



Future Truck Program Information Report: 2001-3

Future Cab Study

Summary Report From Focus Group Activity

Developed by The Maintenance Council's (TMC)
Future Cab Task Force

INTRODUCTION

At TMC's 2000 Annual Meeting, 16 fleet members of TMC participated in a focus group about their needs and desires for truck cabs in 2010. The focus group was led by Robert Crump and Renae Bowers-Carnahan. The focus group session was observed via closed circuit video by other members of TMC in an adjacent room.

The intent of the session was to identify problems and issues. Solutions were not discussed in order to allow the broadest possible field for TMC Associate members to explore the ideas and develop appropriate solutions. The participants were encouraged to agree silently and speak when they wanted to expand and idea or add new ideas to the discussion. As a result of this format, it is not possible to know from this single session if the ideas presented represent a majority of the industry or even a

majority of TMC fleet members. The purpose of a focus group format is to provide the broadest possible range of information in the shortest possible time, not to assess the value of the information.

There were no major problems or issues with the current cabs raised in the discussion. There were a number of issues raised that may affect the design of the cab though. For example, current and future ergonomics regulations were mentioned repeatedly as a concern. The group did not identify any specific problems with cabs today that might result in an ergonomics regulation violation, but simply recognized that this is a growing concern that they expect to affect their decisions about truck cabs in the future. The questions and the responses covered in the session are summarized in the following pages.

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SUMMARY OF FOCUS GROUP RESPONSES

1. What are the biggest challenges facing fleets today as they look toward the future?

Many of the participants are having difficulties in recruiting and/or retaining drivers and mechanics. They expect this problem to increase in the future. They perceive that finding ways to motivate drivers will be more difficult and will require more creative solutions than just increasing pay. Regulations, such as the proposed hours of service rules and OSHA ergonomics rules regarding ingress/egress were mentioned. Some participants expect to move toward the military model of limited maintenance at the local level with more complex maintenance done at a depot level somewhere else.

2. What will be required to make a fleet profitable 10 years from now?

Customers will demand more JIT (Just-in-time delivery) and specialized equipment (such as a specified communications system). Customers are also expected to continue the practice of penalizing the trucking company for late deliveries. In order to be profitable, fleets will need to cut maintenance costs by buying equipment that is more durable and runs longer without maintenance. More “maintenance free” equipment will be necessary also. - At the same time, fleets will need to hold equipment longer than they have in the recent past.

3. How should the future cab change, or should it change, to reflect the societal pressure toward increasing safety?

The participants perceived that this has been happening for some time. They stated that the change from cabovers to conventionals was partially driven by a desire for increased safety. Ingress and egress is still a problem. One participant stated that potential injuries to drivers on the job are a more significant issue for fleets than crash protection because other types of injuries are more common. The ergo-

nomics regulations are frightening to the fleets because no one knows how they will be interpreted when applied to fleets. It was suggested that increasing the GVW allowed might improve the overall safety of the industry on the road by having fewer trucks on the road.

4. Do you prohibit the use of cellular phones while driving?

Some fleets use cellular phones exclusively for their communications. No one stated that they specifically prohibit their use while driving though at least one participant stated they require their drivers to stop in order to use the Qualcomm system.

5. Is there a need for wireless communication in the trucks?

The response to this question was a decisive ‘yes.’ Provisions should be made for wireless communications systems. The discussion indicated that pre-wiring today is not as good as the fleets desire, so ‘good’ pre-wiring should be provided in the future.

6. Which regulations will affect you in the future?

The proposed hours of service rules were expected to have a major affect. Some participants expected the weight regulations to force the tractors to become shorter and lighter in the future in order to accommodate longer trailers. Ergonomics regulations were a concern for some fleets. Some participants expected the number of regulations intended to improve roadway safety, such as driver monitoring systems, to increase. Noise control regulations were mentioned as affecting both the equipment purchased and the routing selected by the driver.

7. Who will be the employee of the future?

The participants stated they are already hiring a wider range of people than in the past and expect this trend to continue. The cab of the future must accommodate a larger range of people than today, e.g. very large AND very

small drivers relative to today. During the discussion of this question, a geometry problem was raised about the current truck cabs. The existing cabs accommodate large drivers better than small drivers. Specific problems noted were that the seat does not move close enough to the pedals for short people and their visibility over the hood is too limited. Another visibility problem was that today's large mirrors create blind spots for the driver.

8. Do you see changes in the shop of the future? (tools, quality, etc.)

The participants expect more electronics in the cab of the future. They expect to either hire more technicians or to go to a depot style system where electronic modules are simply switched out at the fleet level and sent somewhere else for repair. In the future, they expect that computer literacy will become a requirement for technicians. The electronic manuals may be directly connected to the OEM. They would like to have a single integrated diagnostic system for the entire truck instead of the multiple systems that exist today.

9. How quickly will change come about?

Change will happen slowly for the maintenance area because the payback is poor. There will continue to be a resistance to new technologies from the maintenance community because new technologies are often perceived as creating more maintenance problems.

10. What modifications do you or your drivers make to the primary contact area of the cabs today? (The primary contact area is the area the driver can reach while seated in the driver's seat.)

The responses to this question could be grouped into three basic categories: accommodations for short or tall people, comfort issues, and convenience issues. Adding blocks to the foot pedals and unbolting seats to move them fore or aft, and adding extenders to toggle switches were typical accommodations

made for short or tall people. Putting black tape over lights that are too bright or considered a nuisance, taping cardboard to the dash to direct the airflow from vents and adding air deflectors to reduce noise were all mentioned as ways to improve the driver's comfort. Fleets are adding inverters to accommodate TVs and microwaves. They are also adding aftermarket closets, fog fans, and smoke detectors in the sleepers. Drivers are attaching cans and cups to the dash as cup holders and ashtrays. The participants stated that it is still difficult to find convenient places for CBs, pens, pencils, clipboards, and paperwork.

11. Is the driver's area becoming more of an office?

Some participants said yes and others said no. There was some indication that the answer is dependent on the fleet segment. Some want provisions for computers and printers in the cab. Others feel that owner operators may need them, but fleets will not.

12. Do truck cabs need more glare reduction?

The participants were unanimous that glare reduction is needed, especially at sunset and sunrise.

13. What will the driver's interface to the outside world be like in the future?

There will be more sensors for maintenance as well as for collision avoidance. These participants expect to have more indirect vision devices, in particular.

14. Will there be more teams in the future?

This group of participants did not see a trend toward more teams.

15. Is there a need to develop a cab for a solo operator?

Yes, it was suggested that a solo truck be focused on lower weight and fleet specifications, though it should be possible to modify it easily to increase the resale value. Some disagreed with this opinion and felt that a solo

vehicle should be over spec'd from the beginning for the resale market.

16. Do you expect the vehicle turnover time to stay the same for fleets in the future?

This group felt that the work of TMC and the manufacturers has resulted in better maintenance; a trend which they expect to continue in the future. This will foster a trend to increase the length of time a vehicle is kept. This trend will be tempered by the need to recruit and train drivers who do not want to drive a five year old truck. Even if the truck is turned over, the participants expect that specialized equipment such as communication or collision avoidance equipment will be kept longer and moved from truck to truck because of their high investment cost.

17. What cab designs today should get the 'bonehead design' award?

There was no clear trend in this section, so the following list includes all the responses to this question:

- external door hinges.
- windshield wiper motors that can't be changed easily.
- doors that hit mirrors when open.
- mirrors that hit cab when door is opened.

- a clutch that pinches wires when operated.
- windshield wipers that spray water everywhere except the place it's needed.
- too much plastic in the dash.
- a shifter that is too close to the dash.
- controls with plastic gears.
- not having a tilt steering wheel.
- poor driver seat placement and adjustability.
- Location of the passenger door window crank too low.
- inability to service anything on the doors.
- windshields that are difficult to change out.

18. What one piece of advice would you give to the people who will be designing the cab of the future?

Drive the vehicles yourself and design for the driver's needs, comforts, and ergonomics. Be certain to give the driver appropriate information while giving them more information. Improve the quality, durability, and reliability of the cab components, especially the electrical and electronic systems. Improve the driver's environment (HVAC, noise, and vibration). Use standardized parts. 