

## INTRASTATE FLEET STANDARDIZATION

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Standardization of North Carolina Department of Transportation's (NCDOT's) equipment fleet may be equivalent to motherhood and apple pie. Everyone supports the idea. NCDOT's experience is that one can sell the concept until individual preferences are violated. The fleet includes an unnecessary variance of functionally equivalent units in the opinion of central equipment staff. It appears that the field forces cannot work without asphalt kettles that include those with capacities that vary from 50 to 300 gallons, six sizes of trailer mounted, diesel oil or bottled gas fired units. It also appears that the required different versions of a 1/2-ton pickup approach infinity. The various requests include 4-cylinder, 6-cylinder, 8-cylinder engines, compact and full size, 2-wheel and 4-wheel drive, various bed lengths, cab configurations and tire tread patterns.

Advantages of standardization within a state's fleet are numerous and most are obvious. The following are a few that come to mind:

- The fewer the variants within an equipment class, the larger the blocks of units comprising the order. While hard to confirm, it is logical to expect lower prices.
- Reduced inventories and associated lower capital cost of inventory is a measurable advantage to standardization.
- There is an increase in familiarity with the fleet support network and ensure improved communications when dealing with fewer suppliers.
- Reduced difference between successive annual buys reduces required training of operators and mechanics and material problems that might result in absence of appropriate training.

Fleet standardization has associated costs and obstacles. Specification constraints to achieve standardization will undoubtedly restrict competition. A few years ago, specifying radial tires on motor graders to achieve a radial equipped fleet, meant that they would be supplied with Michelin tires as "they were the only act in town." In North Carolina this prevented such a move until Goodyear manufactured such a tire. This is an example where purchasing law or the purchasing organization may encourage or require maximum competition. When allowed and restricted competition is recognized by

suppliers, their perception that they are locked into the business may encourage a rise in their prices. Vendors that perceive they are locked out may cause political or legal problems for the organization. Too close a focus on a few suppliers may result in a loss of visibility across the marketplace and cause the buyer to miss innovative changes in the industry by other suppliers. A final obstacle to standardization may be observed when operators, sometimes mechanics, and often engineers that salespersons get to, may have name brand biases. They may identify associated desires as requirements for other than the standard unit. Unhappy operators may communicate their displeasure with other than John Deere motor graders by abusing the Caterpillars.

Early attempts at general standardization in NCDOT were primarily through central unit generated specifications. These specifications presumed an understanding of what field forces needed that was based on informal communications, personal knowledge and the influence of manufacturers' representatives. Ideas from the field that were not addressed resulted in resentment. Field forces were heard to say that "headquarters is telling us how to do our job and what to do it with." To meet this initial communication challenge several years ago, a Specifications Committee was formed that reviewed each significant specification before it was used in an annual procurement. Committee composition ensured field representation and generation of consensus specifications that included user ideas.

Committee members included representation from many groups:

- Division/district Maintenance Engineers,
- Maintenance Supervisors,
- Operators of Specialty Equipment,
- OSHA/Safety Representatives,
- Equipment Maintenance Supervisors;
- Specification Writers, and
- Invited Guests, such as Manufacturers' Representatives.

The representatives from the equipment industry were most helpful in advising what was available in the marketplace and addressing, for unique cases, the

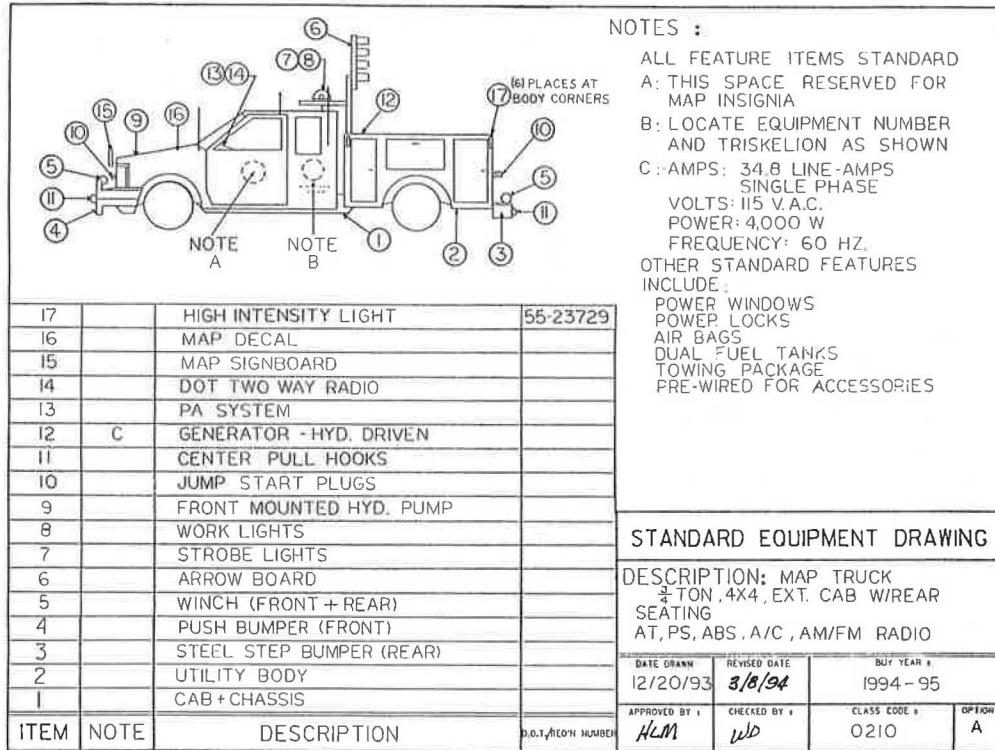


FIGURE 1 Standard equipment drawing for a map truck.

"buildability" of the specified unit. The Committee is often augmented to handle special purpose equipment with specific user groups represented. In this way representative users identify needs, unit safety is considered, a consensus is reached, and recommended specifications are drafted or modified. Resulting specifications, while more detailed, incorporate essentially all desires from the field in a single unit. The improved methods for accommodating users needs into specifications resulted in better detailed and more standard specifications, but these documents did not provide effective communication tools with field forces.

The vehicle used in NCDOT to identify what is available, in other words, to identify the units represented by detail specifications, is the specification drawing book. It provides a drawing that includes all available options for each significant equipment class. The specification drawing book is provided to field forces along with a price list and the division fair share budget allocation for replacement equipment. Resulting prioritized equipment lists are expected to become progressively more standardized among the several organizations. Equipment replacement lists from across the state are collated centrally and the year's consolidated buy list generated.

The cornerstone of NCDOT's standardization program is the drawings that tell the customers up front

what is available. In the past, misunderstandings of what the user thought was being ordered caused severe problems many months later when equipment was delivered. The drawing of the class 210 motorist assistance patrol (map) truck is shown in Figure 1. While the detail of this unit may appear to be overkill, it includes needs from all the geographical locations with congestion management teams and this unit is less costly than supplying three or four different versions.

The 1993-94 buy year incorporated NCDOT's drawing catalog in identifying requirements. The buy cycle has been much smoother. While there is plenty of room for further standardization, the improved system discipline will make further efforts easier. There are additional benefits to using standard drawings. Using standard drawings and denoting numbers required by various customers provides a basis for generating definitive production orders, by division, at the central equipment depot. The drawings are used to ensure customers receive units prepared for delivery that reflect accurately their order. Also, responses to inquiries from suppliers receiving purchase orders based upon detail specifications are often easier when shown in a picture of anticipated unit characteristics. Progress toward "intrastate" equipment standardization is slow in NCDOT, but much more deliberate today than it was several years ago.