

Heart Activity Developed by USDA Radio System of Recording Stock

An experimental system of recording the heart pulsations of farm livestock by radio was described by U. S. Department of Agriculture engineers at the annual winter meeting of the Institute of Radio Engineers in New York City.

The system uses a subminiature (40-ounce) frequency-modulated, battery powered transmitter to send a record of electrocardiac voltages. It is anticipated that the apparatus may prove a

useful to biological scientists as its more refined counterpart, the electrocardiograph, is to medical scientists.

The radio cardiograph was designed by J. C. Webb, Lowell E. Campbell, and James G. Hartsock of the Farm Electrification Research Laboratory, Agricultural Engineering Research Division of USDA's Agricultural Research Service. It was built, in part, under contract with the U. S. Air Force and with the cooperation of USDA animal husbandmen.

The system is built of components available in normal commercial outlets but used with limited modifications. It is divided into two parts: a transmitting section and a receiving and recording section.

The transmitting section consists of a transmitter and a low-level amplifier with an adjustable gain of 60 decibels and a frequency response of 3 to 4,000 cycles within two decibels. The transmitter operates on a frequency of 166.475 megacycles and has a range of 150 feet.

The receiving and recording section consists of an FM receiver, an oscillograph and a heart-rate meter.

The radio cardiograph can be used on both animals and humans but there are certain limitations to its use, according to the engineers. Although it will give excellent results on subjects while they are moving around, their movements should be restricted to walking or simple limb movements. If muscle movement becomes too intense

More Market Seeking Needed, Fat Studies Desired, Committee Says

Research to expand present markets for meat and meat products, especially hides, to study the role of animal fat in human nutrition, and to develop more efficient livestock breeding practices was urged by the U. S. Department of Agriculture's Livestock Research and Marketing Advisory Committee at its annual meeting in Washington, Feb. 17-19.

In the area of marketing research, committee members called for a study to develop new markets for hides and leather. This work would provide an economic analysis of trends in leather use and the effect of synthetic materials on traditional leather markets, the committee said.

New research to evaluate quality in pork, new studies of the use of antibiotics, radiation, and inert-gas packaging to preserve fresh meats, and consumer-opinion analyses of attitudes and preferences concerning both meats and leather were also cited as high-priority needs in marketing research. The survey of opinions on leather, committee members noted, should put particular emphasis on leather in wearing apparel and attempt to determine consumer attitudes regarding maintenance and care of leather

the cardiac voltage will be completely blocked out.

Placement of the electrodes is very important in receiving a good cardiac signal. Used in experiments with swine, the recording apparatus is carried on the backs of the animals.

garments.

Expanded swine and beef breeding programs and preliminary work on a national swine improvement plan similar to the Dairy Herd and Poultry Improvement Programs now underway are the most urgent production-research needs, the committee said.

Beef-breeding research has been underway for a number of years, and many stocks are now reaching a stage of development where thorough performance tests in top crosses and line crosses are needed to realize the fullest benefit of the work, according to the committee.

In swine breeding, more studies of meat-type hog production are required. Besides backfat thickness, factors directly concerned with amounts of lean musculing need to be given special study.

Committee members also urged more research on the development of new chemical and environmental measures to control parasites and pests of food animals.

The role of fat in human nutrition should be studied as speedily as possible by USDA's home economics researchers, the committee indicated. Knowledge of the relationship of amounts and types of fat to the metabolism of another nutrients and desirable upper and lower limits of fat intake are especially needed. New, comprehensive data on the fatty-acid content of foods is also a top home-economics research need, the committee said.

In the field of utilization research, the committee cited the

following high priority needs: (1) more investigations of meat composition and microbiology related to processing, and (2) expanded studies of fat-derived products suitable for industrial use.

Marketing service work regarded by the committee as meriting high priority attention includes (1) expansion of the quarterly reports of cattle on feed, now issued in 13 states, to include a number of additional cattle-feeding states, and (2) expanded analyses of data on measurements and yields of beef cuts to determine the relationships of grade, weight, conformation, and finish to yield of cuts.

Joe B. Finley, Callaghan Ranch, Encinal, Tex., chairman of the committee, presided. Dr. L. M. Hutchings, chief veterinarian, Indiana Agricultural Experiment Station, Lafayette, Ind., was named vice-chairman.

Other committee members are Charles Bauer, independent meat dealer, Cincinnati, Ohio; Thomas Bernard, swine producer, Sabina, Ohio; George W. Bible, manager, Mountain Cove Farms, Kensington, Ga.; G. F. Chambers, president, Cascade Meat, Inc., Salem, Ore.; Eugene P. Forrestel, beef-cattle producer and cooperative representative, Akron, N. Y.; Clifford P. Hansen, beef-cattle producer, Jackson, Wyo.; Dr. Wesley Hardenbergh, president, American Meat Institute, Chicago, Ill.; Dr. H. E. Kingman, Jr., assistant executive secretary, American Veterinary Medical Assn., Chicago, Ill.; and Wilbur L. Plager, secretary, Yorkshire Club, Blairsburg, Iowa.

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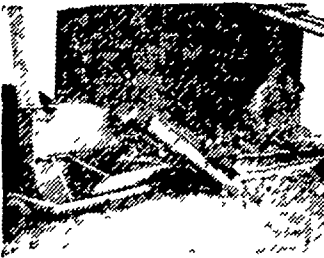
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