

Mayday Industry Survey Information Report

- 1. Scope**—This SAE Information Report is a summary of information obtained by way of survey conducted during the 2Q and 3Q of 1997 of MAYDAY system manufacturers. The data represented here has been condensed from the original survey that was conducted by telephone interviews and faxes. The information contained within is limited to technical data as it pertains to vehicle and on-board MAYDAY system operations. It does not contain business, marketing, or any proprietary technical information. The complete survey results are in the possession of the SAE.

The purpose of this survey was to determine whether the general concept and architecture on which the SAE J2313 MAYDAY Message Set was being developed is consistent with those of current MAYDAY system hardware manufacturers. The survey was not intended for MAYDAY service providers or public service answer points and emergency service providers. Further studies, perhaps by organization such as NENA or APCO, may be necessary to develop a complete vision of how complete MAYDAY response centers and systems may be implemented.

2. References

- 2.1 Applicable Publications**—The following publication forms a part of this specification to the extent specified herein. Unless otherwise indicated, the latest version of SAE publications shall apply.

SAE J2313 (DRAFT)—Standard for On-Board Land Vehicle MAYDAY Reporting Interface
MAYDAY Survey Questionnaire Template attached as Appendix A for reference
Completed MAYDAY Survey Questionnaire SAE J2313 (DRAFT) (Business confidential)

- 3. Summary of Questionnaire**—All participants were provided with the following diagram of the proposed SAE J2313 Generic Vehicle MAYDAY System (see Figure 1).

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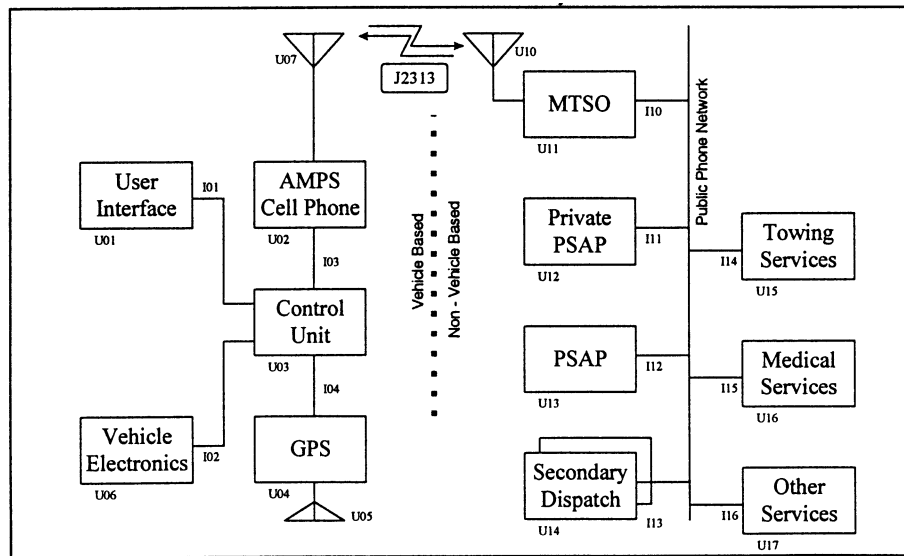


FIGURE 1—GENERIC VEHICLE MAYDAY SYSTEM MODEL

Questions were either answered over the telephone or by return fax. If questions were not answered or the answers were deemed proprietary in nature, they were excluded from this report. The following is a summary of the participants.

- A total of 13 prospective companies were identified
- 6 of 13 participated willingly
- 3 of 13 did not respond
- 1 of 13 said questionnaire did not pertain to their company
- 1 of 13 was out of the business
- 1 of 13 could not be reached
- 1 of 13 was unwilling to participate

For a summary of answers, see Table 1.

3.1 Summary of Answers—See Table 1.

TABLE 1—SUMMARY OF ANSWERS

Question Number	Question	Answers
1	Type of deployment	Private = 5 Private/Public Partnership = 1
2	Complies with generic system model	Yes = 6 No = 0
3	Location determination technology used	GPS only = 4 GPS + dead reckoning = 2
4	Driver/user in-vehicle interface	Push button = 5 Dialed sequence on phone = 3 Voice command = 0 Automatically triggered = 4
5	User services provided	Route guidance = 3 Remote door opening service = 3 Concierge service = 2 Roadside assistance = 5 Theft protection/recovery = 4 Service locator = 3
6	How services are accessed?	By voice = 4 By pressing buttons = 5
7	Call takers (answer point type)	Use their own = 3 Use outside services or PSAPs = 3
8	Can call taker “3-way” call with PSAP and the vehicle?	Yes = 4 No = 2
9	Does system provide non-voice data?	Yes = 3 No = 3
10	Does your system interface with traffic management agencies directly?	Yes = 4 No = 1
11	Which of the following interfaces could benefit from the development of standards?	In-vehicle electronics interfaces (IDB, ODB others) = 4 PSAP interface procedures (NENA, Telco) = 2 Cellular telephone system = 2 Vehicle MAYDAY message set = 2

4. **General Conclusions and Comments**—Based on the answers provided by the companies that responded to this survey, several (probably obvious) conclusions may be drawn.

4.1 Question 1, Type of Deployment?—Since the entities we were searching for were hardware manufacturers, it is not surprising that the majority of them were “for profit” companies. It is unlikely that state and federal agencies would be interested in becoming hardware manufacturers. There are, however, incentives for government agencies to team with commercial manufacturers for projects that may involve ATIS infrastructures provided by the government.

4.2 Question 2, Complies with Generic System Model?—All respondents confirmed that their system architecture complied with the generic system architecture. Some had enhancements such as autonomous navigation units and dead reckoning units, etc. In general, the generic architecture seems to be in line with the design concepts held by commercial equipment manufacturers. We conclude that the technical approach implied by the message set (which is not specific to any given architectural embodiment) will not present any concerns. We further conclude from verbal comments made by responders that multi-function devices which include the Mayday function among others are likely to increase in the future.

- 4.3 Question 3, Location Technology Used?**—Most of the respondents said they used GPS technologies. As the price of GPS chip sets decline and as more vehicle-based GPS receivers are sold, MAYDAY system utilizing GPS technologies will be easier and cheaper to implement. Most implementers recognize the inherent limitation in using GPS data as the sole means of position determination, however, most also hold that this is a response center issue rather than a vehicle equipment problem.
- 4.4 Question 4, Driver/User In-Vehicle Interface?**—The responses here were varied, most used dedicated buttons to activate their MAYDAY systems, some used a combination of phone keypad entries and four offered automatically activated MAYDAY initiations. Little may be drawn from these results. They may be an argument for standardizing the interfaces so that drivers will be familiar with methods of activation regardless of what vehicle they may be in. We presume that such an effort would be performed by the SAE - ITS Division's Human factors committee. There remain liability concerns with regard to attachment to the original equipment SRS system at this time. The IDB bus gateway may provide a means to overcome this concern. At least one vendor uses duplicate accelerator sensor devices to sense an automated deployment and is then able to judge the severity from this data. Areas like this which allow private advancement of the art seem problematic to standardizing into the message set.
- 4.5 Question 5, User Service Provided?**—Here again, the responses ran the gambit. This will probably be the differentiating factor for consumers when choosing a MAYDAY service provider. The general concept of interoperable MAYDAY equipment also brings with it the concept that equipment purchase could be separate from the private response centers (one or more) which provide various services. In the business model employed today, purchase of equipment from a specific vendor implies an operational contract with a variety of service response centers all tied to that brand name. If consumers are in a position to choose their service providers, the variety of services offered is expected to become even more diverse.
- 4.6 Question 6, How Are Services Accessed?**—Here as in question 4, most of the manufacturers use keypad or button presses to access other services, however, the majority also have the customer speak to a call taker who initiates the service for the customer. At present, manually (spoken or button activated) intervention appears to be the norm. In the future as more mature compute resources are added to MAYDAY (say a navigation computer) one can reasonably expect algorithm driven choices to appear. (e.g., If <problem is a flat tire> then call <any towing firm> else if <problem is major mech. && vehicle is in warranty> then call <closest authorized dealer>) A number of firms are adding vehicle diagnostics to the abilities of the MAYDAY system which further indicate trends in this direction.
- 4.7 Question 7, Call Takers (Answer Point Type)?**—The respondents were split on this answer, three used their own call takers, three did not. Some of the equipment manufacturers contacted used the same call taking companies, usually telephonic burglar alarm monitoring companies, to take calls for them. Some simply dial 911 for the driver. It should be pointed out that automatically dialing 911 for the user has a number of implied liability issues which it is not at all clear the equipment manufactures have fully thought out. Neither SAE nor NENA (The National Emergency Number Association) have developed any policy or recommendations regarding this operational choice.
- 4.8 Question 8, Can Call Takers "3-Way" Call with PSAP and Vehicle?**—The majority of the respondents said yes. This will become a procedural issue that will have to be determined by NENA or others on a local jurisdiction by jurisdiction basis. Based on discussions with attendees at the NENA national convention, it seems that some PSAPs don't want the private call taker to stay on the line, others do.
- 4.9 Question 9, Does Your System Provide Non-Voice Data?**—Again, the respondents were split. If your PSAP or Private PSAP doesn't support non-voice data, why send it? Development of this document and efforts of organizations like NENA to develop operational procedures will help to resolve this issue.