

Do Ladder Trucks Need To Be That Big?

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My morning review of web sites find the [following picture on Firegeezzer](#), from a story about a high-rise fire in Paris, France. Cool picture.



BSPP photo

Seeing a couple European ladder trucks in action brings to mind their single-purpose design. They are trucks with aerial devices and little else. And considerable smaller and lighter as a result.



On our side of the pond, ladder trucks are comparative monsters. We add ground ladders, loads of equipment, and often pumps, water, and hose. Rolling fire departments, really.



Lee Wilson photo

Question of the day. Do our ladder trucks have to be that big? Why have they historically been so big? And what are the consequences pro and con of that size? Discuss as desired. And maybe some world travellers can explain how apples relate to oranges.

Also posted the question to the Firehouse forums. We'll see where that leads, <http://firehouse.com/forums/showthread.p..>

Legeros - 11/25/10 - 08:52

Here we're tasked with the whole LOVERSU and extrication. Some Companies have added USAR responsibilities as well, so in my opinion, we need to have all the space we can get on these things.

Jake T. - 11/25/10 - 09:44

Interesting perspectives Mike and Jake. Would less be just as good? Would a service truck approach meet the vast majority of our needs... maybe even better; especially for the increased "mobile tool-box" and multi-discipline approach modern ladder companies now have. Cary FD (I believe) used/uses this approach to a degree. So, what is the big ladder really used for? ...an elevated waterway ...a rescue device. How many times is the stick really used and could a different design of aerial work just as well (example the Metz). I know I'm begging the question, but in an age of varied economic interests... who knows. Granted, perspectives will as waiver based on individual desire. As I always say, it all boils down to "value. (BTW – I LIKE THE BIG HONKING LADDER TRUCKS! -even if they are "maybe" not as efficient.) HAPPY THANKSGIVING!!

A.C. Rich - 11/25/10 - 10:54

in an emergency a ladder truck with pump, tank, and hose could hypothetical extinguish a fire before the first due engine company gets there. they are great for an elevated waterway and do come in handy for some rescue situations.

charlie - 11/25/10 - 10:58

You're right Charlie. L-1 did just that a few months ago.

Jake T. - 11/25/10 - 11:10

Interesting question, but could it also apply to apparatus in general? It's been a few years since I've been behind the wheel, and I'm not sure I'd want to anymore. Anything that has its own zip code shouldn't have wheels. So, what's driving the upsizing? Look back from the start of motorized rigs right through most of the 1950's. Few, if any compartments. Of course, there was a lot less equipment to carry back then. I'm seeing a return to larger tank sizes in many areas, as well. Then, of course, putting everybody inside makes for a bigger unit in most cases. The inside of some cabs is bigger than my first apartment. The down side is that the bigger the rig, the less places it can go. Maybe this isn't as critical in an urban area, but out in the country I've seen plenty of narrow driveys and twisty roads that present challenges.

RWECC - 11/25/10 - 12:25

Don't forget the territory they're operating in. European and Asian cities aren't necessarily any smaller, but the roads and station houses are.

Smaller appliances are easier to maneuver in tight spaces.

Paul - 11/25/10 - 12:36

I see both sides of the coin; having a pump and tank is nice for those few instances where a Ladder gets on scene and there's no Engine in sight (which clearly adds length). So of course, you gotta' stretch a line until the Engine gets there to take over fire extinguishment. But with this reasoning, shouldn't the Rescues have pumps and tanks on them as well???

On the flip side, when you look at departments which use Ladders without pumps and tanks, there's no question as to your fire-ground tasks when you arrive on scene. Engine companies stretch hose; Ladders throw ladders, search, etc.

Looking at some of the apparatus in Baltimore at the Fire Expo and in NJ at the Fireman's Convention, they're noticeably shorter without the pump and tank, thus easier to maneuver (the tillers are unbelievably shorter). Plus, the amount of storage space is nuts! Just look at the ol' Seagrave when it was here, PLENTY of room for storage.

Silver - 11/25/10 - 13:06

@AC, my opinion is that they should consider looking at a partial refurb of Rescue 1 & 3 to make use of some empty space. After speaking with a member of Rescue 3, he stated there's plenty of space in the top area of the box to allow for ground ladder storage, just will take a little work.

With that in mind, to get credit as a "service company", how many ground ladders are required? If they could do it, and overall positively affect our ISO rating, it may be easier to then justify a full crew to staff them.

Silver - 11/25/10 - 13:19

Here's the link... ISO ground ladder requirements for a "Ladder Company:" <http://www.isomitigation.com/ppc/3000/pp..>

A.C. Rich - 11/25/10 - 14:38

You can debate it for years... interesting points made about the European restrictions on size, the use of compartment spaces, etc... all I can tell you, is that being on the "smaller ladder", or the runt of the RFD Ladder Co's...its not the size, but how you best make use of what you got, and how aggressive your company is! Gobble Gobble!!

A.S. Meier - 11/25/10 - 17:08

Amen to that Andy.

Jake T. - 11/25/10 - 17:18

Most of the European countries use the ladders just as an "additional tool" – a rescue device or for extinguishing fires. All the special things you need to operate the ladder are on board. The staffing is usually 2-3 firefighters. Everything else comes from the engine. Staffing: 5-9 firefighters and the standard engine in Germany, for example, has equipment for 18 (!) firefighters. So, there's no reason for much equipment on the ladder truck.

Dennis ([Email](#)) - 11/26/10 - 16:13

Dennis, nice email address!

JH - 11/26/10 - 16:20

And, the ISO doesn't have jurisdiction in Europe or Asia! So some of the ISO stuff, like station planning built on 1.5 mile "horse travel capabilities" probably aren't an issue there either.

Last I read (while at the NFA) they have worked real hard at extinguishing methods that use very little water – one country was fighting small fires off a motorcycle with a small hose reel.

Go figure!

CH100 - 11/26/10 - 22:46

If you were designing from scratch today, what would a ladder truck (and engine, rescue, etc.) look like? And would you design any hybrid or all-new type of vehicle for carrying tools and **being** a tool on scene.

Legeros - 11/27/10 - 10:17

Similar to the ones' we use today, with the exception of the pump and tank (cheaper and gets members to think like Ladder Companies versus

having the urge to pull a line). Better assortment of ground ladders that can be set-up by one member versus needing two (straight 16's and 20's, two section 24's and 28's versus three section 28's and 35's), TACTICAL PLACEMENT of tools close to the exit points of the truck, hydraulic tools coming off the front pre-connected (versus a pre-connect or worse, just an open compartment).

Ladder Trucks should be laid out according to their job tasks. None of these suggestions are anything crazy, just different for certain areas. Engine companies should be laid out like engines with pre-connects everywhere and such, but a ladder truck should be laid out according to how your departments Ladder Companies operate. So tired of seeing ladder trucks laid out with trash lines in the front, no reason for it and a waste of space. They already put two speed-lays, a pump and tank on there, which is plenty to do hose work if needed. Use the front bumper to pre-connect a combi-tool or something similar.

Just MY opinion...

Silver - 11/27/10 - 13:38

@CH100 Yes, the ISO doesn't have jurisdiction in Europe. I just can speak for the german point of view. Every state has it's own jurisdiction for fire prevention, but they are mostly similar. In the state of Hesse the first engine has to be on scene within 10 minutes. You have a lot of smaller, very scattered towns here with volunteer fire departments. Not every department has it's own ladder, because the law says that a ladder-truck has to be on scene within the first 20 minutes. So they plan the ladder-trucks for the whole county, that every point can be arrived within 20 minutes – except you are in a town with special risks.

About the station planning: as already said, every village has it's own volunteer fire station. Only bigger cities have a 24/7 staffing and the jurisdiction says 1 station for 100.000 people. So Giessen, the city where I live, has a population of 75.000, 1 station with 24/7 staffing and 5 volunteer stations, which are sent to every call at night and weekends in their areas. To working fires also at daytime. The rest of the calls is done by the professionals.

EMS stations are also planned to hold the 10 minutes.

And yes, they really worked hard on extinguishing methods that use very little water to get a smaller damage by the water – it works with very high pressure.

Enough from the other side of the pond, we're drifting away from the theme...

Dennis ([Email](#)) - 11/28/10 - 08:16

Fascinating information Dennis! It is indeed interesting how the European fire services view and approach all aspects of fire service – suppression, prevention, equipment, etc. I have a friend from the NFA that is a BC in Essen, Germany; and she (yes, she) enlightened me on some of their system(s). It appears the Europeans are much more utilitarian in their approach with risk based capabilities and efficiencies considered. To me, it once again begs the question... who has more to learn: "us" or "them."

A.C. Rich - 11/28/10 - 09:45

I think, AC, there is one major difference between 'us' and 'them'. 'They' have seen multiple blocks of their cities burning (take a look at some of the aerial photographs of such cities as London, Manchester, Dresden, and Hamburg). 'We', on the other hand have not (except on the rare occasion, i.e. Chicago, San Francisco, the 60's riots). I am sure they have learned (and are still learning) many things from those experiences. As Americans, however, we are quick to forget, and we never seem to learn the lessons of others.

DJ - 11/28/10 - 17:52

Though DJ, don't forget the conflagrations suffered in earlier decades and centuries in the United States. Those experiences are probably woven into the current fabric of American firefighting and fire protection standards.

Detroit (1805), New York (1835), Pittsburgh (1845), Albany (1848), St. Louis (1849), Philadelphia (1850), San Francisco (1851), Charleston (1861), Chicago (1871), Boston (1872), Seattle (1889), Jacksonville (1901), Baltimore (1904), San Francisco (1907), Salem (1914), Nashville (1916), Atlanta (1917), etc.

Legeros - 11/28/10 - 18:06

Keep in mind that only a small number of those occurred in the modern era. Still, you are right there have been a few of these major fires for us to learn from. Building codes changed. But did firefighting change much from the early 1800's through the early 1900's? A look at many museums seems to suggest not. We still do not take a lot of aspects of fire prevention seriously. How many fires are the result of 'improper disposal of smoking materials' (fits the negligence category) but are rules 'accidental'? Or leaving a pot on the stove for a quick run down to the store? Have we learned? I think that one reason that the 'lighter' versions of fire protection work in Europe is the more serious approach

that they take on the prevention end. We still prefer to, for the most part, react after the fact.

DJ - 11/28/10 - 23:26

From a firehouse forums response, the issue of "chassis ballast" is noted here: "Up until the 2009 NFPA1901 std. American aerials were required to have full rated load at any point of extension or angle. This supplied a full hemispherical operating envelop and required a large strong aerial with a lot of chassis ballast to do it. The European aerials were typically designed to operate at high angles without the full extension at low angle capability. This supplies a truncated operating envelop without full side reach at low angles. This allows for a lighter aerial device and for a lighter, smaller chassis."

So in Europe, aerials are typically used long and high, and chassis ballast is sufficient with a smaller or lighter truck. In the states, aerials go long and lower, and you need more truck to balance the thing. Makes sense to me.

Legeros - 12/04/10 - 12:02

Firegeezer on this very subject this morning: <http://firegeezer.com/2011/03/11/morning..>

Legeros - 03/11/11 - 18:25

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

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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.