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TOP: The left hand side of the loco. BOTTOM: The right hand side of the loco. Photos: John Jesson

Review of the Piko HO scale SBB Ae 4/7 John Jesson

The Prototype

Introduced from 1927, the Ae 4/7 was a mainstay of the Swiss Federal Railways for many years. 127 were built over a 7-year period and lasted until around the turn of the century. The main visual difference between class members as built was to locos 10973 – 11002. These locos were built with additional and modified equipment for working more heavily-graded routes such as the Simplon and Gotthard/Monte Ceneri and were heavier, exceeding the laid-down figure for weight per metre by a small margin. The rather novel solution was to mount the buffers on timber baulks 170mm thick on the buffer beams, thus increasing the length of the loco by 340mm and dropping the weight/metre within the permitted figure. When built, the locos had a cab door on the RH side of each cab. From about the mid-50's the cab door was fixed closed and the associated handrails and steps removed, access being by means of the angled door on the LH side of the cab. Other visible alterations were to the roof-mounted equipment, of which there are several variations, and replacement of the headlights.

The Model

The model captures the look of the prototype very well and depicts 10990, built by SLM/MFO in 1931 with the extended buffer beams. The shade of green looks about right to me and the grey is the original, darker shade. All of the inscriptions are printed gold on black and are legible under a powerful magnifying glass. Not depicted is any depot allocation, although a silver stripe has been applied in the correct positions each side, on the edge of the footplating. To the best of my knowledge, this should be gold. The windows on the corridor side have simulated internal protection bars, but these have been left unpainted, so are not obvious. The vertical white stripes on the cab side windows are very clear. The cab doors are depicted as

out of use, with no handrails or steps. The front top headlights are the double type, with separate red light above the white.

Below the footplate, the Buchli drive and framework, and the cooling pipes on the opposite side, are all finely moulded, as are all the other parts, such as equipment boxes, air and brake cylinders, speedo drive and, on the 4-wheel bogie, Indusi magnets. Buffers are plastic and unsprung, with rectangular heads. On the roof, the model is fitted with two pantographs of the older type, with crossed diagonal bars on the upper sections. The simulated roof wiring is plastic and finished red, mounted on black insulators. Roof walkways are brown, everything else is silver. The roof "furniture" is two squarish boxes with side ventilation and was the style of the MFO-equipped locos 10973 - 11002. Later on, from the 1960's, the equipment was modified with different casings.


Inside, the model follows the usual format of a main chassis block of cast metal, surrounding a centrally-mounted motor with two flywheels. This drives the outer two driving axles through gearboxes. Mounted on top of the motor and chassis block is a printed-circuit board. The DCC connection is mounted on this and is a PluX22 interface. The version I have is the DC version, but a digital sound version is available. The body attaches with two screws just behind each buffer beam. When the screws are undone, the body just lifts off – no clips to disengage.

NEM coupler boxes are fitted at both ends to the 4-wheel and 2-wheel trucks. That, on the 2-wheel truck droops somewhat, enough to guarantee inadvertent uncoupling of my Kadee couplings. This is not an easy problem to overcome; my solution has been to mount a Kadee #20 to the body, using the chassis fixing facility. The driving wheels have the correct 16 spokes, and the pony wheels 9 spokes, also correct. Traction tyres are fitted to one of each of the outside sets of driving wheels. Back-to-back measurements are variable, but all within limits for normal NEM standards. Pick-up is from both centre

pairs of driving wheels (both sides), all bogie wheels and one side of the pony truck. Both centre pairs of driving wheels are sprung to ensure contact with the track, as is the pony truck.

I fitted a DCC chip and tested the loco on my layout. Maximum speed was too high, somewhere in the region of a scale 150 kph, but the loco is a smooth runner. Piko have installed electronics to independently control the single tail light. The headlights are controlled by the usual CV0, but the taillight is turned on and off through CV's 2 and 3, depending on whether the loco is travelling forward or reverse.

The hauling capacity was disappointing – three bogie

coaches was about the most it could handle. I was unable to find a solid reason for this, but suspected that having the traction tyres in diametrically opposite positions might be a factor. To test this, I swapped the traction tyre fitted wheels to the same axle (I put them both on the 4th axle, but they could go on the 1st axle). The difference has been remarkable. The loco will now haul an 8-coach express up the gradients, but this seems to be the limit. Swapping the wheels was an easy job, but extreme care is needed when putting all the driving wheel sets back, as it is very easy to trap and bend the current pick-ups. 


(All dimensions in mm)	1:1	1.87	Model
Length over buffers	17100	196.6	196.0
Width over body	2950	33.9	33.9
Height of roof	3800	43.7	45.0
Driving wheels	1610	18.5	18.5
Pony wheels	950	10.9	10.8
Wheelbase (bogie)	2200	25.3	25.0
Wheelbase (bogie to 1st driving axle)	2155	24.8	24.9
Wheelbase (1st driving axle to 2nd driving axle)	1950	22.4	22.4
Wheelbase (2nd driving axle to 3rd driving axle)	1950	22.4	22.4
Wheelbase (3rd driving axle to 4th driving axle)	1960	22.5	22.5
Wheelbase (4th driving axle to trailing axle)	2460	28.3	28.2
Weight	123 tons		421 g
Back-to-Backs			14.26 – 14.43
Maximum speed	100 kph		

Cardboard Modelling

Most of us know that modelling Swiss Railways in any scale is expensive. However, Brian Shaw came across an old, but much cheaper, option at a recent tram exhibition in Manchester. It was a 1965 publication that enabled the modeller to carefully colour-in the card pages, cut them out with scissors and make a model of a triebwagen and pendelzug, plus a road vehicle, a few people and some platform furniture. Back then it would have kept children

amused for hours – adults also!

However, today's youngsters (and some adults) aren't quite so patient so a modern version was produced by the BLS, one of a Class 465 and 3 coaches and another for a Nina RABe 525 set. To speed up the construction, these came pre-coloured and cut so that each piece just had to be pressed out.

Now, who's up for motorising one of these for an exhibition layout ??? 

Brian Shaw and Tony Bagwell



Photos of old book – Brian Shaw.

Photos of new card kit – Tony Bagwell.

