AERONAUTICS

Television Replacing Phone In Air Traffic Control

➤ TELEVISION IS coming to the aid of the controllers of air traffic at London airport and the general area in a plan soon to be tested. Television equipment will be used to flash messages and maps between ground radar operators and the traffic control officers.

It is expected that these televised messages and maps will help in the task of speeding up air traffic control in this now congested section. The traffic control problem at London airport is becoming increasingly difficult with the increasing traffic and the growing organization now needed to handle it. With jet-powered airliners promised for the near future, the problem will become even more difficult.

For efficiency in directing air traffic, several control stations in the area must keep in almost constant touch with each other. Included in this team is London Radar, which covers the whole area of southern England. Touch is now maintained by telephone. Delays and errors occur because at busy times the line is saturated. The television method is expected to eliminate such delays and errors.

Especially simplified television equipment will be used. The type is known as the Mullard Electronic Telescribe. It has a glass plate at one end on which a message can be placed or written. A simple television apparatus at the other end screens the message which is then flashed across the airport area from one controller to another. The equipment will be able also to pass to the various control centers the information appearing on radar screens in stations in the network.

Science News Letter, December 15, 1951

PHYSICS

Physics Gives Helpful Hints for Homemakers

➤ MANY HOUSEWIVES would be surprised to learn how much of the science of physics they are using in their daily work around home and kitchen.

Some of the tricks they may have learned from grandmother are applications of physical principles, though grandmother may not have known the physics back of them. And every girl who expects to keep house some day could make things much easier for herself if she takes a physics course in high school, in the opinion of James B. Davis, physics teacher of Ardmore, Pa.

Mr. Davis gives the following "Kitchen Physics" in a bulletin from the Grocery Manufacturers of America:

Eggs: There are times when a homemaker may inadvertently mix some hard-boiled eggs with her fresh eggs. Having been informed in her physics class, she will know that by spinning them she will be able to separate them. A hard-boiled egg will spin very readily, being one mass, while a fresh egg being of two different liquid masses will hardly spin at all. This is an illustration of inertia.

Cooling: The uninitiated would not know that a saucer of ice placed on top of a pitcher of liquid will cool it in a surprisingly fast time. In convection currents hot air rises, cold air will fall. The old fashioned ice box had the ice placed in the top of the cabinet.

Tea Kettles: A roughened, dark-bottomed tea kettle may not be the pride and joy of an efficient housewife, but it is a better absorber of heat than a bright and shiny one.

Coffee: Coffee can be kept hot without boiling by placing the coffee pot in a container of boiling water. Those who resort to putting the coffee pot over a direct flame are not complimented for their good coffee.

Science News Letter, December 15, 1951

TECHNOLOGY

Underwater Television Aids Or Replaces Human Divers

➤ WIDER USE of underwater television to aid or replace human divers in exploring a sunken vessel or ocean bottom formation is promised with improved equipment recently revealed by the U. S. Navy Bureau of Ships. This new camera is reported to be far superior to that used in 1947 to evaluate results of the Bikini atom bomb tests.

The new underwater television cameras enable viewers to see under conditions where diver operation is not possible. A broad view of the whole area in which work is being done is provided by a wide angle lens. When desired, a close-up of specific details can be provided simply by closing a switch on shipboard. This changes the camera lens from wide angle to telephoto.

Used with suspended lights, these underwater television cameras enable viewers on shipboard to examine the ocean bottom continuously over long periods of time. The time divers can remain deeply submerged is limited. Pictures appearing on the television screen can be photographed on motion picture film when desired for future study.

Science News Letter, December 15, 1951

INVENTION

Smoking Mixture Has No Tobacco

➤ THERE IS no tobacco in a smoking mixture on which patent 2,576,021 was issued to Jean U. Koree, New York, but it is claimed as a tobacco substitute with the flavor, aroma and appearance of natural tobacco. It has the burning characteristics of tobacco, and can be made nto cigars or cigarettes, or smoked in a pipe.

Science News Letter, December 15, 1951

IN SCIENC

ACOUSTICS

"Oil Can" Mike Detects Sound Measurements

➤ A MICROPHONE that resembles a mechanic's oil can, the sound being picked up on what looks like the tip of the spout, will aid physicists in making delicate measurements of sound.

It was built by Dr. Robert W. Leonard of the University of California at Los Angeles, because ordinary microphones were not suitable.

He calls it a "resistively terminated probe microphone" and it is said to be the most "ideal" microphone ever built.

Up until now physicists and radio engineers were on the horns of a dilemma: a large microphone was more efficient and recorded more sensitive measurements, a small microphone was less efficient but did not distort the sound waves like the larger models.

Dr. Leonard has combined the advantages of both types of microphones. The sound is picked up by a tiny condenser microphone at the tip of the "spout." This is connected to an air tube, at the end of which is a sound-absorbing wool material. This eliminates the "bounce" that formerly caused distortion of the sound waves.

Science News Letter, December 15, 1951

CHEMISTRY

Chemical Kills Weed Seeds in Crop Fields

➤ A CHEMICAL that kills weed seeds as they start to germinate and thus can be used to keep unwanted growths out of plant fields was shown at the Chemical Industries Exposition in New York.

It is a variation of the 2,4-D compounds that have been widely used as weed killers. Its chemical name is sodium 2,4-dichlorophenoxyethyl sulfate. A product of Carbide and Carbon Chemicals Co., it was developed at Boyce Thompson Institute for Plant Research at Yonkers, N. Y., and tested at Seabrook Farms in New Jersey.

The soil activates the chemical upon contact with it and thus it is harmless to foliage at the low concentrations that are applied. It kills or stunts most shallow-planted seeds during germination but usually does not affect deeply planted large seeds or established plants with deep roots. It controls such weeds as chickweed, lamb's quarters, purslane, redroot and carpetweed, and also annual grasses such as crabgrass and foxtail, affecting them for two to four weeks depending upon the weather.

Science News Letter, December 15, 1951

E FIELDS

GENETICS

Head Contour Spots Cattle That Breed Dwarfs

➤ HOPE FOR control of hereditary dwarfism, now causing serious losses in registered and commercial herds of beef cattle, has been found by P. W. Gregory of the University of California's Agricultural Experiment Station at Davis.

A midforehead prominence often shows up in cattle known as "dwarfism carriers." These carriers seem otherwise normal, but often produce dwarfed offspring. When the young carriers are spotted they can be eliminated from the herd before they reach breeding age.

A key to this has been provided by a precision instrument developed by Mr. Gregory which records the exact profile of the head.

After measuring hundreds of head profiles with a precision instrument he developed, Mr. Gregory found the head contours of the carriers are midway between those of deformed dwarfs and normal, non-carrier animals.

Dwarfism is a form of cretinism found in many animals, including man. The dwarfed animal has a broad head, protruding lower jaw, heavy breathing, pot belly, and stunted growth.

In all dwarf cattle studied, the pituitary glands were greatly deficient in the thyrotropic hormone. This hormone stimulates the thyroid gland to secrete another hormone called thyroxin. When thyroxin is deficient the animals are retarded in growth and develop the cretin or dwarf appearance.

Science News Letter, December 15, 1951

MEDICINE

Plastic Head Aids Radiation Therapy

➤ AN ANATOMICAL model of the human head, of natural size and made of translucent plastic, was demonstrated to the Radiological Society of America meeting in Chicago as the latest aid to the study of X-ray treatment of cancer.

Developed at Bellevue Hospital, New York, and constructed and cast by Bakelite Company at its laboratory at Bloomfield, N. J., it is designed as an aid to doctors and medical students in the latest techniques of radiation therapy. It is used to demonstrate how to beam X-rays at internal areas where cancerous growth is most prevalent.

The conception and designing of the head was by Dr. Rieva Rosh, New York University College of Medicine, and Dr. Oscar H. Cohen of Bellevue Hospital. Bakelite resins were chosen to mold the translucent model because of their dimensional stability, light weight, high refractive index and resistance to impacts, heat and light.

The model is mounted on a revolving base. It is cast in two halves so that internal anatomy can be revealed. Within the plastic head are imbedded battery-operated light bulbs that illuminate principal areas affected by tumors. The aiming of beams of radiation is made easier by the new model.

Science News Letter, December 15, 1951

TECHNOLOGY

Heat-Absorbing Plate Glass Aids Air-Conditioning Units

➤ NEW HEAT-absorbing plate glass for windows, when used with single sheets of the usual quarter-inch thick type, will exclude 61% of the total sun radiation but transmit 71% of average daylight. A combination of two lights with a sealed airspace between will exclude 78% of the solar radiation and transmit 62% of the light.

This new glass has been announced by G. P. MacNichol, Jr., of the Libbey-Owens-Ford Glass Company, Toledo, Ohio. It is particularly suitable for use in large insulating windows in air-conditioned factories, offices and homes. Its use permits smaller air-conditioning units and saves initial cost and operating expense.

Science News Letter, December 15, 1951

GENETICS

Wheat Hybrids Resist Deadly Mosaic Disease

➤ THE FIRST wheat hybrids resistant to the deadly yellow streak mosaic virus have been developed by plant scientists at the U. S. Department of Agriculture.

The hybrids are crosses of wild grasses, often considered as weeds by farmers, and wheat. They are now being tested for commercially valuable properties, such as yields, protein content and resistance to other diseases.

Streak mosaic has cost western farmers hundreds of millions of dollars since it was first identified in 1932. It is estimated that in Kansas alone in 1949, farmers suffered a $30,000,000 loss due to the disease.

No wheat resistant to streak mosaic has been known previously, but it will require many additional crosses of the hybrids before commercially desirable wheat can be obtained, state H. H. McKinney and W. J. Sando, who developed the mosaic-resistant types. Even though the hybrids were inoculated with the disease twice, five selections of crosses of *Agropyron* wild grass and wheat remained mosaic free, they report in the PLANT DISEASE REPORTER (Nov. 15).

Science News Letter, December 15, 1951

MEDICINE

Expose Burns to Air For Disaster Patients

➤ IN THE event of an atomic bombing disaster, treatment of severe burns by the exposure method in some cases and by pressure dressings in others "could provide a far more practical and satisfactory program for mass treatment than any plan heretofore described."

So Dr. Allyn J. McDowell, plastic surgeon of North Hollywood, Calif., declared at the meeting of the American Medical Association in Los Angeles.

The exposure method consists of immobilizing the burned parts of the body with constant exposure to room air. In addition, whenever possible the burned parts are elevated to combat swelling. No dressings or medications are put on the burn at any time. This method was tried and abandoned earlier in the century. A revival of it, with some changes, has been used with great success during the last two years, Dr. McDowell stated.

He stressed that the exposure method should not be considered a revolutionary method to supplant all previous metho s. It should not be considered a routine method of treating all burns, he added. Saving in supplies, anesthesia, personnel and work, and reduced need for skin grafting later are its advantages.

Pressure dressings consist of layers of fine mesh gauze, a filling of resilient bulk or waste and an outer wrapping of non-elastic gauze, roller gauze bandage and adhesive tape. They are put on, Dr. McDowell said, after dead and loose tissue has been removed, the healed or unburned area cleansed with soap and a medication such as plain petroleum jelly has been put on the burn or wound. The dressings are changed every one to three days.

Pressure dressings not only create effective, evenly distributed pressure but also immobilize and splint the burned part.

Science News Letter, December 15, 1951

INVENTION

Make Briquettes from Fine Coal Dust Waste

➤ LEWIS A. Tarpley and Clarence H. Fleming, both of Louisville, Ky., received patent 2,576,548 for apparatus to make briquettes suitable for ordinary furnaces from the fine coal wastes found in the neighborhood of many coal mines. Patent rights are assigned to Stokett Development Corporation.

The apparatus is mounted on a base of firebrick over a chamber for burning gas or oil to provide heat to aid the process. Steam, compressed air and a liquid binder of bituminous or petroleum types are used to prepare the coal dust for briquetting

Science News Letter, December 15, 1951