GENERAL SCIENCE

Help Quiet Commercials

The public can help eliminate noisy commercials by informing the Federal Communications Commission when a commercial seems louder than the rest of the program.

➤ DOES THAT dog barking for his biscuit grate on your ears? Does that female voice praising beer awaken your sleeping child? Does that commercial jingle jangle?

Then here is what to do:

Take down the name of the commercial, the time of broadcast, and a few words on why you think the commercial is louder than the rest of the program, then send this information to the Federal Communications Commission, which is doing a survey on the problem.

Listeners can help a lot in quieting down those blaring commercials—mainly by sending information to the radio stations, industry and responsible organizations who are trying to gather specific details.

You may feel that a commercial is loud, and a sound meter may record high levels of noise, yet much more information is needed to specify exactly what makes a noisy commercial objectionable.

Sound can be measured technically by an audio voltage meter, yet loudness can be a subjective or psychological measure of sound. For instance, a sudden noise may sound very loud because there has been a silence before. A cough in a church may sound thunderous, yet that same cough on a busy street corner is hardly noticeable.

Several techniques can be used to increase the loudness of the hard-sell commercial. A "volume compressor" that makes sounds more intense can make a whisper sound like a shout.

An eager announcer who wants to pack as much attention-getting jingle into the few seconds allotted him may speak his piece in rapid-fire delivery, or cram more sounds into the script. Although the volume of sound may not go above the FCC-specified modulation limit, the impact of noise occurs more often, and the commercial seems louder.

A rapid series of gunshots is much more noticeable than just one shot, although they are all of the same modulation.

The FCC has issued a warning to radio stations and industry on loud commercials, asking them to review such practices as rapid-fire delivery and volume compression, and to discontinue those found to result in loudness.

Among the questions the FCC asked the general public were:

1. To what extent do you feel there is objectionable loudness in commercials, compared to other program material?

2. To what extent do you find objectionable loudness in other programs, such as public service announcements?

3. What do you feel in detail are the causes of objectionable noises in commercials?

Industry was asked to what extent speech processing, compression and limiting are use in pre-recorded material, and, if devices are used, to what extent they are intentional. The FCC has also requested comments on how loudness could best be controlled by the FCC, and if research should be undertaken to create equipment and techniques to quiet the noises. Replies may be sent to the FCC, Washington 25, D. C.

• Science News Letter, 83:118 February 23, 1963

SPACE

Talk Through Space

➤ WORLDWIDE communication by telephone, radio and teletype will flow mostly over submarine cables at least through 1965 despite the advent of communication through space. Starting that year, communications satellite systems such as the Syncom will compete with cables.

This is the primary conclusion of researchers at the Rand Corporation in Santa Monica, Calif., who studied international telecommunications through 1975.

Syncom, the high-altitude communications satellite, was launched from Cape Canaveral on Feb. 14. The 150-pound Syncom was designed to relay radio and telephone conversations between North America and South Africa from a synchronous or 24-hour orbit. (See SNL 83:86, Feb. 9, 1963.) Contact with it, however, was lost five hours after launch and had not been recovered as of Feb. 15.

Overseas telephone calls will increase 22% each year through 1965 and the only certain way this challenge can be met is via the conventional underground telephone cables.

The year 1970 will mark a turning point for the cable and satellite systems.

In 1970 a space satellite system is expected to be in operation. A regional stationary system of space satellites of the Syncom type is the most likely means of space communication.

With the much greater flexibility offered by space communications, the year 1970 is likely to see increasing use of space for international communications. Many more channels will be possible because of the bigger band width in space communication. A channel to carry TV through space calls for a capacity of 600 two-way phone calls. Telstar and Relay already have TV capability. Syncom, now limited to radio, is expected to have TV, too, by 1970.

Here is what is likely to take place between 1965 and 1970. Existing rocket-launch facilities will place satellites of the Telstar and Relay types in orbits about 6,000 miles above the earth. People will then start communicating via telephone and radio, using space instead of the submarine cables. The space system will start taking in some revenue.

By 1970 the high-altitude satellites like Syncom will be in operation. Just three of these satellites placed at key spots 22,300 miles out in space will cover most of the earth.

By 1975 income from the high-altitude space satellites will be high. The system is due to pay a big profit return once its three Syncom-like satellites have stayed in continuous orbit for three years. Then they will have more than repaid the high cost of launching them.

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SPACE

Self-Tuning Transmitter Clarifies Space Messages

➤ A NEW SPACE transmitter will not only send a message to earth but simultaneously pick up vital information about static disturbances the signal meets in space, then readjust itself for a clearer message next time.

The channel information, picked up as the signal travels through space from the satellite, is immediately relayed back from the earth receiving station to the satellite transmitter, which then automatically adjusts itself for finer tuning and reduced interference.

The transmitter and receiver device, developed by Purdue University, Lafayette, Ind., research engineers under the direction of Dr. John C. Hancock, has been successfully receiving and sending messages over a distance of 290 air miles across the earth, from the Purdue campus to Cedar Rapids, Iowa. Researchers are working on still finer tuning of the signal system.

The next step will be a test under actual space conditions. The project is being aided by grants from the U. S. Air Force, the National Science Foundation and the National Aeronautics and Space Administration.

Contrary to some theories, the "free" space outside the earth's atmosphere is not so free from distortions and interferences to passages of signal energy. Many of the disturbing communication conditions found on earth are also present in space. Severe fadeout and fluctuations have been noticed in spacecraft-to-earth communications.

Signal power from the Pioneer V suffered extreme fluctuations before failure at a distance of about 22 million miles. Severe fading of communications occurred even at a relatively short distance, from the Explorer VI circling the earth with an apogee of 26,000 miles.

Big and errant "globs" of ions may be floating in outer space to cause the signal distortion, researchers believe. More likely, there are irregularities in the ion density, or changes that are influenced by the weather, the time of day and sun spot activities.

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