

A Guide to Selecting a Fire Apparatus Manufacturer

Selecting a fire apparatus manufacturer is an important decision. It is a decision that should involve more than just choosing a company that meets your specs or is the lowest bidder. Specifically, it should involve gathering and evaluating information about the manufacturer, the dealer, and the product itself to ensure you are getting the best overall value for your money. This information will allow you make an informed selection that you can confidently present to your town council, city manager, or board of fire commissioners to justify your choice.

The easiest way to gather this information is to submit a questionnaire to bidders to complete as part of their bid packages. That way, you'll be sure to ask each bidder the same questions in order to make an impartial evaluation. A sample questionnaire is included at the end of this guide. You may photocopy it, or you may use it as a basis for developing your own questionnaire.

Manufacturer Information

The first step in the information gathering process is to learn more about each manufacturer. This will help you determine their experience, financial stability, quality record, and other valuable information.

Experience. Fire apparatus manufacturers with a lot of experience know what works and what doesn't. They know the applicable vehicle standards and have kept up with the changes over the years. They have helped develop new fire apparatus technology and have incorporated it into their vehicles. This experience can be measured in terms of the years of operation and the number of apparatus built. It can also be measured in terms of satisfied customers. Here are some questions you may want to ask prospective bidders:

- How long has the manufacturer been building fire apparatus?
- How many fire apparatus has the manufacturer built?
- How many fire apparatus has the manufacturer built of the specific type you want to purchase (pumper, aerial ladder, rescue, etc.)?
- Can the manufacturer provide the names of at least ten customers who are operating fire apparatus of the specific type you want to purchase?

Ownership. In today's complicated business world, it is not uncommon to discover that some well-known fire apparatus manufacturers are actually owned by larger corporations. Make certain you investigate or research the parent corporations to thoroughly understand their background and relationship with the apparatus manufacturer. To find out about ownership, ask prospective bidders:

- Is the manufacturer owned or controlled by another corporation? If so, what is the name of the parent corporation and what is their primary business?
- How long has the manufacturer been owned by the parent corporation?

- Does the parent corporation own any other fire apparatus manufacturers? If so, what are their names?

Financial Stability. There are more than one hundred fire apparatus manufacturers in the United States today. It is an extremely competitive market, and only the most financially stable companies can survive. Over the past twenty years, dozens of manufacturers -- both large and small -- have gone out of business and left their customers without a source of parts, service, and warranty support. To determine a manufacturer's financial stability, ask them:

- Will the manufacturer provide a copy of their most recent annual report with their bid for review by the city or department finance officer, risk manager, or other designated person?
- Will the manufacturer provide a copy of their most recent financial statement with their bid for review by the city or department finance officer, risk manager, or other designated person?

Product Line. When you purchase a fire apparatus, you are establishing a long-term relationship with the manufacturer and dealer for parts, service, and warranty support over the life of the vehicle. Dealing with a manufacturer and dealer who can offer a broad product line is often more efficient and cost-effective than having to go one place for a pumper, another for an aerial, and somewhere else for a brush truck. To learn more, ask:

- What kinds of apparatus does the manufacturer build? (Alternatively, inquire if the manufacturer builds specific types of apparatus you may need in the future -- aerials, tankers, wildland pumpers, etc.)
- Does the manufacturer offer their apparatus on both custom chassis and commercial chassis to allow flexibility in design and cost?
- Does the manufacturer offer their apparatus on light-duty, medium-duty, and heavy-duty trucks to allow flexibility for specific applications?

ISO (International Standards Organization) Certification. The International Standards Organization sets quality standards for business operations worldwide. ISO certification is more than just a buzzword. A manufacturer must allow an independent, third-party agency to inspect all aspects of their quality systems and then must allow that same agency to conduct audits every six months. ISO 9001 is the most comprehensive certification. It measures quality in the areas of design, manufacturing, and service -- everything from taking the initial order to providing service in the field. Other ISO certifications are less comprehensive. Ask bidders:

- Is the manufacturer ISO 9001 certified?
- If the manufacturer is not ISO 9001 certified, state the ISO certification level and the areas covered in the scope of certification.

Bonds and Insurance. What happens when a manufacturer is awarded a contract and then decides not to build the apparatus or is unable to meet the specs? And what happens if they build it, and it fails? A bid bond compensates the customer if a manufacturer is awarded the contract, but then backs out of the deal. A performance bond compensates the customer if an apparatus is built, but does not meet the specifications. Liability insurance covers damage, injury, or death resulting from a failure

of the apparatus. Bonds and insurance are part of the cost of the apparatus, but larger companies with good records can obtain them at lower rates. Ask bidders:

- Will the manufacturer provide a bid bond for 10% of the total bid? (Bid bonds must be from the apparatus manufacturer -- bonds from sub-contractors are not acceptable.)
- Will the manufacturer provide a performance bond for 100% or more of the total bid? If so, how much will it cost (cost per \$1,000)? (Performance bonds must be from the apparatus manufacturer -- bonds from the salesperson or from sub-contractors are not acceptable.)
- Will the manufacturer provide a \$25,000,000 product liability insurance policy?

Lease/Purchase Options. Writing an apparatus spec that meets your needs can take a lot of effort. You shouldn't have to go through the same amount of effort to find a finance plan that also meets your needs. Some manufacturers can't offer you any finance help -- they just want to sell you the apparatus. Larger manufacturers can offer you a wide variety of lease and purchase plans. To determine your options, ask:

- Does the manufacturer offer finance options? If so, describe them.
- Does the manufacturer offer leasing options? If so, describe them.

Customer Support. Most customer support is provided by the local apparatus dealer. However, some manufacturers offer additional support directly to their customers. Training programs and refurbishment centers are among the most valuable kinds of factory-sponsored customer support. Inquire about these programs by asking:

- Does the manufacturer have a training program for vehicle operators? Does the training take place at the fire department site and does it last for more than one day to ensure the operators are familiar with all modes of operation and with the proper preventive maintenance procedures?
- Does the manufacturer have a training program for fire mechanics and emergency vehicle technicians? Does the program cover all models in the manufacturer's product line? Does the program also include review courses to prepare students for EVT Certification Commission exams?
- Does the manufacturer have a factory-operated facility to perform major repair, refurbishment, and rehabilitation of fire apparatus? Does the refurbishment work comply with the requirements of NFPA 1912?
- List any other customer support services offered by the manufacturer.

Dealer Information

The dealer is an equally important factor in selecting an apparatus manufacturer. For many departments, the dealer will be the main source of parts, service, and warranty support. The dealer sales personnel can also provide information about the latest changes in technology and applicable standards.

Experience. Experienced dealers with experienced personnel can often give you the best support. This can be measured by the number of years they have been in business and the number of apparatus they have sold. Their experience and level of support can

also be measured by their satisfied customers -- other departments in your area. Ask bidders:

- How long has the dealer been selling fire apparatus? How long has the dealer been selling this brand of apparatus? Is the dealer strictly dedicated to selling fire apparatus or do they sell and service other products?
- What is the average number of years of experience of the dealer's sales personnel?
- How many fire apparatus has the dealer sold?
- Can the dealer provide the names of at least ten customers who are operating fire apparatus of the specific type you want to purchase?

Parts and Service. When fire apparatus have problems, they need to be resolved quickly. That's why it is important to select dealers who offer parts and service support from qualified personnel when and where you need it. Inquire by asking:

- Does the dealer have one or more parts and service facilities? If so, list the locations.
- What services are available and what are the service department hours of operation at each location?
- Does the dealer have one or more mobile service units to provide service in the field? If so, state the services provided, areas covered, and the hours of operation.
- Are all the service technicians factory trained? Are they EVTCC certified? Can you provide a list of certified service personnel and their certifications for each location?
- What parts are available and what are the parts department hours of operation at each location?
- What is the average delivery time for parts not in stock?

Insurance. If the dealer is going to be providing parts and service for your apparatus, it is important for them to have liability coverage for the work they do. It is also important to make sure they have damage coverage for the time your apparatus is in their possession. To protect yourself, ask:

- Does the dealer have liability insurance? If so, how much?
- Does the dealer have damage coverage for the time the apparatus is in their possession? If so, how much and what damage is covered?

Product Information

In addition to being concerned with the details of the particular apparatus you are specifying, you should also ask bidders about their products in general. This will help you understand their engineering, testing, and manufacturing capabilities, as well as the types of warranties they offer.

Engineering. A fire apparatus is a complex vehicle with many unique components and systems. To ensure the apparatus performs properly, it needs to be designed by qualified and experienced engineers. The engineers must consider weight distribution, structural stresses, electrical loads, safety, performance, and ease of maintenance for the life of the apparatus. The best way to do this is to have the same team of engineers design all the major portions of the vehicle -- the cab, chassis, body, electrical system, and aerial devices. That way, they can make sure everything fits together and works together. Ask bidders:

- Does the manufacturer have an engineering staff? If so, how many full-time degreed engineers are employed? What is the average number of years of experience of these engineers?
- Does the engineering staff design the cab, chassis, body, electrical system, and aerial devices on their fire apparatus? (Only the body, electrical system, and aerial devices portions apply for vehicles built on commercial truck chassis.)
- Can the engineering staff provide an accurate weight distribution analysis, electrical load analysis, and engine/transmission performance analysis before the apparatus is built?
- Does the engineering staff use the latest versions of computer-aided design (CAD) and analysis tools?

Manufacturing. Building a fire apparatus requires as much skill as designing it. Just as with engineering, the best way to do this is to have an experienced team of workers build all the major components. It also helps to integrate the engineering and manufacturing functions so that the output of the engineering computer-aided design tools becomes the input for the manufacturing computer-aided manufacturing tools. To determine a bidder's manufacturing capabilities, ask them:

- How many full-time manufacturing workers are employed? What is the average number of years of experience of these workers?
- Does the manufacturing staff build the cab, chassis, body, electrical system, and aerial devices on their fire apparatus? (Only the body, electrical system, and aerial devices portions apply for vehicles built on commercial truck chassis.)
- Are all welders certified? State the certification required for each welded component on the apparatus.
- Does the manufacturing staff use the latest versions of computer-aided manufacturing (CAM) tools?

Standards Compliance. Building a fire apparatus that does not fully comply with applicable vehicle standards can put the manufacturer and the customer in a position of serious liability if an accident occurs. This is true for mandated standards, such as the Federal Motor Vehicle Safety Standards (FMVSS), as well as for those standards that are widely accepted by other manufacturers in the industry, such as NFPA and KKK. Some manufacturers will try to cut costs by complying with only certain parts of these standards. Don't accept such apparatus. Ask each bidder:

- Does the apparatus you are bidding comply with all portions of the applicable vehicle standards? (NFPA 1901 or NFPA 1906 for fire apparatus; KKK-A-1822E and/or state standards for ambulances; FMVSS for all vehicles.)

Testing. Some manufacturers perform little or no testing when they introduce new apparatus or components. Others perform only the minimum tests required by the FMVSS and NFPA or KKK standards, but nothing else. To ensure that new apparatus designs will function properly -- both now and in the future -- a manufacturer needs to perform a series of computer analyses and prototype tests of all critical components and systems. To determine how much testing has been done on a particular apparatus design, ask:

- Has the manufacturer performed a fatigue life analysis and testing of all structural components on the apparatus model being bid? State which tests and the results.
- Has the manufacturer conducted ride quality testing on the apparatus model being bid? State which tests and the results.
- Has the manufacturer conducted cab crashworthiness testing on the apparatus model being bid? State which tests and the results.
- Has the manufacturer conducted load testing of the aerial device on the apparatus model being bid (if applicable)? Does this testing include personnel load, equipment load, static waterway load, and elevated monitor nozzle reaction loads both vertically and horizontally? State which tests and the results.
- Has the manufacturer conducted any other analyses or tests as part of the development of the apparatus model being bid? State which tests and the results.

Third-Party Verification. Having a manufacturer test apparatus is good, but having an independent, third-party organization conduct their own tests is even better. And best of all is to have an independent, third-party organization not only conduct the tests, but also verify the overall design. To determine whether a manufacturer has used third-party testing and verification, ask bidders:

- Has the manufacturer submitted their products to an independent, third-party company for testing? If so, state which components or systems and the results.
- Has the manufacturer submitted their products to an independent, third-party company for verification of the design? If so, state which components or systems and the results.
- Will the independent, third-party company provide written certification of the test results and verifications?

Warranty. Some fire apparatus manufacturers offer only limited warranty coverage for their products. After a year or two, their customers are responsible for all problems -- even if it was the manufacturer's fault. Other manufacturers offer longer warranties on certain components, but put hidden restrictions on the coverage. For example, they might give a lifetime warranty on the frame rails, but give no warranty on the frame crossmembers. To determine the warranties offered by manufacturers, ask them:

- What is the vehicle frame and frame crossmembers warranty?
- What is the cab structural warranty?
- What is the body structural warranty?
- What is the paint warranty?
- What is the pump warranty (if applicable)?
- What is the pump plumbing warranty (if applicable)?
- What is the water tank warranty (if applicable)?
- What is the aerial device warranty (if applicable)?
- What is the standard warranty for all components manufactured by the apparatus manufacturer and not covered above?
- Are there any other specific warranties -- either from the manufacturer or from a component supplier? If so, state what and how long.

Manufacturer, Dealer, and Product Questionnaire

Each bidder is to complete all portions of this questionnaire and submit it with their bid. Failure to do so will render their bid non-responsive.

Manufacturer Information

Experience.

- How long has the manufacturer been building fire apparatus?
- How many fire apparatus has the manufacturer built?
- How many fire apparatus has the manufacturer built of the specific type you want to purchase (pumper, aerial ladder, rescue, etc.)?
- Can the manufacturer provide the names of at least ten customers who are operating fire apparatus of the specific type you want to purchase?

Ownership.

- Is the manufacturer owned or controlled by another corporation? If so, what is the name of the parent corporation and what is their primary business?
- How long has the manufacturer been owned by the parent corporation?
- Does the parent corporation own any other fire apparatus manufacturers? If so, what are their names?

Financial Stability.

- Will the manufacturer provide a copy of their most recent annual report with their bid for review by the city or department finance officer, risk manager, or other designated person?
- Will the manufacturer provide a copy of their most recent financial statement with their bid for review by the city or department finance officer, risk manager, or other designated person?

Product Line.

- What kinds of apparatus does the manufacturer build? (Alternatively, inquire if the manufacturer builds specific types of apparatus you may need in the future -- aerials, tankers, wildland pumpers, patient transport vehicles, etc.)
- Does the manufacturer offer their apparatus on both custom chassis and commercial chassis to allow flexibility in design and cost?
- Does the manufacturer offer their apparatus on light-duty, medium-duty, and heavy-duty trucks to allow flexibility for specific applications?

ISO (International Standards Organization) Certification.

- Is the manufacturer ISO 9001 certified?
- If the manufacturer is not ISO 9001 certified, state the ISO certification level and the areas covered in the scope of certification.

Bonds and Insurance.

- Will the manufacturer provide a bid bond for 10% of the total bid? (Bid bonds must be from the apparatus manufacturer -- bonds from sub-contractors are not acceptable.)
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- Will the manufacturer provide a \$25,000,000 product liability insurance policy? If so, how much will it cost?

Lease/Purchase Options.

- Does the manufacturer offer finance options? If so, describe them.
- Does the manufacturer offer leasing options? If so, describe them.

Customer Support.

- Does the manufacturer have a training program for vehicle operators? Does the training take place at the fire department site and does it last for more than one day to ensure the operators are familiar with all modes of operation and with the proper preventive maintenance procedures?
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Parts and Service.

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- What services are available and what are the service department hours of operation at each location?

- Does the dealer have one or more mobile service units to provide service in the field? If so, state the services provided, areas covered, and the hours of operation.
- Are all the service technicians factory trained? Are they EVTCC certified? Can you provide a list of certified service personnel and their certifications for each location?
- What parts are available and what are the parts department hours of operation at each location?
- What is the average delivery time for parts not in stock?

Insurance.

- Does the dealer have liability insurance? If so, how much?
- Does the dealer have damage coverage for the time the apparatus is in their possession? If so, how much and what damage is covered?

Product Information

Engineering.

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- Can the engineering staff provide an accurate weight distribution analysis, electrical load analysis, and engine/transmission performance analysis before the apparatus is built?
- Does the engineering staff use the latest versions of computer-aided design (CAD) and analysis tools?

Manufacturing.

- How many full-time manufacturing workers are employed? What is the average number of years of experience of these workers?
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- Does the manufacturing staff use the latest versions of computer-aided manufacturing (CAM) tools?

Standards Compliance.

- Does the apparatus you are bidding comply with all portions of the applicable vehicle standards? (NFPA 1901 or NFPA 1906 for fire apparatus; KKK-A-1822E and/or state standards for ambulances; FMVSS for all vehicles.)

Testing.

- Has the manufacturer performed a fatigue life analysis and testing of all structural components on the apparatus model being bid? State which tests and the results.
- Has the manufacturer conducted ride quality testing on the apparatus model being bid? State which tests and the results.
- Has the manufacturer conducted cab crashworthiness testing on the apparatus model being bid? State which tests and the results.
- Has the manufacturer conducted load testing of the aerial device on the apparatus model being bid (if applicable)? Does this testing include personnel load, equipment load, static waterway load, and elevated monitor nozzle reaction loads both vertically and horizontally? State which tests and the results.
- Has the manufacturer conducted any other analyses or tests as part of the development of the apparatus model being bid? State which tests and the results.

Third-Party Verification.

- Has the manufacturer submitted their products to an independent, third-party company for testing? If so, state which components or systems and the results.
- Has the manufacturer submitted their products to an independent, third-party company for verification of the design? If so, state which components or systems and the results.
- Will the independent, third-party company provide written certification of the test results and verifications?

Warranty.

- What is the vehicle frame and frame crossmembers warranty?
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- What is the body structural warranty?
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- Are there any other specific warranties -- either from the manufacturer or from a component supplier? If so, state what and how long.