

## Two-Way Radio for Extension

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*The idea of using two-way radio as a communication tool for Extension is fairly new. Swoboda recently surveyed all the states and learned that 60 per cent didn't use two-way radio at all, another 35 per cent used it on a limited basis. Only three states are attempting to use two-way radio on a statewide basis. Swoboda evaluated the system used in Nebraska and reports his findings here. He feels that a statewide radio network will extend the "specialized expertise of the state and area specialists to the total county staff. . . ."*

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Nebraska's Cooperative Extension Service has limited resources, both human and economic, to develop and carry out an ever expanding program of public service. All Extension personnel have experienced an increased work load. However, this increase has been especially felt by state and area specialists, agents (particularly in high population counties), and personnel involved in multicounty activities.

To ease this situation, Extension administration looked to the broad area of communication and its new channels for help. The objective was to find new ways of improving the effectiveness and efficiency of Extension's communication, so the present staff could offer more

services to more people.

One communication technique Nebraska uses on a statewide basis is the inward and outward WATS lines (Wide Area Telephone System).<sup>1</sup> It provides special rates for long distance telephone lines, which increase the personal contact among all levels of Extension staff.

The latest communication device used by Nebraska's CES is the two-way radio. When complete, it will link the total staff into a statewide two-way microwave network.

### **CES National Radio Communication**

Because of the "newness" of two-way radio communication to

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Extension, a brief mail survey was conducted in late 1969 to determine the level of interest and/or development in the use of two-way radio communication by CES. Forty-three of the 52 Extension Directors answered the survey. Response to the survey indicated that the majority of states (60%) had no two-way radio communication system. Another 35 per cent indicated that two-way radios were being used. Radio coverage ranged in size from an independent county basis to three or four county areas. However, none of these systems was designed as a statewide network.

Two states reported that their Extension Services are in the early stages of developing a statewide two-way radio communication network. These two states, like Nebraska, are planning to use transmitter towers already established in their state by another university or state agency. A majority of the states contacted indicated an interest in two-way radio communication and desire for information on the practical operation of the system.

Substantial progress on Nebraska's CES state network has been made. It began as an experimental communication project in 12 northeastern Nebraska counties. The idea for this system was conceived by John L. Adams, Nebraska CES Director. His basic concern was the coordination of all levels of operation in Extension. The two-way radio system was developed primarily because this type of communication was needed, and mobile

radio-telephone service wasn't available in Nebraska on a statewide basis.<sup>2</sup> At present all or a portion of 50 of Nebraska's 93 counties have radio communication network availability. However, so far the system hasn't been fully implemented in a majority of these counties due to lack of funding.

Since the Extension communication network has the advantage of using the master microwave towers developed for Nebraska's statewide emergency communication network, full use of a statewide Extension network will be determined by the progress of this system.

The latest developments have been the installation of base radio stations (control links) in five agricultural departments and the Extension administration headquarters at the College of Agriculture and Home Economics in Lincoln. In addition, five mobile radio units located on campus are assigned to the various subject-matter departments with control links for use by state Extension specialists. Also, the radio network is connected to the University of Nebraska telephone switchboard, making possible contact among all radio units and state Extension personnel on campus. This will provide immediate access to state personnel when county and area radio sets are installed—either radio-to-radio or radio-to-telephone.

### **Study Conducted**

A study was conducted, in the northeast area mentioned above, to

determine the reactions and attitudes of the Extension professionals (14 county agents and 10 area personnel) toward the system. Data for the evaluation were collected by a survey questionnaire, an opinionnaire designed to measure attitude toward the system, and by monitoring the system at various times to determine how the network was being used.

All personnel contacted, with one exception, reported they were using the radio system and indicated an average of 25 to 30 uses per month per staff member. Area personnel used the radio more frequently than county agents. This was expected because the area personnel servicing county and area Extension program needs coordinate the total area at all levels, and therefore have an increased number of contacts. Secondly, the area personnel had the availability of mobile two-way radio units. This allowed contacts with professional staff throughout the area and with office staff to carry out routine office procedures en route.

A meter was located at the northeast area communication base tower to record the total "air time" used. Readings for the first 17 months of the Extension network's existence indicated 358.6 hours of radio air time used. Thus, the 24 Extension professionals with access to the system spent about 21 hours per month in radio communication.

The length of calls via the two-way radio was generally three minutes or less, with the remainder sel-

dom over five minutes. Voice quality ranged from average to good, depending on weather conditions and transmission locations.

Types of calls most commonly made via the two-way radio included scheduling for Extension programs, administrative questions, and requests for technical information from specialists. Area personnel with the availability of mobile units also ranked routine calls to their office staff as a major type of radio transmission.

The statements checked on the attitude opinionnaire were weighted and scores placed on a continuum from highly unfavorable (1.07) to highly favorable (6.27), with the median 3.67. The range of scores for the 24 Extension personnel surveyed was 3.5 to 5.7. The average attitude score for all personnel was 4.85, indicating a favorable attitude toward the two-way radio network.

### Unique Situations

Finally, staff members were asked to list particular situations in which the two-way radio system has been "uniquely advantageous" over other communication channels. County staff mentioned two unique features: (1) the ability to get immediate answers from area staff, even when area staff were in their autos and (2) the ability to bring a specialist into a conversation with a client in the agent's office. In addition, the ready access of the system and the "party line" feature that allowed multiparty conferences for

program planning were important time-savers.

Mobile units helped area staff save travel time. Extra trips were eliminated when there were last-minute meeting cancellations as area staff were contacted en route. This feature was especially appreciated during the severe winter weather that forced Extension to postpone or cancel many activities. By using mobile units, area personnel can make personal contacts to plan and schedule, thereby converting otherwise unproductive travel time into productive use. Area staff also listed "better servicing of county personnel" as a definite advantage of the radio network.

### Some Problems

No system of communication is without problems. However, the problems pointed out by the staff surveyed were mostly mechanical. Maintenance was required more frequently than expected and signal loss was experienced in certain fringe areas and under certain weather conditions. Many of these problems will be corrected with

more experience and technological improvements in two-way radio equipment.

### Importance for Extension

Rapid and effective communication is vital to any organization and especially to Extension with its widely based staff. The radio communication network will make it possible to rapidly extend the specialized expertise of the state and area specialists to the total county staff and under an increased variety of situations than present communication channels allow. Better communication in planning and coordination will benefit not only the Extension staff and Extension as an organization, but provide increased service to Extension's clientele.

### Footnotes

1. Donald W. Swoboda, "New Use of Phone Communication," *Journal of Cooperative Extension*, VI (Spring, 1968), 15-22.
2. John L. Adams, "How to Quicken Extension's Reflexes," *Farm, Ranch, and Home Quarterly*, XIV, (Winter, 1968), 8-10.