

Ferritronics Ltd.

Radio communication without voice

Ferritronics Ltd. has developed several tone and digital signalling devices which help to reduce mobile radio traffic and allow greater sharing of the airways.

In the last few years, mobile radio communication has become an integral part of every form of motor fleet and even private cars. This sudden expansion in mobile radio use has spurred electronics firms to devise systems to reduce overcrowding of the airwaves. Ferritronics Ltd., of Richmond Hill, Ontario, with the assistance of an NRC IRAP (Industrial Research Assistance Program) grant, has developed several tone and digital signalling systems which will help to alleviate the problem. Used as adjuncts to mobile radios, these new systems can convey certain standard messages without voice transmission, thus speeding up communication and allowing greater sharing of the airwaves.

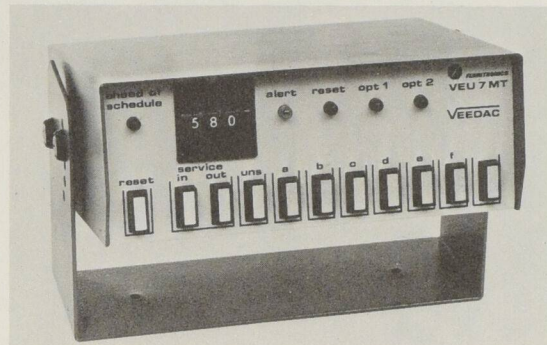
"Ferritronics made its inroad into the field of tone signalling by developing a frequency filtering device called an 'active filter'," explains president Ray Hogue. "The filter was incorporated into 'tone modules' which are used in combination with existing mobile radios. The module, a signalling device which generates a low frequency tone, is capable of recognizing the same tone. Each fleet sharing the airwaves has its own tone frequency. When one unit transmits, the radios of all the cars in that fleet are turned on while the other fleets receive a busy signal and, therefore, do not overhear the ensuing conversation. This, in effect, creates a private channel for each fleet."

After their initial success with tone modules, Ferritronics developed a new digital signalling system. A digital decoder and number identifier were built into the system so that radio communication could be conducted with only one person without interference or interception by others. An automatic number identifier immediately reveals by digital display which operator is calling the central dispatcher. This system has been well received by several taxi firms because it prevents abuse of the mobile radio communication system by individuals who prevent others from communicating by noise or jamming their microphone switch.

Another Ferritronic's invention aimed at reducing voice communication is the "status monitor". It is an elaborate tone signalling device con-

sisting of a panel with up to nine buttons, each one representing a particular function or status. This system is particularly useful for fleets such as cement trucks where the status of the vehicle is crucial to prevent waste of material or time. The system contains a switch panel with buttons which, when pressed, indicates automatically to the central office that the operator is out of his truck, or unloading, or en-route, or any other function involved in cement haulage. When linked

nalling units have been placed in each bus and they are in communication with a computer at the terminal. The buses are polled by the computer every few seconds to determine where the bus is and what it is doing. The mileage is automatically transmitted to the computer which calculates the bus' progress along the route. When a passenger calls for information, he or she also dials digits which code the route and nearest bus stop. The computer, when informed of the route and bus



Herbert J. Holton, Ferritronics Ltd.

Two types of status monitors which can communicate the operator's status to a central dispatcher without voice. Each vehicle in a fleet is simultaneously monitored on a TV screen at the head office.

Ces deux types de moniteurs de fonctions et de statut peuvent communiquer le statut du chauffeur à un bureau central sans communication verbale. Tous les véhicules d'une même flotte sont surveillés simultanément à l'aide d'un écran cathodique situé au bureau central.

to a computer, the central office can monitor the exact status of each of its vehicles on a television screen.

Ferritronics has also developed a system which allows supervision of equipment in remote locations. By using a two-way signalling device a tone can remotely turn-on a pump which then activates its own tone module and signals the central office that the operation has been completed.

For anyone who has had to wait for a late-arriving bus, there is some consolation for the future. In Mississauga, Ontario, a federal government-funded test program called "Easy Rider" is using Ferritronics equipment to make bus travel more pleasant. Digital sig-

stop, does split second calculations and tells the person of the arrival of the next two buses.

"By developing such innovative products and maintaining strict quality control, Ferritronics has quadrupled its sales in the last five years and increased its exports from 18 to 75 per cent," says Mr. Hogue. "The single most important event that spurred business was the intensification of research supported by NRC's IRAP grants." The company expects to be able to fully support its own research and development when the current IRAP program is completed. □

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