

I do plan on having an opening paragraph that states something like "this is a moving target. things change, and pictures only tell part of the story. Please understand that unlike a lot of things we study, horns unbolt and get replaced. This is a guide, for use as a guide". Good?

Early Era Applications (up to about 1960)

EARLY PASSENGER APPLICATIONS

Doodlebugs

- From photos, all had dual Wabco horns as original equipment. Type AA (straight bell) or AAC (curved bell) were replaced by dual Leslies. From photo evidence, the Leslie A125H & M dual horn was the standard Santa Fe replacement horn for the doodlebugs, sometime in the mid 1930's. It sounded G#, B below mid. C. However, by the 1960's some of the old worn dual Leslies were replaced outright. The M160's horn was replaced with a Wabco model E-2 single tone, and Leslie model A 126-247 operating in tandem, sounding F, B below mid. C. The M190's horn was replaced with a Leslie Supertyfon model S-25 single tone horn, sounding mid. C.

Amos & Andy – the One Spot Twins

- Equipped with Wabco AA2 dual tone as delivered: Sounds D, G below mid. C.
- Replacement horns were Leslie A-200-156 and A-125-247. D#, B below mid C.

E1 – 3 – 6 classes (2 thru 15)

- Equipped with Leslie A200/A125 as delivered - Both horns, the Leslie A200-156 and A125-247, faced forward. They were normally sounded together D#, B below middle C.
- Replacement horns for the E3 and E6 classes were Leslie Supertyfon model S-3L-R (low C, D#, A) or S-5T-R (low C, D#, F#, A, C#)

Passenger F3/F7 (16 and 37 class)

- Equipped with twin Leslie A200-156 as delivered: Left facing forward, right to the rear, and operated in tandem creating a vibrato D# below mid C. sound.
- In the early 50's, some of the passenger Fs were retrofitted with five chime horns; Nathan Airchime M5R24 (C#, E, G, A, C#), or Leslie S5TR (low C, D#, F#, A, C#)

The Santa Fe sampled both the Nathan Airchime M5R24, and Leslie S5TR in passenger service during the early 1950's. Although we have no official Santa Fe motive power directives, photo evidence will show that the Leslie horn won out on cowl body passenger unit retrofits by the mid sixties. In fact, all the PA's were retrofitted with the S5TR by 1962. There were few M5 applications when compared to the Leslies. A notable exception was FM #90.

The Santa Fe used a different arrangement from the Leslie recommended pattern on the majority of it's Leslie fives. For documentation, I have a 1962 EMD air horn parts list for the Santa Fe calling for the third and fourth from the largest bell to be reversed. This is evident on all the PA's, and the majority of EMD passenger motors. The Leslie standard configuration called for the second largest bell and smallest to be reversed, which by the way, the majority of the railroads used.

Note: Two known Santa Fe S5T's are preserved. One is on the F7 347C at the Calif Rail Museum and one is in a private collection. One of those two came from the F3 16C. Evidently, these two five chimes are among the few rare examples saved from the hundreds of Santa Fe applications that eventually went to scrap.

ALCo Passenger - #50 & PA's

- #50 was equipped as delivered with Wabco E-2 (large horn) & A-6 (small horn).
- PA's equipped with twin Wabco model E-2's or Leslie A-200-156's as delivered. Right side facing forward and the left to the rear. The E-2's sounded F below mid C in vibrato. Photo evidence also reveals some units with twin Leslie Tyfon A-200-156. On occasion, one of the twin horns would fail and was replaced with the other type, creating a discernable discord. D#, F below mid C.
- All the PA's were retrofitted with the Leslie S5TR by 1962.

FM #90

- The #90 was delivered with twin Leslie A-200-156, Rt side facing forward and the left to the rear. They sounded D# below mid C in vibrato.
- Photos suggest retrofitted with a Nathan Airchime M5R24 by 1959

Budd RDC 191/192

- Appeared to have been delivered with Leslie Tyfon model A-125-2A Chime Tone. Notes were C#, F above mid C. Later replaced with single note Leslie model S-25.

EARLY FREIGHT APPLICATIONS

FT (100 class)

- Equipped with twin Leslie A200-156 as delivered. Left facing forward and right to the rear and operated together creating a vibrato D# below mid C.

Freight F3/F7 (200 classes)

- Equipped with twin Leslie A200-156 as delivered. Right facing forward with the left facing to the rear, operated together to create a vibrato D# below mid C sound effect.

F9 (281class)

- As delivered: Split version of the Leslie Supertyfon model S-3L-R. Two bells on a two horn manifold (S-2M) on the right side and one single bell horn(S-25) facing rearward on the fireman's side. D#, A above mid C with the A bell often overblowing to F#.

GP7 (2650 class)

- Early deliveries- Leslie A125-247 – short hood (forward) – and Leslie A200-156 - long hood (rearward).
- Mid deliveries- Nathan Airchime MS-1; From photos, the MS-1 replaced many A-125-247 atop the short hood facing forward.
- Late deliveries- Leslie Supertyfon S-3L – split, see below.

GP9 (700 class)

- Leslie Supertyfon S-3L – split, see below – All deliveries.

It appears from photographic evidence the first units in the 2650 class were delivered with split Leslie A125, A200's (one front, one rear). However; the horn type varied over the three year delivery period from 1950-1953. Many had the classic Nathan Airchime MS-1, while others, towards the production run end, were equipped with the split version of the Leslie Supertyfon S-3L. Split, meaning the largest bell on a single horn bracket facing rearward on the long hood, and the other two bells mounted on a two-horn bracket facing forward on the short hood. All of the 700 class GP-9's were delivered in this way as it was an EMD standard application. What you heard at trackside was a dual horn, or Leslie Supertyfon model S2M. The single tone horn was used for reverse moves.

Freight ALCo's

- From photos, it appears most four and six axle classes were delivered with Wabco model E-2 horns or Leslie A-200-156 horns. Many were delivered with, or retrofitted with a Nathan Airchime MS-1 horn on the short end hood.
- All 800 class RSD-15 alligators were delivered with the Leslie Supertyfon S-3L-R.

ALCo and Baldwin Switchers

- Most were factory equipped with the Wabco A2 (long bell) sounding D above mid. C.
- There might have been a few Wabco A6 applications on the ALCo switchers.

EMD Switchers

- Delivered with the Leslie Tyfon model A-125-247, sounding B below mid C.

FM Switchers

- Wabco A2, Nathan Airchime MS-1, or Leslie A-200-156.
Check photos for positive id. MS-1 sounds C# above mid C.

Baldwin 2600's

- One Wabco model E-2 horn

Later Era Applications (+/- 1960 and later)

The **EMD** Standard Horn for the Santa Fe from 1959 to the late 1970's was the S-3L-R and variations thereof. Beginning in the very late 1970's the Airchime model K3LA became the standard EMD application and standard Santa Fe replacement horn.

FP45s

- Most, if not all were equipped with the Leslie S-5T-R or S-3L-R as delivered. Some were converted to the Airchime K3LA later in their service life.

F45s

- As delivered: Leslie "L" chord structure on a U or universal base. Leslie SU-3L-LR. Horn differed from all factory designated models with the smallest bell located and reversed in the center position, which was a normal Santa Fe configuration.

SD24/GP20/GP30/GP35/GP38/SD39/SD40/SD45/early GP39-2/SD40-2/SD45-2

- All were S-3L-R and variations.

Late GP39-2/GP40X/GP50/GP60/GP60M&B/SD75M

- All were Airchime K3LA and variations. D#, F#, B above mid C.

The standard **GE** horn of the era was the Leslie model S-3K-R, however, the Santa Fe specified the model S-3L-R for all GEs from the 1600 class U25B to the 600 class Dash8-44CWs, with the exception of a very few of the passenger GEs of '66-'67.

The big GE passenger motors of the sixties were also delivered with the Leslie Supertyfon S-3L-R, (although photo evidence reveals a few surprises.) For example U30CG #400 was delivered with a Leslie Supertyfon S5TR while another had a Nathan Airchime M5R24.

By the mid-eighties, many GE Santa Fe rebuilds were retrofitted with the K3LAR2

In any event, new GEs continued to be delivered with the Leslie Supertyfon RS-3L-R through the mid-nineties, ending with the 600 class in 1994.

The K5LA and three chime variant, the K3LA were co-designed and developed by Deane Ellsworth in 1977. There are no known K5LA Santa Fe applications. (The K5LA is common on Amtrak.)

The K3LA, according to Deane Ellsworth, was introduced to the Santa Fe in 1978. While I have never seen any Santa Fe documentation, one can assume the K3LA soon became a system wide standard horn, and a new standard application for EMD. A good example would be the Cleburne rebuilds (CF7s) whereby nearly all were later retrofitted with the K3LA in the eighties, regardless of the prior horn's condition.

Deciphering the K3LA and its model variations, which included the K3LAR2, K3LAR4, K3HA, K3HAR2:

- The L designation means low base manifold, while the H means high base manifold.
- R designated bell(s) reversed.
- A means American tuned.

There may have been exceptions, of course. The GP39-2's, the SD40-2's, and SD45-2's appeared during the transition years from the Leslie standard to the Airchime standard.

ATSF seldom used the Nathan Airchime P3, P5, or the M3.

I encountered a Santa Fe SD40 back in the mid-eighties with a P3. It looked and sounded awkward on a Santa Fe motor. Very few applications - rare on Santa Fe.

There was also some very limited use of the Prime model 990 and 920 three chime.

Sources:

Remembering the Santa Fe by Olmsted
Iron Horses of the Santa Fe Trail by Worley
Santa Fe All the Way Vol.2 by Marvel
Santa Fe in Color by Stagner
Early Diesel Daze by Dr. John B. McCall
and of course The Warbonnet.

Five Chime Consultants Web Site: <http://atsf.railfan.net/airhorns/>
Trainhorns.net Web Site: <http://trainhorns.net/>

Technical sources include Leslie, Nathan Airchime, Westinghouse Air Brake (Wabco), GE, and EMD.

Other reading:

Trains Magazine – July 1999 – “The 'Leslie 5': Requiem for a fallen friend” -- By Bruce Feld

Credits:

Compilation: Ron Chamberlain
Documentation: Paul Brown