The Development Of Mobile Prototype Systems.

It appears safe to assume that , in the aftermath of successful completion of initial stationary prototype systems , primary attention will be focused on development of mobile prototype systems with emphasis on configurations suitable as propulsion systems for land based transportation vehicles.

Passenger carrying automobiles , being by far the majority in numbers, and of the greatest interest to the majority of the vast consumer population, would,in all probability , be the object of the initial focus. One approach to this initial focus is suggested and illustrated by the Schematic Diagram in Figure 62 on page 246.

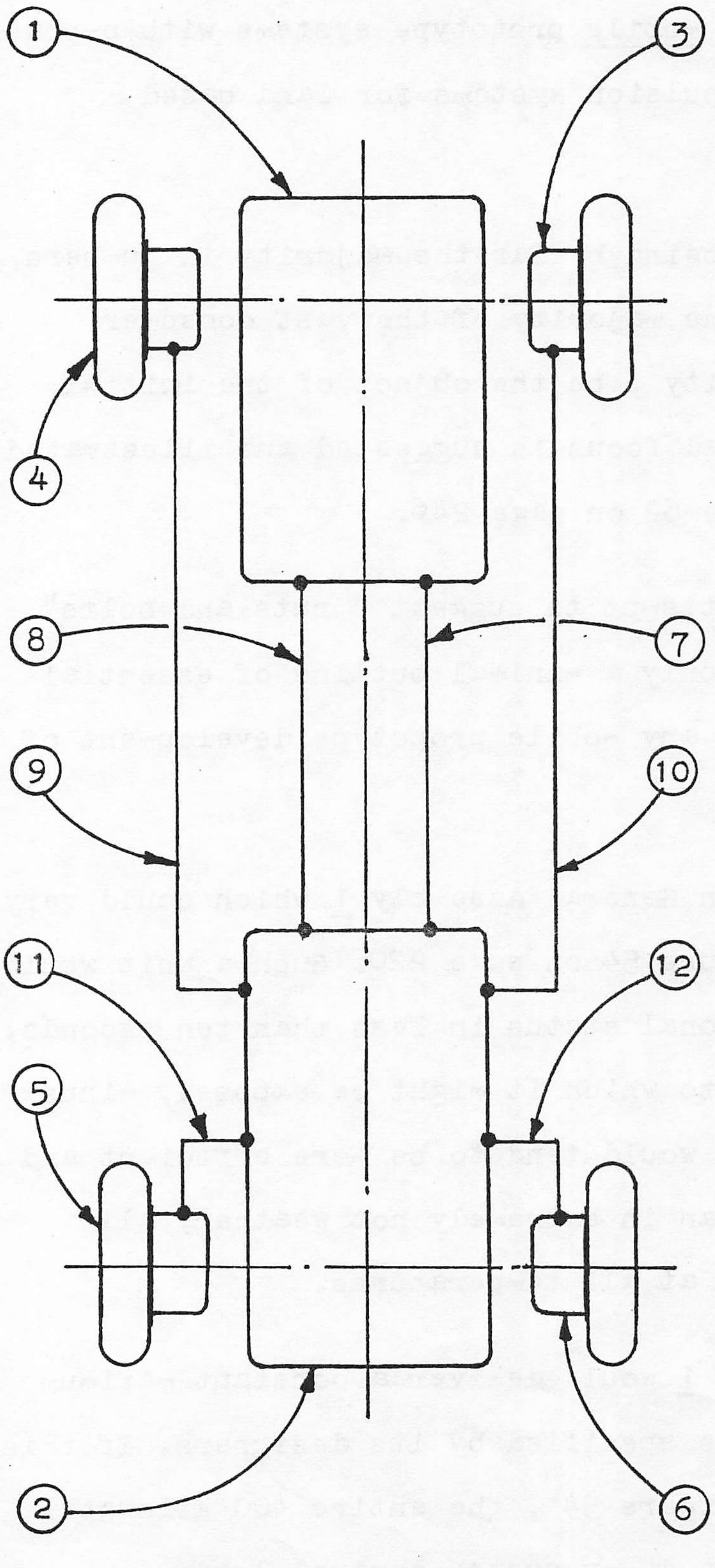
This schematic diagram makes no attempt to suggest " nuts and bolts" design details but rather offers only a minimal outline of essential elements that must be included in any mobile prototype development of this type.

First , there must be a Propulsion General Assembly 1 which could very well be much like the unit in Figure 54 on page 220. Such a unit would be started and brought to operational status in less than ten seconds, regardless of weather conditions to which it might be exposed, minus 50°F. or plus 120°F. In fact , it would tend to be more efficient and responsive in sub-zero weather than in extremely hot weather, all though it would be very effective at all temperatures.

Once it is operational , Assembly 1 would deliver a constant maximum Electric Power Pep continuously as specified by its designers. If this proved to be 400 kilowatt as in Figure 54 , the entire 400 kilowatts would initially be consumed by the dummy system control load.

Figure 62

Schematic Diagram - Automotive Prototype Mobile System.



LEGEND:

1) Propulsion General Assembly, Similar To The 400 Kilowatt Unit Of Figure 54, Page 220.

2) Pneumatic Controls, Pneumatic Compressor And Storage. Electrical And Electronic Controls.

3) Right Front Wheel And Drive Motors Assembly.

4) Left Front Wheel And Drive Motors Assembly.

5) Left Rear Wheel And Drive Motors Assembly.

6) Right Rear Wheel And Drive Motors Assembly.

7) Conduit For Pneumatic Transfer Between 1 And 2.

8) Conduit For Electrical And Electronic Transfer Between 1 And 2.

9) Conduit For Electrical And Electronic Transfer Between 2 And 4.

10) Conduit For Electrical And Electronic Transfer Between 2 And 3.

11) Conduit For Electrical And Electronic Transfer Between 2 And 5.

12) Conduit For Electrical And Electronic Transfer Between 2 And 6.

As vehicle movement required , appropriate portions of that total constant output would be shunted to each of the Wheel And Drive Motors Assemblies , 3 , 4 , 5 and 6. If shared equally , each of the four assemblies would have 100 kilowatts of Pep at its disposal. This would be equivalent to 134 horsepower.

Electric power propulsion offers a unique opportunity to drive and control each of the four wheels seperately , as suggested by the schematic diagram in Figure 62. However , this again would be a decision reserved for the finalizing designers. Elimination of the conventional gear and shaft system driven by one central engine or motor , would seem to be an economical and very practical advantage and computer controlled operational functions would appear to provide the ultimate in vehicle performance.

Location of the Propulsion General Assembly 1 at vehicle front or rear would again be the ultimate decision of the finalizing designers. It would seem likely , however, that all elements of the system would be placed in close proximity to the vehicle main frame and convenient passenger occupancy facilities incorporated above the system in Figure 62.

Of course,there must also be accomodations for the essential control center 2 , containing pneumatic controls, pneumatic compressor and pneumatic storage as well as electrical and electronic controls.

Note that multiple drive motors are suggested for the four wheel assemblies 3 , 4 , 5 and 6 . This would seem like a logical choice of finalizing designers. 100 kilowatts of available electric power could probably be best delivered to the wheels compactly by a cluster of small but very high speed and very powerful electric motors.

There appears to be no significant reason why this same general format could not be applied to development of similar mobile system prototype design and fabrication for trucks and buses of all sizes and types. Consider , for example , the advantages of driving and controlling all eighteen wheels of the popular and numerous eighteen wheeled tractor-trailer.

The same general format could be applied to the development of mobile system prototypes for replacement of the conventional desiel-electric propulsion systems of contemporary railway locomotives. It seems equally certain that similar development programs would produce prototype systems to replace the conventional steam turbine propulsion of ships of all sizes and types.

Of course , over riding all other advantages resulting from the successful design , development , fabrication and testing of all of these prototype mobile systems are the economical and ecological advantages aquired by elimination of fuel costs and environmental pollution.

It is hoped that this consideration of the mobile prototype systems , and the realization of their enormous potential for unprecedented impact on contemporary society's life style , would add a further sense of urgency to early initiation of such development programs , especially to the reader with both the capacity and the resources to do so.

This concludes Chapter Ten of this work which has taken a peripherial look at the potential for adapting the Inertial-Pneumatic Electric Power System to mobile applications. Chapter Eleven , the final chapter of this work, will consider reader reflections,decisions and questions.