COURTESY OF BRITISH AIRPORTS AUTHORITY

Announcing The Departure . . .
Perhaps the most public aspect of the airport operating computer system is the arrival/departure board. These electromechanical devices are constantly updated by the central computer as new information comes to hand

computer control are regarded with suspicion by the public.

A very close parallel to a driverless train system is found in the more sophisticated model railway networks. Each model locomotive has a unique identifier code, called a 'device number', stored in a small microcomputer based on a single chip. The controller sends out signals to each train by modulating the power conducted along the rails in such a way that only one locomotive will be able to decode it. In this way a large number of trains can run on the same layout at any one time under the direct control of the central microcomputer.

The driverless train is feasible because it runs on rails, but the concept is unlikely to be used by road vehicles. Computers are, however, used in road transport, primarily in public transport and freight operations. Here they help schedule and route vehicles, as well as produce timetables — which is an incredibly complex task in a city the size of London, where there is a need to integrate bus, train and underground services into one public transport system.

The problem is to keep just enough vehicles in operation so that passengers will not experience unacceptable delays, while at the same time not use so many as to dissipate operating profits. This is a complex problem in statistics and it was to solve statistical problems that computers were first devised. Another problem that benefits from the application of statistical methods is the routing of delivery vans to minimise the distance covered between 'drops' and the allocation of consignments to each van. An interesting variant of this is to be seen in vehicle despatching — especially of taxi cabs and police cars, which 'cruise' rather than return to base. Each vehicle's location is entered as a street name, which the computer then converts into a grid reference. A request for a taxi or emergency assistance is entered in the same way, and the task of matching resources to requirements is a simple matter of comparing the two according to predetermined rules.

One of the more interesting experiments involving computers in public transport is the 'dial-a-bus' system, now operating in the suburbs of Hanover, in Germany. Based on a fleet of minibuses that follow no set route, the system allows a passenger to call up the central control station from the bus stop, and tell them his destination. The miniterminal (it looks rather like a cash dispenser terminal) then prints out the time at which the bus will arrive (never more than five minutes), the duration of the journey (taking into account the needs of the other passengers) and the fare.

Transportation of goods and passengers accounts for some 20 per cent of all the world's commerce. The use of computers in this area is more advanced than in others, and has undoubtedly contributed significantly to its growth. While most of the examples we have looked at are implemented on mini- or mainframe computers, many of them are applicable to home microcomputers as well. There are a number of software packages available for distribution, scheduling, timetabling and the like, which can have a remarkable variety of applications.

Factory Ships
The shipping industry uses computers far less than other transportation media, but one important applications area is that of containerisation services. Microcomputers play an important part in consolidation (a number of shippers sharing a container), in the organisation and layout of the container terminal and in the loading of the container ship to ensure even distribution of weight

COURTESY OF 'THE MOTOR SHIP'