New Products

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This new portable television camera and transmitting station, designed to operate in the field as a one-man back-pack unit, was demonstrated by L. E. Flory, of the RCA Laboratories, at a meeting of the Institute of Radio Engineers in New York on March 22. In the illustration, J. E. Dilley, of the RCA Laboratories staff, is demonstrating, and standing to the right is Dr. V. K. Zworykin, Vice-President and Technical Consultant of the RCA Laboratories, who directed research and development work on the equipment.

Weighing only 53 lb, the back-pack station is planned to function with its own battery-power supply. Numerous applications for the new equipment are foreseen by RCA research engineers, including news coverage, with television-equipped reporters flashing pictures and commentary directly to editorial rooms, and remote industrial viewing and control.

The new transmitter operates in conjunction with a control station which may be located as far as a mile from the camera. Signals corresponding to the scene being televised are transmitted to the control point on an ultra-high frequency with a power of two watts. In addition to acting as a monitor for the televised picture, the control point performs two other functions. It sends out a stream of pulses which stabilize the camera and can be used also to issue vocal instructions to the cameraman.

Recent developments in the design of pencil-sized tubes and other sub-miniature components made possible the relatively small bulk and weight of the equipment. Two small antennas extend from the top of the pack and are used respectively to transmit the picture signal to a base station and to receive voice and control signals from that same point.

The camera is an adaptation of the RCA industrial TV camera using the Vidicon tube. As an added feature, the camera includes a miniature kinescope picture tube which serves as a view-finder for the cameraman.

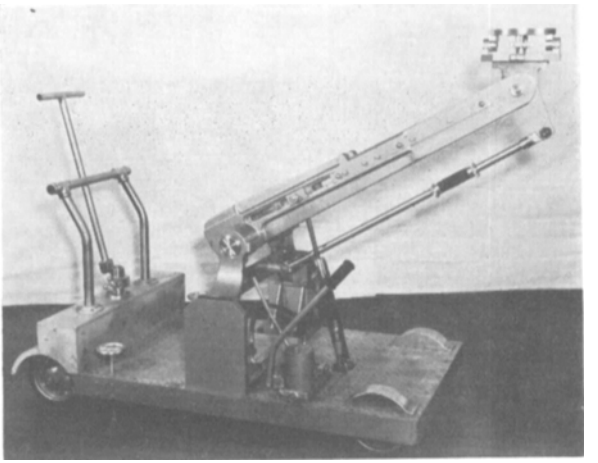
The equipment contains 42 tubes which, with their associated circuits, provide all synchronizing frequencies for a standard 525-line, 30-frame interlaced television picture. Included in the unit are the battery-operated power supply, deflecting circuits, amplifiers, and a radio receiver for operator instruction from the control point. A single battery operates the portable station for about 1½ hr.

The narrator-camerman's voice is picked up and transmitted through the combination of a small microphone built into the camera case and an ingenious electronic circuit which adds the voice signals to the picture signals as they are radiated to the control point.

Motion pictures team up with an electro-mechanical scoring device that metes out penalty points for automobile driver errors in the Automograph, an automatic driver-trainer developed by the Automograph Company, 30 Broad Street, New York, and used by the Aetna Casualty and Surety Co. which calls it the Aetna Roadometer in a national automobile safety campaign. The complete equipment projects a three-minute motor trip, records penalty points for each error in steering, braking, signaling, speed control and horn blowing, totals the driver's score and prints a report card with individual scores for each of nine separate driving problems. Also shown here is the "mechanical brain" with its lid off.

Scoring is accomplished by a series of counters and mechanical accumulators that compare the driver's actual performance over a period of 180 successive time units, with a theoretically "perfect" driver. A perfect match in every case gives a total score of zero, while the poorest score is 180. The signals to be matched are in the sound track area, film is a loop of 16-mm color, and operator instructions and examples of the consequences of improper driving are projected from a series of 2 × 2 color slides.

The Hydrolift Dolly is basically designed to permit fast changeover from high to low camera positions, or vice versa. The required time is reported as 5 sec for high to low and 20 sec for low to high. It is manufactured by National Cine Equipment, Inc., 20 W. 22d St., New York 10.

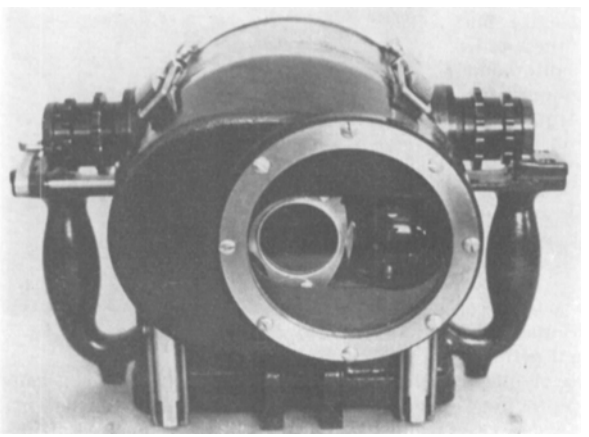


The dolly weighs about 395 lb and has these dimensions:

Over-all length
With arm in lowered position . 75 in.
With arm in raised position . . 55 in.
Over-all width . . . . . 28 in.
Maximum height
To top of tripod head mounting base . . . . . 69 in.
Minimum height
To top of tripod head mounting base . . . . . 22 in.

The camera boom arm lift is operated by a hydraulic cylinder and powered by a manually operated pump. Downward movement is accomplished by gravity action on the oil cylinder. Rate of descent is controlled by a vernier screw arrangement, and the arm which can be stopped at any position is automatically locked by the hydraulic system.

The dolly is designed to accommodate any 16-mm or 35-mm professional camera or blimp, as well as TV cameras, the maximum load weight being 250 lb. The dolly can be equipped with an electrical hydraulic pump system to eliminate the manual operation.



An underwater motion picture camera and diving equipment, designed to permit a photographer to remain under water for an hour to an hour and a half, are now available from Fenjohn Underwater Photo & Equipment Co., Ardmore, Pa. That organization has been custom-making underwater photographic equipment for 22 years and is now producing the 16-mm camera in limited quantities. The assembly includes a Bell & Howell GSAP camera of 50-ft capacity, with an Elgeet

wide-angle 13-mm focal length $f/1.5$ lens, four filter mounts, an electric drive (self-contained batteries) which will operate approximately 1000 ft at sound speed and what Fenjohn reports are the only effective underwater color filters produced. Aperture, focus, filter and speed settings (of 12, 16, 24, 32, 48 or 64) may be made under water. Aperture, focus and filter settings and footage counter may be seen through the large viewfinder. The operator's thumb works the trigger. The housing is cast aluminum, and the equipment weighs 21 lb in the air and 3¾ lb under water. The camera is easily handled from a small boat, and it is reported that it can be hauled up, reloaded and returned to the swimmer in 30 sec.

Fenjohn says that good commercial-quality pictures may be made at 10 to 20 ft below the surface. The price is $1,790.

The Aqua-Lung, which was described in "U.S. Naval Underwater Cinematography Techniques," by R. R. Conger, (*Jour. SMPTE*, vol. 55, pp. 627–634, Dec. 1950), is a free swimming unit, light and easily transported, using compressed air. The Fenjohn Company, which distributes it, says that dives of over 400 ft have been accomplished with the lung and that it is standard equipment for the French Navy. They say that it "should be part of everyone's gear who is around the water for both enjoyment and practical purposes." It costs $139.50, delivered anywhere in the United States.

Meetings of Other Societies

American Physical Society, Apr. 26–28, Washington, D.C.

Acoustical Society of America, May 10–12, Washington, D.C.

American Physical Society, June 14–16, Schenectady, N.Y.

American Physical Society, June 25–28, Vancouver, Canada

American Institute of Electrical Engineers, June 25–29, Toronto, Canada

Illuminating Engineering Society, Aug. 27–30, Washington, D.C.

Biological Photographic Association, 21st Annual Meeting, Sept. 12–14, Kenmore Hotel, Boston, Mass.

National Electronics Conference, Seventh Annual Conference, Oct. 22–24, Edgewater Beach Hotel, Chicago. The conference is sponsored by the American Institute of Electrical Engineers, Institute of Radio Engineers, Illinois Institute of Technology, Northwestern University and the University of Illinois, with participation by the University of Wisconsin and the Society of Motion Picture and Television Engineers.

The American Institute of Physics is holding a twentieth anniversary meeting in Chicago on October 23–27. Its member societies will hold meetings at that time as follows:

Acoustical Society of America, Oct. 23–25
Optical Society of America, Oct. 23–25
Society of Rheology, Oct. 24–26
American Physical Society, Oct 25–27
American Association of Physics Teachers, Oct. 25–27

Employment Service

POSITION AVAILABLE: Mechanical engineer, preferably experienced in design 35-mm projectors; salary open; state qualifications and salary requirements for permanent position; write to: H. T. Matthews, President, Motiograph, Inc., 4431 W. Lake St., Chicago 24, Ill.