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REMOTE AREA COMMUNICATIONS

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The recent deaths of Aboriginal groups travelling between remote communities has prompted an investigation into the cause of these deaths. One of the main reasons for the deaths was the failure or non-existence of communications systems so that the movement of the people was not known and rescue efforts were late to start. In an age of rapidly improving communication systems, the needs of remote areas are still being neglected. This paper discusses the options available and the problems with existing systems. A proposal is developed for a remote network.

INTRODUCTION

Since the report of the Western Deserts Homeland Movement in 1984 the issue of accessibility and safety in remote areas has been of concern. This report recommended that hand pumps be placed at regular intervals along roadways. Telecom has recently proposed the placing of telephones at regular intervals along remote roadways. Then the issue arises as to which government department will fund such a project and continue to pay for maintenance.

Another problem is that the new communities settling quickly and there is no existing up-to-date data base on the location and size of communities. This problem, combined with the general mobility of these communities means that more sophisticated systems such as Telecom repeater systems are slow to be organised. Hence any communications service will have to be a cheap, mobile system in the first instance, with a more sophisticated system later established as backup.

Radio communication is already used widely by communities and vehicles, either radio to radio or through the Royal Flying Doctor Service (RFDS). In some communities more modern radio to phone interconnects have been installed. This radio network is used by communities to keep regularly informed of each others movements and can be used as an emergency system if people do not call in at pre-arranged times. However the integrity of such a system could be improved, and a backup system is vital for ensuring communication is always possible.

EXISTING SYSTEMS

HF Radio

Most vehicles and communities that are well established have a HF radio system, manufactured by Indo-Pacific, Codec or Barrett Communications. These radios have a range of at a minimum 100 kms depending on weather and traffic.

These radios are already used for regular communication between communities and advance warning of travel. However the allocation of bands has been unplanned and may not match community boundaries. Also the RFDS stations are not staffed for 24 hours, so long distance communication is limited to select hours. However radios can have fitted an RFDS emergency tone call encoder so that when the local base is unstaffed the tone will be received automatically and retransmitted to the central RFDS base in Perth.

Through remote connection bases, radio users can link into the Telephone system. This enables the radio to substitute for the telephone until Telecom installs systems in the area. Such interconnects are cheaper than a complete telecom installation but still require a large injection of funds into the region.

The telecom network is slowly being extended to remote areas, but the department stipulates some guarantee of permanency of a settlement before they will extend services to a community. That is there must be some proof of longterm lease or ownership of the land, which many Aboriginal groups have not yet achieved. Telecom claims this requirement is because of the cost of the system is high and it takes time to get the equipment organised and out to the area.

Options are :

- a. Public Telephones for the community, later leading to private phones. This involves a link to the Telecom network being set up, which is expensive. Microwave encoded signals are used as links between remote bases and main network thus avoiding long telephone lines being laid. However in this manner one community can be linked in, while another nearby community may not reach the base station and still remain isolated.
- b. Mobile phones, which require a local receiver base and are very expensive.

Beacons

At present one way communications systems, or beacons, have only been developed for aviation and possibly shipping systems and may not be compatible with the land network. The beacon is switched on in an emergency and the position of the beacon can be determined by two ground bases, or satellite. However this one way system can create unnecessary rescue work if for example the problem is a shortage of petrol or water which could be supplied from a nearby community.

Global Maritime Distress and Safety System

It is rumoured that this system is being phased out, and the RFDS will take over this service. This is not a suitable system to link communities into in such a state of flux.

Mobilenet

This is the newest communications system under development. It has yet to be set up, using the wide coverage, reliability and power of satellites. Any use of this system will require linking users to an earth base station, which is a costly system. Like mobile phones, this option is too costly at present.

Other Satellite Services

Competition from other non-AUSSAT services may provide a cheaper option, but it is unlikely as these systems are focussing on the lucrative business market.

OPTION

Radio is clearly the basic option for remote areas, but how it is used and developed is the issue. The existing system should be rationalized in terms of frequency allocation and usage patterns. Training in usage and maintenance of the radio should be done thoroughly in all communities. in remote areas. More hard wearing units should be developed to avoid any common breakage problems.

A network should be developed like that used at present through RFDS bases. However, as the Royal Flying Doctor Service is planning to move to one central base in Perth such a network could be based around regional community centres. A more decentralised system would place responsibility for safety in the hands of the Aboriginal people who know each others habits, and the RFDS could remain as a backup when other bases are not listening in.

As a backup to a radio system and as a development towards future linking of remote areas into the Telecom network, telephones should be installed in all existing communities as a matter of urgency.

Radio

More durable radios are required. In particular a problem exists with rapid failure of the existing microphones which generally sits on the floor and gets filled with dirt or crushed. A retractable system would avoid this problem. Also training in radio use and maintenance for all communities would be a major step towards safety.

Telephones

Telecom is proposing a maintenance training session to be based at various centres in Australia. Aboriginal and other remote users could be trained in basic maintenance of Telecom facilities. As well as the self-monitoring systems which exist on the Telecom network this will ensure telephones are likely to be functioning when required. This would also solve the problem of who is responsible for the maintenance of public equipment for example roadside phones and reduce maintenance costs.

CONCLUSION

While radio based communication is not entirely satisfactory given the advanced state of Telecom systems in Australia, the issue of the large land area to be covered is clearly a problem. Until the telephone technology is simplified or improved in range, the HF radio is the most feasible remote area communication available. For security however there should be backup system such as regularly spaced telephones along roadways. The issue will be which government department will fund this.