

Charlotte's "Old Sue" Steams, Pumps, Thrills

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You'd have been hard-pressed to find a more exciting event in downtown Raleigh today than the live pumping demonstration by the Charlotte Fire Department's 1902 American LaFrance Metropolitan steamer "Old Sue." After bunking overnight at Fire Station 1, the horse-drawn pumping engine appeared in the South Atlantic Fire Rescue Expo's apparatus parade. It was drawn by a pair of horses and received generous applause passing the convention center. (Old Sue was the last of the antiques in the parade, and preceded one of the state's few tillers, Raleigh Ladder 4.)



The live demonstration was conducted at the corner of McDowell and Cabarrus streets. The Charlotte crew started setting things up about 10:30 a.m. The water supply was a hydrant on McDowell Street, flowing into a drop-tank. Two sections of hard suction hose then supplied the steamer. The boiler was fired using paper to kindle small pieces of wood, which started the charcoal burning. They had two bags of the black stuff, making this a two-bagger demonstration. Ashes from the combustion dropped into a diamond-plated pan underneath. The Engineer periodically sprayed the pan with small second line, to keep the ashes from getting too hot.



After heating the boiler for about 30 minutes, the Engineer and his crew were ready to flow water. The pump was engaged, the pistons started

moving, and a solid stream of water shot east along Cabarrus Street. Then Mother Nature responded with her own deluge, and a heavy shower dispersed onlookers for a period of time. Below is view from the nearby parking deck, after one of the periods of rain. Thanks a ton to the Charlotte Fire Department for sharing a great piece of their history. Also enjoyed meeting and talking to Charlotte Fire Chief Jon Hannan, who was present and provided great information about Old Sue. [See photos by Mike Legeros](#). Watch for more photos here, along with hoped-for video footage. We'll update this post as more media is made available.



More Information

- [History of steam fire engines in in North Carolina](#)
- [Database of North Carolina steam fire engines](#)
- [Charlotte Fire Department web site](#)

Photos and media

- [Mike Legeros photos from parade, demonstration](#)
- [Lee Wilson photos from parade, demonstration](#)
- [John Franks photos from parade](#)
- [FireNews photos and video clip](#)
- [Old Sue action video from 2010](#)

Readers who were there, and talked to the Charlotte crew, are welcome to add other information. Ditto any of the crew themselves! There was much trivia and interesting information shared all around. Both technical and general. Please share any video as well.

Legeros - 08/13/11 - 22:43

If it takes 30 minutes to warm up what did they do when they got fires?

Curious - 08/13/11 - 23:52

Mike did you or do you know anyone that captured any video of it when it came by the convention center in the parade?

Mike - 08/14/11 - 07:29


@ Curious... if I remember my history correctly, the engineer back in the horse drawn days would keep a small fire going as a starter, in a small cylinder(almost similar to the Weber Grill starter cans for a kettle grill). Then when an alarm came in, as they were hooking the horses up, he would go ahead and start the fire in the steamers oven to start heating it as they went on the call. That way they would be generating steam when they arrived. If you look at some older pictures, you can see the steamer being pulled down the road, with smoke puffing from the steamer.

At least I think that is how my Grandfather said they used to do it when he was a driver back in NJ. Be interested to hear or see if anyone from CFD has pictures of that.

A.S. Meier - 08/14/11 - 08:22

Looking through some reference materials, it appears that the steam engines of that time required but a few minutes to generate a working pressure from cold water. In addition, heaters were available to keep heated water circulating through the boiler, to further shorten the time required to reaching working pressure. I do not know if the Charlotte Fire Department had such equipment. I will offer some contextual comparison about Raleigh's steamer in another comment, in a few.

I can speculate on the 30 minutes time cited yesterday. They might have started the firing process early, to give themselves a buffer until the scheduled time for pumping. They might have been building their working pressure more slowly, and at a more conservative pace. They might be operating from guidelines— the boiler is state-certified— that are conservative, and thus suggest or require slow versus rapid pressure-building.

How's that for quarterbacking 

Legeros - 08/14/11 - 08:36

In Raleigh, the first steamer was delivered in 1870. It pulled by hand for the first nine years. Parades and special occasions notwithstanding. That's the first myth-buster about steam engines, at least in North Carolina. That they were initially pulled by hand, not horse.

The first steam engines in our state were delivered in the 1860s and 1870s, to Charlotte, Elizabeth City, New Bern (2), Raleigh, and Wilmington (4). The first **horses** in our state, as my research indicates, appeared in the late 1870s and 1880s. Raleigh in 1879 and Charlotte in 1887, for example.

Thus there was a decade or two, there, where steamers were hand-pulled. That might sound crazy, but these were comparatively small response districts. Maybe fifteen blocks, maximum, in one direction for an engine house? Still, no small feat and even for those with large feet. Each steamer weighed a couple tons.

And nationally, the fire service didn't trust horses from the get-go. Read the old stories and historical accounts, and you'll see that firemen (maybe more in the northeastern cities?) believed that it was a downright disgrace for a fire engine to be pulled by anything other than men!

How frequently were the state's steam engines used at fires? Versus the actions of hand engine companies, or bucket and ladder companies, or even just the citizens using bucket brigades? That's a toughie to answer.

The first modern water systems in North Carolina appeared in the 1880s. That gave crews the ability to fight most fires using hydrant pressure. No steamer required. And if a town couldn't afford a water system at that time, they might continue using hand engines or, if they owned one, a steam engine.

In Raleigh, once the hydrants were installed, the steamer was relegated to reserve status. It was an auxiliary unit, brought into service for major fires. Or for mutual aid, when placed on a rail car, and taken out of the city.

And yet, even after our 1887 water system was installed, a new steamer was purchased in 1905. The reasoning included the need for a secondary pumping system, should the hydrants fail. And some of the taller/tallest buildings— four-stories, tops, I think— required a pressure boost, to reach the top floor(s).

But what about before water systems and hydrants started appearing in the 1880s? What about, say, Raleigh in the 1870s? Why did they buy a steamer to begin with? That one's easy: because the hand engines were thought insufficient for pumping power, for larger fires. And how many larger fires were there? Need to research and report back. To be continued.

Legeros - 08/14/11 - 09:12

Charlotte had a boiler in the station that kept the water in the steamer boiler hot at all times. The connections are still on the back of Old Sue. The fire box was properly layed to bring up the fire fast. We do bring the heat up in the boiler slow now to protect and preserve it.

Jon Hannan ([Email](#)) - 08/15/11 - 11:46

Thanks!

Curious - 08/15/11 - 13:20

An absolutely fantastic display! Thanks Chief Hannan and the members of CFD!!

A.C. Rich - 08/15/11 - 13:28

Continuing my commentary...

The social history of early firefighting in North Carolina has been the toughest to pin down. Sure, everyone has a romantic idea of Old Time Firefighting. We've all read the same big books of firefighting history, with their photos and paintings of jakes in action in New York and Boston and other northern cities.

But how did things work around here, back in the day? What was the firefighting history of our comparatively— if not drastically— smaller and younger urban areas? What was a day in the life like, for volunteer firemen in Raleigh in the 1860s? In Charlotte in the 1870s? In Wilmington in the 1880s?

The apples to apples facts are largely there, at least with diligent research. Dates for when companies were organized, apparatus was purchased, career members added, and such. There are population numbers and growth information for the respective cities. But it takes wider reading (and imagination) to envision how everything fit together.

Here's a look at the Raleigh Fire Department in the 1880s and 1890s, for example: <http://legeros.com/ralwake/raleigh/histo..> The document is two years old; the research is even a bit older. Thus I probably need to re-read the thing myself!

Observe the call volumes cited in that document. In fiscal year 1885, for example, only 12 fire alarms reported, and only two blazes of any magnitude. The mind's eye might imagine that Raleigh's steamer made regular appearances on Fayetteville Street, racing to calls every few days. The historical facts suggest something very different!

Maybe that's a future project. Research and write similar early histories for the fire departments in Charlotte, Wilmington, New Bern, etc.

And what about the smaller towns? Goldsboro, Reidsville, and Monroe, for example, each had steam engines. But I'd bet dollars to donuts that those pumping engines were used far less frequently than those in the more-populated, more-densely constructed communities.

So much to question, speculate, research, confirm, and, well, shrug. We do the best we can, filling in the holes from the past.

Legeros - 08/15/11 - 19:40

It was a very beautiful sight to see such a piece of apparatus work the way it did. Thank you to the staff of CFD, and NCSFA for allowing the opportunity to see history in action

Swiman - 08/15/11 - 20:34

Added link to more photos and some video. Still looking for more video links.

Legeros - 08/16/11 - 08:20

This is a 1902 American Fire Engine Company Steam Fire Engine. It was built in 1902 on a Fox boiler. This is not an American LaFrance Steamer. ALF did not come into existence until 1904.

Grant Mishoe ([Email](#)) ([Web Site](#)) - 08/17/11 - 12:37

No small point of note there, Grant! Next question, when was ALF formed? Their Facebook page, Wikipedia, etc. says 1903. Other sources say 1904.

Legeros - 08/17/11 - 19:25

Talks were started in 1903 but it was official and formed in 1904. It was officially known as American-LaFrance. It later was changed to American LaFrance. It was a product of the fallout of the International Fire Engine Company which was broken up. They took the two biggest names in the company and called it that. There is a lot of wrong information on that Wiki page.

A-L designers were working on a motorized vehicle in 1903. When they became A-L in 1904 two were delivered. They made two more in 1904 and 1905 of this type. They then made one in 1906 and two more in 1907 and 1908. The first TYPE 5's were not delivered until 1910. I have all the serial numbers and pictures of these rigs.

Grant Mishoe ([Email](#)) - 08/17/11 - 23:49

Thought it was purchased from International Fire it was still built on an American Fire frame. International was more of a trust with the individual brands working underneath the umbrella.

Grant Mishoe ([Email](#)) - 08/17/11 - 23:51

Name: (real name preferred)

E-mail: (optional)

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Comment moderation is enabled on this site. This means that your comment will not be visible on this site until it has been approved by an editor.

To prevent spam we require you to answer this silly question

What are the FIRST TWO LETTERS of the word 'fire'?

[\(Register your username / Log in\)](#)

Notify: Yes, send me email when someone replies.

Hide email: Yes, hide my email address.

Small print: All html tags except and <i> will be removed from your comment. You can make links by just typing the url or mail-address.