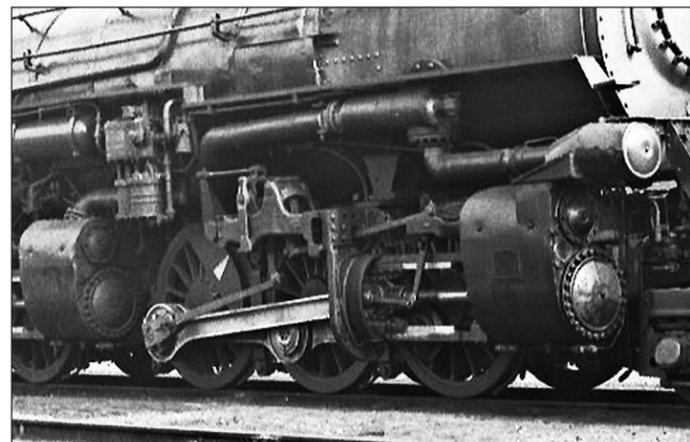
locomotives in service from mid World War II until the end of service. These prototypes would have all seen the updates and tender rebuilds that we expect to see in modernized service. The order form that accompanies this brochure will explain how the various features are assigned among the six versions of the model that we will produce. The elevation drawing shown across the spread above is taken from our actual design inventory. This drawing represents what will be our version number four, last production group locomotive, equipped with roller-bearing side and main rods and an 'I'-class tender.

We will model all three of the distinct running gear configurations that were used for the class A. The first type is the multiple-bearing crosshead using slab type side and main rods equipped with friction bearings. This configuration is shown in the top photo on the left. The second configuration is the 'Alligator' crosshead using the same type of slab main and side rods again equipped with friction bearings. The photo at the middle left shows this configuration. The final configuration shown at the bottom on the left is the 'Alligator' crosshead using roller-bearing equipped main and side rods. All three running gear configurations use Baker valve-gear control units. While each production group had its unique visual characteristics, by the time of late service, the locomotives were pretty consistent in appearance, but the tenders used for each production group was another story all together.



There are three tender versions used for our class 'A' locomotives. While the construction of each class was unique and reasonably consistent, the details and features varied somewhat with each locomotive assignment. Steam lines, signal lines and steam heat for the cupola were among the items that varied, these details will be correctly reflected with each road number we produce. Each tender class was designed to carry 22,000 gallons of water and 30 tons of coal, they all rode on Commonwealth trucks. All of the tender versions are illustrated on the last page of this brochure.

The Version 22-H tenders were rebuilt from the original class 'B' tenders, they were modernized for use with road numbers 1200-1209 (excluding 1203) & 1206). This tender class was also utilized with mid-version Y6b class locomotives. Being a slightly later rebuild than the 22-C, the construction is cleaner with fewer seams in the sheeting and there were also fewer rivets used in favor of a greater use of welding. The brake cylinder is mounted on the mid-section of the underframe.

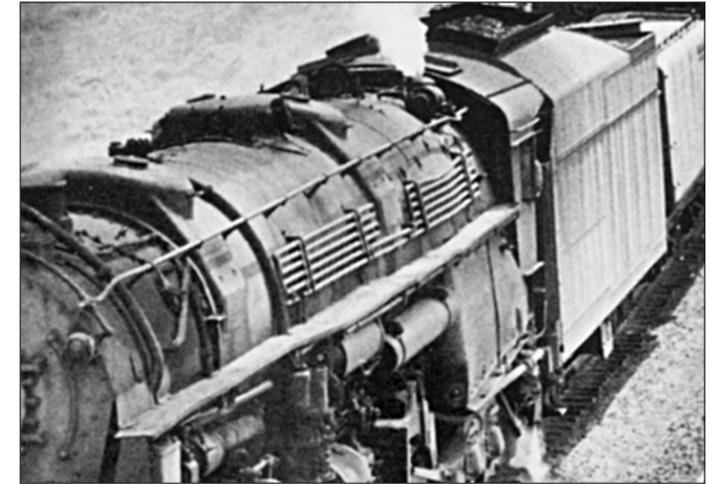


The Version 22-C tenders were rebuilt and modernized for use with road numbers 1213-1234 (excluding 1223). The side sheeting of the tank is built up in three layers and this detail is included on the model. Notice the frame mounted brake cylinder located between the front and rear trucks.

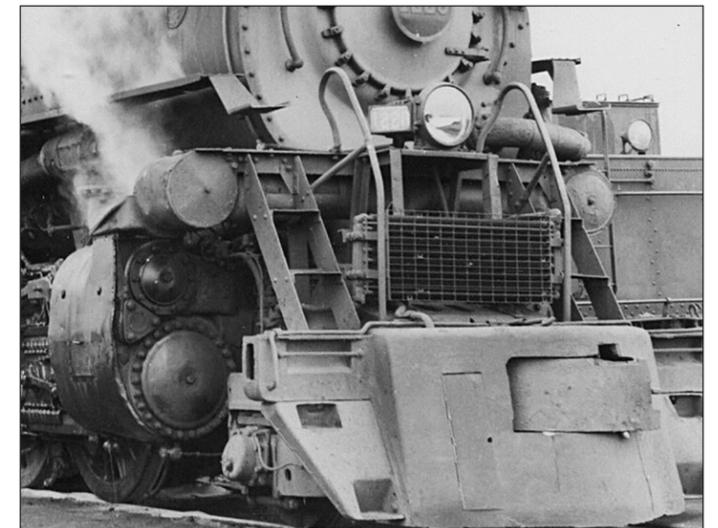
The Version 22-I tenders were very similar to the 'H' class tenders and were the only class of tenders built new for the class A's. Although there was only one class designation, there were multiple variations of the 22-I tender with the difference being in the tank construction (the number of seams and rivets). The tenders used with road numbers 1235-1242 were the last series built and they were the most modern in construction and appearance, by the time these tenders were built, welded seams had become the standard. Although this tender version still utilized Commonwealth trucks, the trucks now carried individual brake cylinders mounted on the front and rear truck frames.

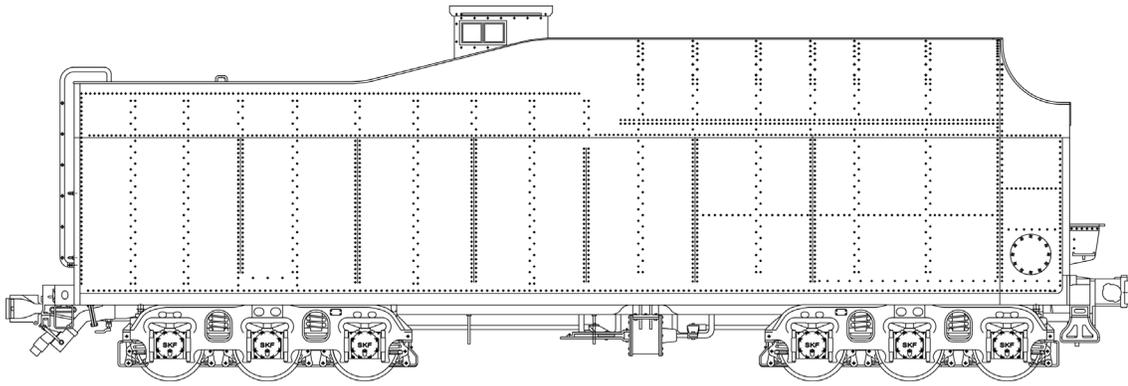
While the Norfolk & Western auxiliary tender ('A' tank) was classified as a separate unit from the locomotive and main tender, 'A' tanks were in use more often than not behind class 'A' locomotives and most other N&W locos for that matter. The illustration shown on the last page is very similar to the 'A' tanks used behind our N&W Y6a's and Y6b's, but there are subtle differences. The rivet and seam patterns are different from our previous version and the new version rides on Buckeye trucks rather than the original N&W T-40 trucks. The Buckeye trucks were used on the later conversions being more appropriate for modern service and A-tanks so equipped represented a small portion of the total number of units in service. It seemed only fitting to include an A-tank with each model we produce.

As with every project we have chosen to undertake, there are existing similar models to choose from, so the question has to be asked, why buy a Kohs & Company Norfolk & Western class A? From our perspective, the answer is very simple. We routinely go to greater lengths to not only research, but to also understand the prototype that we are modeling. There are no limits to what we will try to accomplish and profit is never the motivating factor in how we approach our subject. We take great pride in delivering finished models that will never have to be upgraded and our owners can take great pride in knowing that they own the best that has been done, our track record on model value speaks for itself. Be sure to visit the project site at [www.Kohs.com](http://www.Kohs.com) to access more reference material to aid in understanding this prototype and making a project selection.



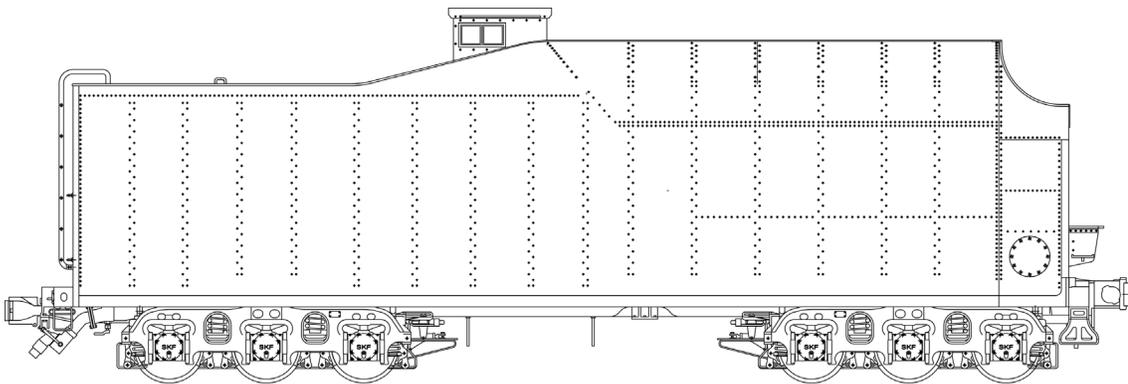
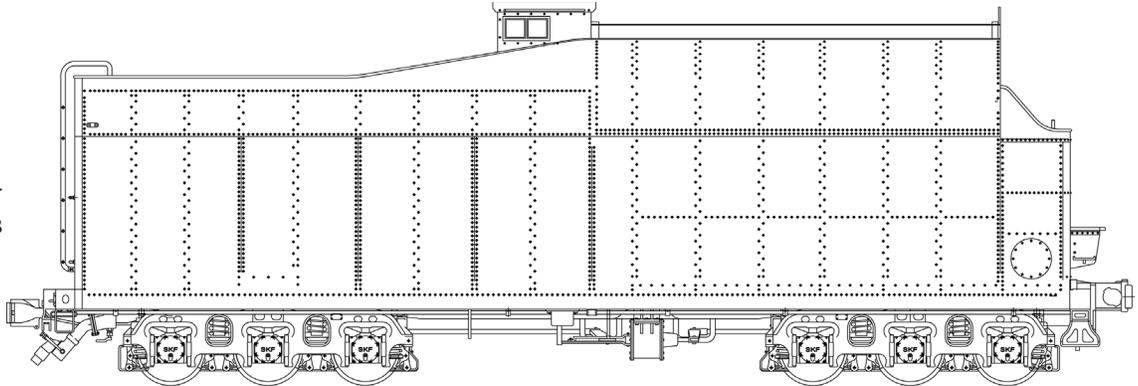
**Two special version of our class 'A' will include unique detail features shown in the photos above and below. Our version number five model will include a unique cooling coil arrangement that can be seen attached to the boiler lagging above. Our version number six model will feature the added detailing of the Westinghouse aftercooler shown mounted on the locomotive pilot below.**





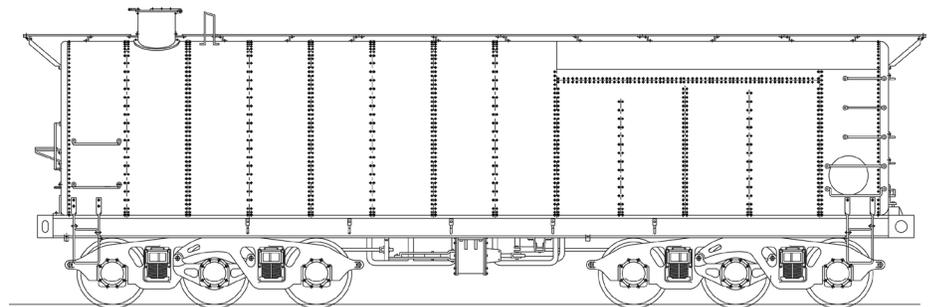
The elevation view to the left is of our 'H' class tender rebuilt for road numbers 1200-1209 (excluding 1203 & 1206).

The elevation drawing to the immediate right is of our 'C' class tender used with road numbers 1213-1234 (excluding 1223).



Our 'I'-class tender elevation design is shown at the left, these tenders were used for road numbers 1235-1242 and were built new, the only class A's with that distinction..

The 'A'-tank (auxiliary tender) illustrated at the right is a later design than was used with our Y6a's and Y6b's. This later version rode on the more modern 'Buckeye' type trucks instead of the original N&W T-40 design.



Kohs & Company, Incorporated  
 Post Office Box 689  
 Clarkston, Michigan 48347  
 Phone: 248.625.6396  
 Fax: 248.625.7994  
 Web: [www.kohs.com](http://www.kohs.com)  
 E-mail: [gwk@kohs.com](mailto:gwk@kohs.com)