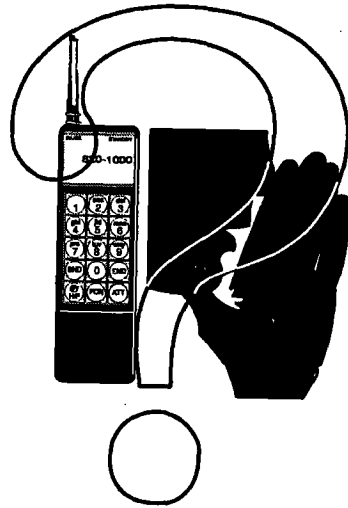


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Everything you wanted to
know about cellular
radiotelephones and
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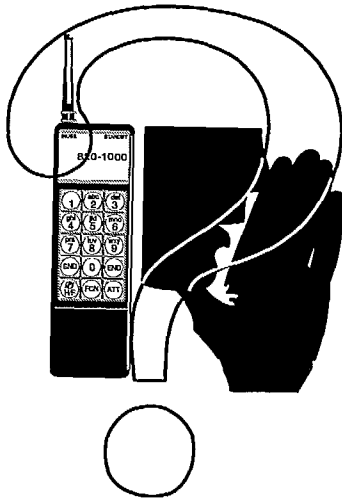
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...but were afraid to ask!

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Radio in Canada

In Canada, there are two main types of radio communication:

- o Broadcasting - intended for reception by anyone (AM and FM radio, TV).
- o Two-way transmissions - intended for specific parties (paging, cellular radiotelephone, taxi, police radio etc.)

Although radio technology today is very complicated, radio signals of all kinds can be easily received using simple, widely available receivers. Cellular radio stations for example, can be received with the UHF tuner on an older TV set. Consequently, by its very nature, radio does not lend itself to private communications.

Regulation

Since the earliest days of radio, governments have recognized the need to control the use of information transmitted by radio. Station licensing and operator certification are two methods used to control the use of radio. At one time, all radio apparatus, transmitters and receivers, broadcast and private - had to be licensed by the federal government. Eventually, broadcasting receivers (radios and TVs) were exempted from licensing, but most forms of two-way radiocommunication still required a licence. Today, many different types of apparatus, including most receivers and some transmitters, are exempt from licensing.

The other method of controlling radio was to regulate the radio operator. In the early days of radio, all operators were certified. In 1906, the first *International Convention on the Use of Radio* outlined the operator's responsibility to protect the "Secrecy of

This enhanced level of privacy can be obtained through "encryption" or "scrambling" of the signal.

Encryption is a technique that electronically "shreds" a radio signal into many pieces. The pieces are then "shuffled" so that the message can no longer be understood. Only the persons authorized to receive the signal have the "key" to the sequence in which the message was scrambled. Without the "key", it is extremely difficult to decode the message.

There are various methods of encryption. With the higher level systems, it could take powerful computers years to find the "key" to decode the message. When shopping for a security system for your communications, keep in mind that the more sophisticated systems will usually be more expensive than the simpler, less secure systems.

Most cellular phone companies now offer encryption systems as an option. Encryption systems can also be added to other radio systems.

What if I want to listen?

Legislation alone cannot prevent people from listening to the radio signals of others. However, if you do intercept someone's radiocommunication, remember that it is an offence under the *Radiocommunication Act*, to divulge or use the information obtained.

Certain types of scanner receivers are now subject to regulation². Any scanner capable of receiving digitally modulated transmissions must be licensed.

²For more information, refer to RSS-135 *Digital Scanner Receivers*

Communications". Early radio operators were required to take an oath of secrecy. Today, almost everyone operates radios of one sort or another, and certification is only required for professional radio operators and "hams".

Currently, under the *Radiocommunication Act*, while listening is not prohibited, it is an offence to divulge or use information obtained from non-broadcast radio signals without the permission of the people who sent the messages.

As well, the *Criminal Code* now clearly makes it an offence to intercept some forms of radiocommunications maliciously or for gain. For example, *radio-based telephone communication*¹, carries with it an inherent understanding that the conversations are intended as private conversations. These communications are, by law, afforded the same considerations for the protection of privacy as other land-line based telephone services. These provisions will normally be enforced by police agencies, just as they would for any instances of illegal invasion of privacy (unauthorized wiretaps, eavesdropping etc.)

Policy

How can I protect my privacy?

Since modern radio technology makes it relatively easy for anyone to receive all radio signals, there can be no guarantee of privacy when using radio. Some people have compared radiocommunication to opening a window and shouting across the street.

Radio users who want *a degree* of privacy in their communications can take certain precautions to protect the messages they send.

¹"radio-based telephone communication" means any radiocommunication within the meaning of the *Radiocommunication Act* that is made over apparatus that is used primarily for connection to a public switched telephone network.

Radio was invented to send information from one person to another. When both people are willing partners in this exchange of information, there's no problem.

However, when a third person gets involved without permission, and intercepts the signals by accident or on purpose . . .

that's another story.

For more information on this subject, or any other question concerning radio, contact your local Industry Canada office. The number is listed in the Government of Canada pages of the telephone directory under "Radio Interference".

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