

# Satellite communication and broadcast journalism

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THE satellite is an electronic mirror that is aimed earthward from a specific point in space. The satellites utilise radio waves operating in the microwave band to relay signals which are "up-linked" from earth and "down linked" back to the earth.

Satellites do one or both of two things. Observation satellites, of which a particular form is the "spy" satellite, observe events on earth and report these to their controller. Communication satellites, of which a particular form is the telecommunication television satellite, relay signals from one point on earth to another. Reception of satellite signals just requires a fixed dish aerial, and an electronic 'black box' for decoding and amplifying the signals. Communications companies use satellites because a single satellite channel can carry much more communications traffic than a terrestrial link such as a telephone cable. Television channels can therefore easily be distributed by satellite, nationally or internationally, to operators of local cable television systems via a large dish aerial.

The world telecommunications authorities and international record carriers anticipated a communications satellite revolution, on both national and international levels. All of these dreams were quickly fulfilled. By the mid-1960's, hundreds of satellites had been launched, and a half dozen countries, including USA, former USSR, France, China, India and Italy were operating their own satellite systems. National pride, the initial motivation, soon gave way to economic necessity as both the developed and Third World looked upon satellite technology as a resource of new wealth and riches.

The first television channel to be distributed by satellite to local cable operators was established in the USA in 1975. Television networking is sophisticated and expensive. One television channel consumes a spectrum that could otherwise carry 2,000 telephone calls simultaneously.

Now over fifty communications satellites are circling the globe, providing hundreds of channels for television programmes. A dozen languages and as many cultures are being represented.

The electronic "mirror" has made the whole world a global village. Over fifty satellites are circulating over the globe, providing hundreds of television channels, to millions of viewers across the world.

## Broadcast journalism

Broadcast journalists have become accustomed to technological change. They have accommodated their working habits and techniques to suit, successively, the switch from black and white to colour, from film to videotape, the arrival of live transmission, and the advent of computer-assisted electronic graphics and titles. But none of these technological advances encompasses such thoroughgoing changes of environment and procedure as the coming computerisation process.

Television is quite different from radio. Experts believe that there will be three kinds of technological advances which, in greater or in lesser measure, will alter the nature of TV journalists' work both in the studio and in the field.

The first advance, already nearing perfection, involves the change over from the present analog system of television to the new digital system. The analog TV signal is produced by waves whose frequency and intensity re-create a picture analogous (similar but not an exact replica) to reality. The system entails a certain amount of distortion and picture loss, including the TV cut off phenomenon.

The digital system, produced by computers (what else?), re-creates a picture exactly by breaking it down into digital information that is then reconstituted at the point of reception. No distortion, no picture loss, no more TV cut off problem.

Cameramen and tape editors will thus be sure that what they see will be the same as what home viewers see, and they will select their shots accordingly. Because analog and digital systems are incompatible the home TV set has to be able to "read" the digital information. It will take many years before the new system completely displaces the old one. The second predicted major technological advance is the perfection of a new generation of compact lightweight videotape cameras and recorders.

According to TV technology experts, the next "plateau" will be the perfection of 8 mm (also called "quarter-inch") videotape gear, with a cassette about the same size as a current audio cassette. Such small format video gear already existed, but its quality was generally poor, not even good enough to satisfy most amateur enthusiasts. Inexorably, however, the technology will improve, and the experts say, the day will come when both from the technical and financial viewpoints stations will no longer be able to resist, especially if, as seems likely, their three-quarter-inch gear is on its last legs at the time.

This third predicted advance in TV technology brings us into what only a few years ago was considered "star wars" territory. The development of powerful transmitters in TV technology will permit live remote broadcasting anywhere, any time.

Soon, the experts predict, will come the day when a TV news reporter, a camera in one hand, a microphone in the other, and a mini transmitter strapped to his or her back, will be able to report live via satellite from anywhere in the world, to anywhere in the world, anytime, day or night.