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# The Sentinel



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# Message from the President

**Happy New Year!** The last quarter for the Society was quite busy with many activities from the Annual Convention in September till the end of the year. The convention was outstanding from the tours to the presentations. Over a hundred people participated over the weekend. Special thanks to Andy White for all the work and preparation he put into making everything run smoothly. Another special thanks to Andy Roberts for providing the PA system for the evening presentations and the banquet. To all the many presenters who made their fabulous research available at the evening presentations, it was greatly appreciated.

In October, I entertained a number of homeschool students about the B&O and railroading in general. It was fun sharing with these young minds my love and knowledge of America's First Railroad.

November 9th saw our first model railroad flea market and silent auction with 17 tables sold to vendors and 47 people in paid attendance. Thank you to the society members who helped. We are making plans for next year to improve the attendance.

At the end of November, the Chesapeake Division NMRA held their annual business meeting. This was the third time they used our building, and again I had the

opportunity to address their membership.

On December 7th we held our third annual holiday party for the membership and we had fun. If you are in the area next year, please make an effort to attend.

Society products have sold very well. The *B&O in Baltimore* book is down to a couple dozen left, and the B&O china paper plates are down to a handful of packages. Generating our own products means more money for us, but we need more people helping with product development, marketing, and door-to-door sales. The small group of people doing this work is getting burned out. Please contact me to provide help. Future projects in development are two new books, and the possible expansion of the paperware products based on the B&O china. Other sales products related to the B&O are being discussed and should be out in 2020, with details in coming letters. For the members who have been patiently waiting, the Bethlehem Car Works D-14 HO kit will be here in the first quarter of 2020. John Greene is still working on the roof and ends to get them correct for B&O modelers.

The retire-the-mortgage program is coming close to ending with a little over thirteen months left until we close out the

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## On the Covers

**FRONT COVER:** Baltimore and Ohio 4051 GP40, Silver Spring, Maryland, October 3, 1973. Per Jim Mischke's roster book, this unit was built October, 1971, so is just two years old in this photo. 4051 was part of the last group of GP40 purchased by the B&O. It went to CSX in 1987 and was retired in 2000. After being sold, it was rebuilt into a GP38M-2 and began a second life on the Wisconsin and Southern. (Rodney H. Peterson photograph)

**BACK COVER:** This photograph of B&O GP40 3699 at Parkersburg, West Virginia on June 18, 1974, was sent in by Jim House, who acquired it at an estate sale. According to Jim Mischke's roster, B&O owned 161 of this model, far outnumbering the total number of six-axle units the road owned. Per Mischke, this unit went to CSX in 1987 as 6515 until retired in 1991, after which it went on to a second life after being rebuilt in 1993 as SP GP40M-2 7125, later UP 5403 and UP 1503 post-merger. 3699 was the last of the 16 original GP40 acquired by the B&O in 1966.



The start of Sand Patch Grade at Q Tower on the east end of Hyndman, Pennsylvania.

# B&O Passenger Steam Power on Sand Patch Grade 1900 to 1956

Greg Smith

All photographs from the B&ORRHS Collection

**S**and Patch Grade is on the eastern leg of the Pittsburgh Division. This division starts just east of State Line Tower at Viaduct Junction in Cumberland Maryland, proceeds west through the Cumberland Narrows, and on to Hyndman Pennsylvania. There is a slight elevation that requires no assistance for westbound trains. At Q tower, on the eastern edge of Hyndman, the grade increases and helpers are required even to this day. This is Sand Patch. The Sand Patch line was started from Conneville Pennsylvania in 1854, and open for through traffic in 1873. The B&O wanted a direct line to the steel industries of Pittsburgh, but years of legal hurdles by the Pennsylvania Railroad delayed construction. The complete distance over Sand Patch Grade by rail is 19.4 miles, with an increase in elevation of 1,293.4 feet at a point about a quarter mile west of Sand Patch SA Tower. With a washboard grade,

maximum grade of 1.94 percent, and curvature of 9 degrees 30 minutes, this grade provided many operational challenges for the B&O Railroad.

At the start of the 20th Century, almost all passenger cars were constructed of steel underframes with wood superstructures. With the coming of cheap steel, all-steel cars offering better safety and endurance with reduced maintenance began to make rapid appearance on the road after 1913. To illustrate the point, in 1910 the B&O ordered class A-14 coaches of steel and wood construction. In 1913, the road ordered class A-16 coaches of all steel construction. With the new, better cars and with improved air brakes, trains began to become longer and more services were added to these rolling hotels. From the late 1800s to 1920s, most scheduled trains consisted of five or six cars. By 1920, the normal consist of the *Capitol Limited*,

which traveled over Sand Patch, had eight cars, and the peak summer and holiday season could consist of ten or twelve cars. Demand for business travel was also growing throughout the United States due to the country's expanding commerce.

At the start of the 1900s, the main passenger steam power throughout the B&O system were American 4-4-0 and Ten-Wheeler 4-6-0 locomotives. Ten-Wheelers, Classes B-8 and B-14, were the main power over Sand Patch, and in many cases two were needed to get premiere trains up over the mountain. By late 1905 and early 1906, a new class of steam locomotive started to arrive on the B&O, the Class P Pacific. The B&O fell in love with this class, and over the next fifty years built and rebuilt these locomotives to improve efficacy and meet the needs of increasing traffic. As more Pacifics arrived on the road, the smaller class locomotives were



SA Tower just west of Sand Patch Tunnel, almost at the top of the grade.



A-14 coach built by AC&F in Wilmington Delaware in 1910. All were retired from revenue service by the 1930s.



A-16 coach built by AC&F in Wilmington Delaware in 1913.

**Train No. 7—Washington to Pittsburgh.**

- 1 Postal car.....Washington to Pittsburgh.
- 1 Baggage car (express).. Baltimore to Chicago (daily except Sunday) (to Washington on train No. 163).
- 1 Baggage car.....New York to Chicago.
- 2 Coaches.....New York to Chicago.
- 1 Drawing-room sleeper.. New York to Chicago.
- 1 Drawing-room sleeper.. Washington to Cleveland.
- 1 Compartment drawing-room sleeper ..... Washington to Chicago.
- 1 Observation sleeper... Washington to Chicago.

Will be held not to exceed fifteen minutes at Washington Junction for connection from train No. 47, when passengers are reported for Cumberland and west; when the connection is not made, passengers will be handled on train No. 17.

Extra coaches for excess travel are placed between sleepers and coaches. Extra coaches or sleepers for theatrical or troop movements are placed between baggage car and coaches.

1921 passenger train consist over Sand Patch.

**Train 5—Washington to Chicago. STREAMLINED AIR-CONDITIONED EQUIPMENT. (Effective November 23, 1938.)**

- 1 Club car (Dormitory).....Baltimore to Chicago.
- 1 8-Section Drawing-room 2-Compartment sleeper.. Baltimore to Chicago.
- 1 8-Section 4-Bedroom sleeper..... Baltimore to Chicago.
- 1 Dining car (Colonial)..... Baltimore to Chicago.
- 1 Drawing-room sleeper..... Washington to Chicago.
- 1 8-Section 5-Bedroom sleeper..... Washington to Chicago.
- 1 8-Section 5-Bedroom sleeper..... Washington to Chicago.
- 1 14-Section sleeper..... Washington to Chicago.
- 1 Lounge-Observation (1 Drawing-room 3-Compartment)..... Washington to Chicago.

If, at four p. m., there are one hundred and twenty-five or more passengers, second dining car will be provided for evening meal. When second diner is required it will be placed in train as fourth car from rear, and it will be cut off at Cumberland and returned to Washington on Train 14, unless otherwise advised.

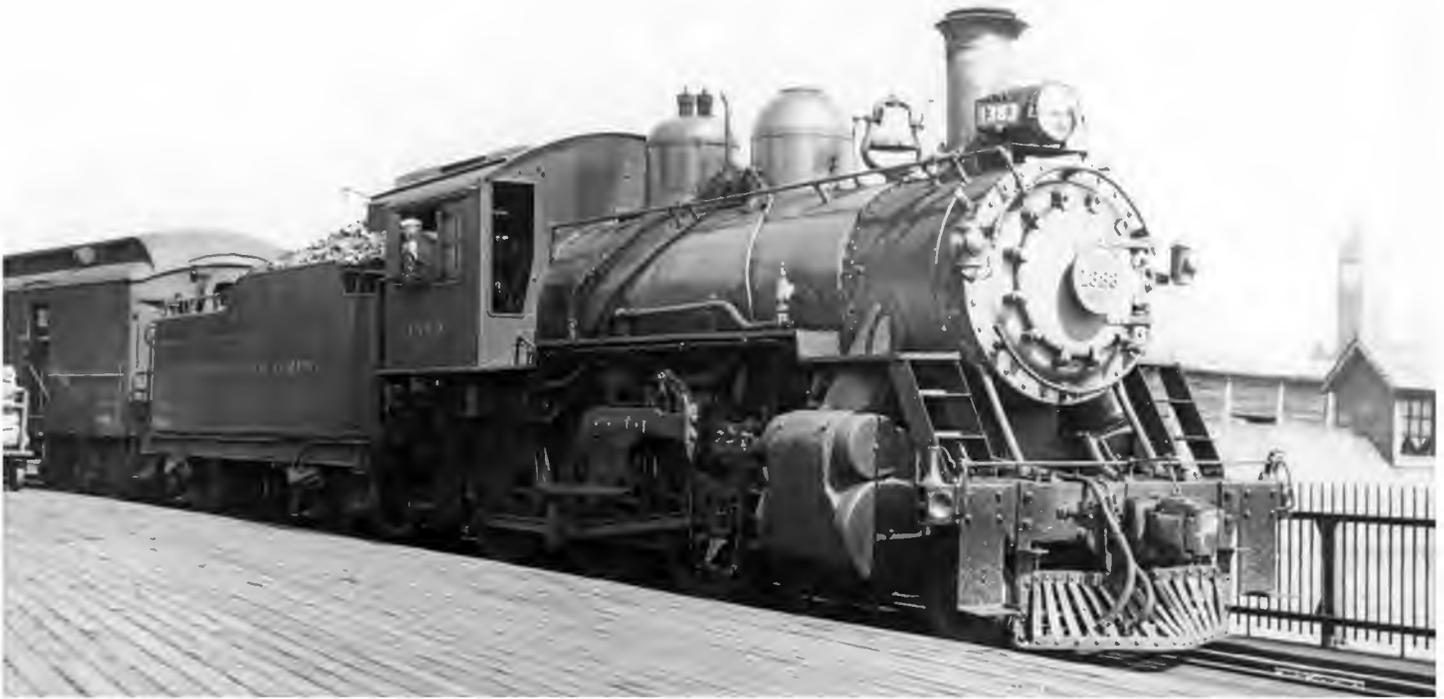
Should it become necessary to out the club car out for mechanical or other defects, the conductor will see that the attendant in charge of the car returns the passengers' clothes, etc., which may be in his possession for pressing, etc., to the cars the passengers are occupying before the car is cut out. The dining car steward should be advised so he can arrange for his crew to remain with dining car.

1938 passenger train consist over Sand Patch.

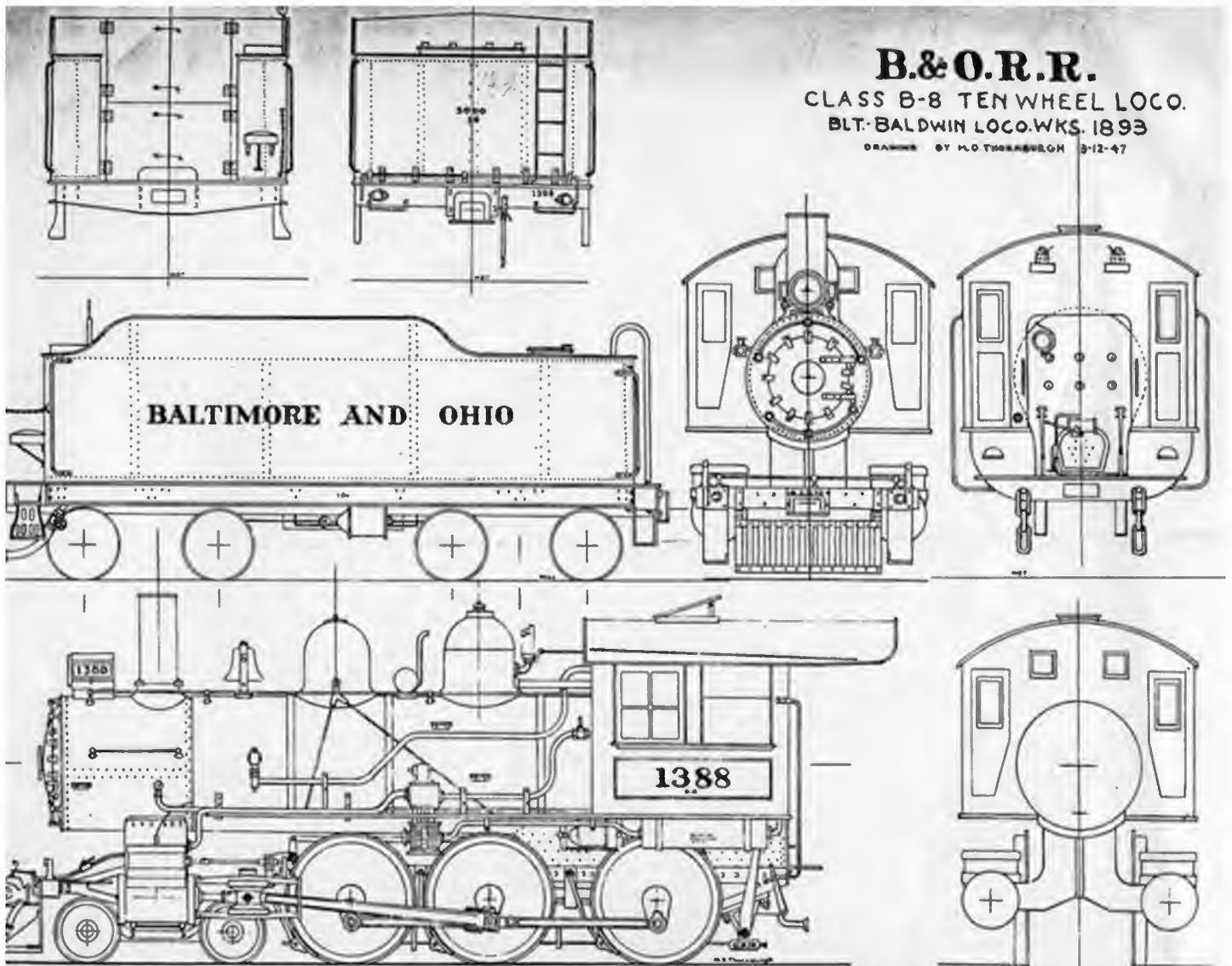
reassigned to level routes or retired. Most of the Ten-Wheelers were assigned to lines west of the Ohio River, with a small handful used out of Baltimore for commuter service. Not all classes of Pacifics were used on the mountains. Classes P-2, P-3, P-4, P-5, P-6, and P-7 were assigned to other regions of the system. From 1919

to 1927, P-5 class locomotives operated from Washington DC to Cumberland Maryland. After 1927, the P-7 President class locomotives replaced the P-5 in this function. At Cumberland, the P-5 and later P-7 locomotives were replaced by heavier traction locomotives over the mountain grade.

By the 1920s, the Pacific was the mainstay passenger locomotive of the B&O system. As superheaters, stokers or coal pushers, power reverses, and electric lights were added, the performance of this class increased. On level rail this class generally could handle eight cars with no problem. In the case of Sand Patch Grade, more power was needed, and the P-1c and P-1d class Pacifics were used on the mountains of Pennsylvania and West Virginia. The P-1d was the most powerful Pacific on the system, but the mountain grades and long trains were too much of a challenge even for them. Thus, the B&O took two old Class S 2-10-2 to develop the B&O's first two 4-8-2 Mountains, class T and Ta. With the success of these two home-built Mountains, the railroad ordered two more Mountains from Baldwin Locomotive Works, class T-1 and T-2, and they were delivered in 1930. The class T-1 was *Colonel Emerson Foley* with a watertube firebox. Emerson experimented with this design on various B&O locomotive classes with no success. The Pennsylvania and the Delaware and Hudson tried the watertube design and also had no success, but that is a story for a different time. The T-2 had the same dimensions as the T-1, but with a conventional, radial-stay firebox so the B&O could compare the two designs. These four Mountains were usually the main power for the *Capitol Limited* and other premiere name trains over Sand Patch grade. By the late 1930s, a new form of power was being bought by B&O management, diesel power, but the start of World War II saved steam power for



B-8 class Ten-Wheeler.



Mel Thornburgh drawing of a B-8, 1947.