

# Santa Fe's 4-8-4s & HO Models

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# Santa Fe 4-8-4 Classes and Topics

- 3751 Class – 14 Locos – Built in 1927-29
- Major Rebuilds of 3751 Locos in 1938-39 and 1941
- 3765 Class – 11 Locos – Built in 1938
- 3776 Class – 10 Locos – Built in 1941
- 2900 Class – 30 Locos – Built in 1943-44

# 3751 Class – as Built

- 3751-3764 – 14 Locos – Delivered in 1927-29
- 73” Spoked drivers, slab rods
- 15K Coal tenders
- Elesco feedwater heater on pilot
- 3751 only: steam pipe to cab was hidden
- 3764 only: had Caprotti valve gear until 1934

# 3751 Class – Converted to Oil

- 1936: 4 locos (3751, 3762-64) get oil insert in same 15K tender
- 1937-38: All 14 locos get 20K “square” oil tenders
- Can now run all the way to California

# 3751 Class – 10 Elesco Rebuilds

- 1938-39: All except 3751, 3760, 3763-64 get a major rebuild
- 80” Boxpok drivers, longer frame
- New I-beam rods
- Elesco feedwater heater up in front of stack
- 37” pilot truck wheels instead of 33”
- 1940-42: All 14 locos get “SANTA FE” on tenders

# 3751 Class – 4 Worthington Rebuilds

- 1941: Major rebuild of remaining 4 original locos (3751, 3760, 3763-64)
- 80” Boxpok drivers, longer frame
- Similar to 1<sup>st</sup> 10 rebuilds (I-beam rods, etc.) except:
  - Worthington feedwater heater (square) in front of stack
  - Just one large sand box
  - Wagner bypass drifting valves added

# 3751 Class – Rebuild 7 Elesco to Worthington

- 1945-48: 7 of 10 Elesco locos are converted to Worthington (3752, 54, 55, 58, 59, 61, 62)
- Get one large sand box
- Also get Wagner bypass drifting valves
- But 3752 gets Franklin rotary cam poppet valves in 1948, more efficient
- 3753, 3756-57 keep their Elescos and other features to the end

# 3751 Class – More Changes

- By 1938: All got flip-up stack extensions
- In 1941, 1945-48: Most got telescoping stack extensions when rebuilt
  - But 3751, 3759-60 got curved segmented stack extensions for Tehachapi
  - 3753, 3756-57 kept their flip-up stack extensions
- Late 1940s: Many inherited some tapered rods from 3776 & 2900 classes
- Retired in mid-1950s, saved 3751 and 3759



# 3751 Class – HO Models – Key Brass

- Original form, 73” spoked drivers, but with later 20K square oil tender
  - Good for 3760, 63, 64 from 1937-38 until rebuilt in 1941
  - Good for 3752-59, 61, 62 locos from 1937-38 until rebuilt in 1938-39
  - Not good for 3751, as model has steam pipe above boiler
  - Models imported in 1976
- First rebuild with high Elesco FWH, 80” Boxpok drivers, I-beam rods
  - Good for 3753, 56, 57 from 1938-39 until 1941-45, when drifting valves were added to these 3 locos (model has no drifting valves)
  - Good for 3753, 56, 57 after 1945 if you add drifting valves to model
  - Good for 3752, 54, 55, 58, 59, 61, 62 until 1945-48 major rebuild
  - Not good for 3751, as model has steam pipe above boiler
  - Models imported in 1978, some factory painted in 1981 for 3751 (incorrect) and 3757 (correct)
- No Key models of 1941, 1945-48 Worthington FWH rebuilds

# 3751 Class – HO Models – Hallmark Brass

- 1941 rebuild with Worthington FWH, 80” Boxpok drivers, large sand box, drifting valves (as applied to 3751, 60, 63, 64 in 1941, also applied to 3752, 54, 55, 58, 59, 60, 61 in 1945-48)
  - But models have 2 steam pipes on top, should only have one (3751 had none)
  - Models were factory painted for 3751, 58, 60, 63
  - Models were expensive “super crowns,” made in 1994
- 1948 version of 3752 with Franklin rotary cam poppet valve gear
  - But model has 2 steam pipes on top, should only have one
  - “Super crown,” painted 3752, made in 1994

# 3751 Class – HO Models – BLI Styrene

- 1941 rebuild with Worthington FWH, 80” Boxpok drivers, large sand box, drifting valves (as applied to 3751, 60, 63, 64 in 1941, also applied to 3752, 54, 55, 58, 59, 60, 61 in 1945-48)
  - 1<sup>st</sup> run 2004 – painted dark gray for 3751, 55, 62, wrong parts on pilot deck
  - 2<sup>nd</sup> run 2005 – painted black for 3751, 53, 56, 57, fixed pilot deck, but 3753, 56, 57 are incorrect numbers (never rebuilt this way)
  - Current run 2013 – painted black for 3751, 54, 55, 60, 62, 63, 64
  - All models have correct steam pipe (one, and none visible on 3751)
  - See 2005 handout on details of these models

# 3765 Class – as Built

- 3765-75 – 11 locos – delivered in 1938
- 80” Disc drivers (with ribs), I-beam rods
- 20K “square” oil tenders
- Worthington feedwater heater (square) in front of stack
- Single sand box, paired steam pipes to cab
- Unshielded water pump on right pilot deck
- 3765 was supposed to be streamlined, but it would have been too heavy (kept a few minor features)

# 3765 Class - Upgrades

- 1940-42: Added “SANTA FE” lettering to tenders
- 1944-45: Telescoping stack extensions, move check valves higher up on boiler, move whistle forward
- 1950-52: Most got new boilers with no steam dome but with external steam pipes (all except 3765, 3769-70)
- 1950s: Some got tapered rods and/or unmatched wheel types
- Retired in late 1950s, saved 3768

# 3765 Class- HO Models – Key Brass

- Imported in 1978
- Modeled after 3768 as preserved, with new boiler and no steam dome
- Good for most of class (but not 3765, 69, 70) after boiler replacements in Oct. 1950 - Jan. 1952 (see Worley)

# 3765 Class- HO Models – Hallmark Brass

- Imported as Super Crowns in 1995
- Painted for 3765, 3770 as built, with steam dome
  - These never got new boilers, so good for entire life
  - Model of 3765 has rounded cab windows, stainless steel handrails, and solid pilot, as it should (it was intended to be streamlined)
- Painted for 3766, 68, 72, 74 with no steam dome (good after new boilers added in 1951)

# 3776 Class – as Built

- 3776-3785 – 10 Locos – Delivered in 1941
- 80” Baldwin Disc drivers with lips around holes and no ribs
- Tapered rods on most, but 3784-85 had thin roller-bearing rods
- Roughly similar to 3765 Class, except for:
  - 24.5K long oil tenders
  - Whistle behind sand dome
  - Two blow-downs on each side of firebox (instead of one)



# 3776 Class - Upgrades

- Pre-1945: Add telescoping stack extensions
- 1946-48: Replaced tapered rods with roller-bearing rods on the other 8 locos (3784-85 already had them)
- 1949-52: Most got new boilers with no steam dome but with external steam pipes (all except 3777, 3781, 3783, 3785)
- Retired in late 1950s, none saved

# 3776 Class - HO Models – PFM Brass

- Many releases from 1963 through 1982, upgrades in details, some with stack up
- As delivered in 1941 with tapered rods (except 3784, 85)
- 3784, 85 as delivered in 1941 with roller-bearing rods, and rest of class as upgraded in 1947-48 with roller-bearing rods
- No models with new boiler and no steam dome (applied to most of class except 3777, 81, 83, 85 in 1950-52) (see Worley)

# 3776 Class – HO Models – Hallmark Brass

- Imported in 1994 as Super Crowns
- Painted for 3776 with no steam dome (after 1-1950)
- Painted for 3779 with no steam dome (after 4-1951)
- Painted for 3778, roller-bearing rods, no steam dome (after 3-1950)
- Painted for 3780, roller-bearing rods, no steam dome (after 11-1952)
- Painted for 3782, roller-bearing rods, no steam dome (after 11-1949)
- Painted for 3783 with steam dome
- Painted for 3784, roller-bearing rods, no steam dome (after 3-1952)
- Painted for 3785, roller-bearing rods, with steam dome

# 3776 Class – HO Models – Bachmann Styrene

- Many releases over the years, didn't run well, improvements made
- Some models had tapered rods, others had roller-bearing rods, all had steam dome
- Factory painted for various numbers

# 2900 Class – as Built

- 2900-2929 – 30 Locos – Delivered in 1943-44
- 80” Boxpok drivers, tapered rods
- Heaviest 4-8-4s for any railroad (heavier wartime steel)
- 24.5K long oil tenders
- Almost identical to 3776 Class, except for:
- Single blow-down on each side of firebox, domed-end air tanks, whistle behind stack, lighter crosshead without counterbalance

# 2900 Class - Upgrades

- 1946-48: Replaced tapered rods with roller-bearing rods on all locos, changed rear driver to 1941 Baldwin Disc type (raised lip around holes), added extension stacks
- By 1950: Add twin sealed-beam headlights to 3 locos (2905, 2919-20)
- Never got new boilers
- Retired in late 1950s, saved 2903, 2912, 2913, 2921, 2925, 2926

# 2900 Class – HO Models – Westside Brass

- Imported in 1978 as part of Fleetwood “Big Three” set of three models in wood box (3460 class, 2900 class, 5001 class)
- As built with tapered rods (good until 1947-48 change to roller-bearing rods)
- Note: River Point Station planned to make brass 3765, 3776, and 2900 models, but project is still on hold

# 2900 Class – HO Models – Hallmark Brass

- Imported in 1994 as Super Crowns, with stack up
- Painted 2900 as built with tapered rods (good until 1947-48)
- Painted 2903 with roller bearing rods (after 1947-48)
- Painted 2909 with roller bearing rods (after 1947-48)
- Painted 2918 with roller bearing rods (after 1947-48)
- Painted 2921 with roller bearing rods (after 1947-48)
- Painted 2929 as built with tapered rods (good until 1947-48)



# Restoration of 3751 to Operation

- Moved from display in San Bernardino in 1986
- Restored to operating condition during 1986-1991 at California Steel Industries in Fontana, CA
- Work done by the San Bernardino Railroad Historical Society
- Operated for the first time in 1991, has pulled fan trips ever since
- Note: 2926 is now being slowly restored in Albuquerque

# Major Sources

- **Books:**

- Iron Horses of the Santa Fe Trail, by E.D. Worley, 1965
- The Illustrated Guide to Santa Fe HO Brass Steam Locomotives, Second Edition, by Stephen L. Redding, 2003
- Santa Fe Locomotive Development, by Larry E. Brasher, 2006
- Santa Fe Northern 4-8-4 Pictorial, by Duane Karam Jr. & Jeff Ainsworth, 2000
- Evolution of the Santa Fe 4-8-4, by Jeff Ainsworth, 2015

- **Articles:**

- Santa Fe's 3765 Class Northerns, by Lee Berglund, Railroad Modeler, Oct. 1974
- 2900 Class Northerns – Santa Fe's War Babies, by Loren Martens & Michael A. Martin, Santa Fe Route, Vol I, No II and Vol II, No I
- Thirty Years of 4-8-4s (Santa Fe), by Lloyd E. Stagner, Trains, Feb. 1987
- A History of the 3751 Class – Santa Fe's Big Mountains, by Loren Martens, Santa Fe Route, Vol VI, No IV and Vol VII, No I

- **Correspondence with Stan Kistler in 2005 to check all facts**