

placed on the market, the original company merged with International Projector Corporation. Then, with the coming of talking pictures, the esteemed Powers mechanism quietly disappeared from the field.

Perhaps the greatest single improvement in projector design during the 1920's came from Germany. In 1925, the German AEG projector introduced the conical rear shutter. This shutter made possible the greatest light efficiency, coupled with the utmost heat elimination. It was the forerunner of the shutters found in the most modern projectors of today.

In 1928, Motiograph equipped its machines with rear cylindrical shutters. With the introduction of sound-on-film,

the reduced picture aperture size, plus the perforated sound screens, made an increase in arc amperage necessary. Rear shutters became very desirable. One designed by Bassen and Stern reduced the heat on the film, as well as supplied a stream of cool air around the aperture.

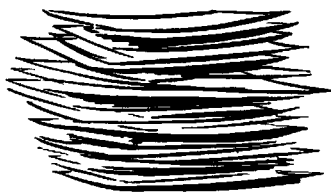
The *Super Simplex* of 1930 was designed with a rear disk shutter. This model could also be supplied with a turret to hold three lenses. By changing lenses during projection, the screen could be enlarged suddenly for spectacular sequences of the picture.

We have seen many of the early projector mechanisms developed during the first 35 years of our industry. But there were 25 more years of development

and expert engineering before we had the excellent projectors of today, with their efficient optical systems, foolproof automatically lubricated mechanism, film take-ups which provide uniform tension of 7 to 8 oz, whether using a 2-in. hub, or taking up 5000 ft of film, conical rear shutters, operating less than 1 in. from the film aperture, water-cooled aperture plates and, of great importance, the recently introduced curve gate which gives the utmost in picture sharpness on the screen. This gate greatly reduced buckling and damage to the film image, which has proven so troublesome since the introduction of the various wide-screen techniques.

Yes, we've come a *long* way from the Edison spool-bank Kinetoscope of 1897.

## news and



## reports

### Combined Forces

#### Make History at Bartlesville

Fame is a chancy thing, perhaps especially in motion-picture and television engineering. A combination of forces (and a vacuum) may have put Bartlesville, Okla., into our history as a Famous First in motion-picture distribution, with the goal: every home a boxoffice; every home a first-run movie theater.

Last summer the financing finger of Video Independent Theatres, Inc., pointed at Bartlesville (pop. 30,000), and on September 3, when the delighted citizens turned on their television receivers to view *Pajama Game*, via the new (coaxial) Telemovie system, they assured the town at least a paragraph in all future histories of the development of television. The monthly subscription rate of \$9.50 became effective October 1.

Although Jerrold Electronics Corp., designers of the Telemovie cable and distribution plant, object to the term "experiment" and describe the innovation as a "full-fledged business venture," a number of questions are being asked in the columns of the trade papers and daily newspapers that must be answered before the most optimistic reporter can let himself go and call the Bartlesville project "the dawn of a new era." The questions most frequently asked concern (1) economics, (2) legalistic aspects and (3) the relationship to broadcast pay-TV.

#### The Economy

Areas of uncertainty seem to be encountered in even the most informed discussions of financing and the conclusions that might be drawn from the known facts

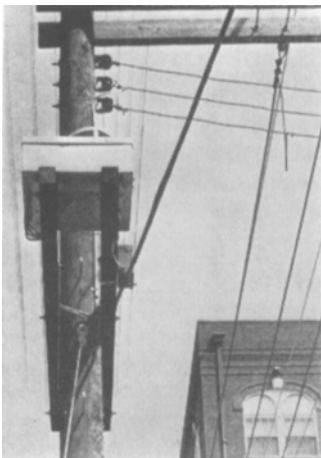
are contingent on the solution of problems that have not, as yet, been clearly defined.

On September 3, a total of 472 installations had been completed in Bartlesville and 271 more were awaiting extension of trunk and feeder lines. Henry S. Griffing, President of Video Independent Theatres,

admitted at a recent press conference in New York that this figure had no real significance but "it indicates a lively beginning for Telemovies in the first test," he said. He added that within the year he expected to reach 2000 subscriptions which would represent 40% of the homes with



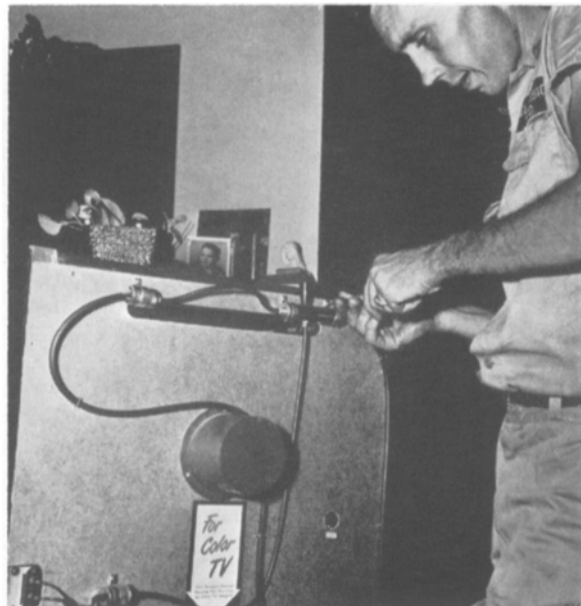
Studio interior of the Telemovie Center at Bartlesville, Okla. It is in quarters converted and renovated in the "old" Lyric Theatre. Most of the equipment was made by General Precision Laboratory, Inc. (Photo by Herman's Studio and Camera Center, Oklahoma City, Okla.)



Amplifiers supplied by Jerrold Electronics Corp. are housed in weather-proof boxes and installed on poles at regular intervals through the distribution system.



System technicians "tap" a cable drop from the main trunk into the subscriber's home.



A switch is attached to the back of the receiver to enable a subscriber to watch either regular off-the-air TV programs or Telemovie films.

TV sets and bring the venture to the "break-even" point.

Any evaluation of the potentialities of Telemovies based on the Bartlesville test must take into consideration that Bartlesville is hardly in all respects what may be called a typical American town. For one thing, it has an average family income of over \$6,000 and there is virtually no unemployment. One sales management report has rated the effective buying income of Bartlesville as \$62.3 millions with a per capita income of \$2,276 and income of \$7,006 per family. There are four theaters in the town, all owned by the Telemovies promoter, Video Independent Theatres, Inc.

At the New York press conference questions were raised about the probable cost and feasibility of installing the cable and feeder lines in large cities and towns where the installation problems might be far different from those encountered in Bartlesville. As Mr. Griffing pointed out, there is no answer to this and similar questions except in terms of the specific situation.

The Jerrold Electronics Corp., developers of community antennae systems and the Cable Theatre System have also spoken on the economics. A frank explanation and analysis of the economics of Telemovies was presented at the Society's Convention at Philadelphia, October 5, by Donald Kirk, Jr., of Jerrold, in a paper entitled "Economic Considerations in Closed-Circuit Television System Design." Mr. Kirk said there are two unknowns of major importance: "First," he said, "we don't know how much the American public will pay. . . and second, we don't know how much [cable theater] will cost." A trial market analysis, he indicated, would throw light on the first factor. In discussing the second, he suggested a method for arriving at a figure representing the combined costs of installation, equipment and maintenance.

#### The Law

The questions concerned with legalistic hazards and with broadcast pay-TV are closely related. The advent of the various forms of broadcast pay-TV which included

scrambled programs, decoding devices, coin boxes and "silent pictures" was immediately followed by a roar of disapproval from many Congressmen, and a strong hint that the Federal Communications Commission could well turn thumbs-down on pay-TV, if indeed it had the authority to act at all. As time went on and it became more apparent that promoters of pay-TV were running into stormy weather, the attention in the trade shifted to cable TV which, it was believed, might be exempt from FCC ruling.

Mr. Griffing has repeatedly insisted that Telemovie is by no means in the same category as pay-TV. He reiterates that it is nothing more or less than a new form of motion-picture exhibition and is no more a threat to exhibitors than drive-ins. Far from being a threat, he regards it as a shot in the arm for the ailing industry and he describes it as a means for survival. There are, however, a few hints that this view is not necessarily shared by all concerned.

#### Broadcast Pay-TV

While Telemovies may have slipped in because of the vacuum caused by long waiting for decisions of the FCC on toll-TV, wired movie enthusiasts have been warned in an ominous and well-publicized statement by FCC Chairman John C. Doerfer: "Anyone who envisions huge profits in wired-TV had better look over his shoulder. That warm feeling of a 'golden' glow may merely be the hot breath of regulation."

When asked for comment on Mr. Doerfer's statement, Mr. Griffing's response was immediate and vigorous. He said that he found the expression most extraordinary and completely inaccurate. That rather than envisioning any "golden glow," the promoters of Telemovies were willing to chance losing money on the venture in a gamble for the survival of motion-picture exhibition. He stressed the word "survival" and said that the whole project was undertaken in an effort to bring exhibition out of

the slump into which it has fallen. "The success of Telemovies will simply mean that there will be three forms of accepted exhibition — conventional, drive-in and Telemovies," he said. He explained that one of the major aims of Telemovies is to bring in the potential audience which now infrequently patronizes the movies.

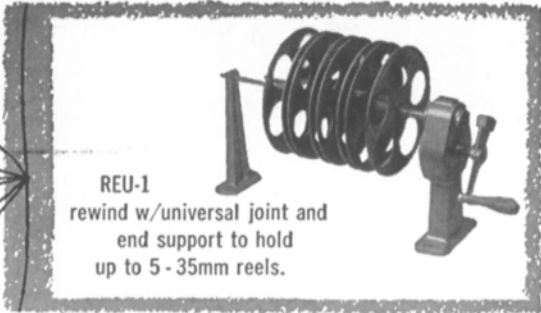
Chairman Doerfer's statement was made on September 14. On September 18 the FCC issued cautiously worded instructions as a first step toward possible eventual authorization of pay-TV on a trial basis. The announcement covers only the "acceptance and consideration of applications from present or proposed television stations requesting authorization to conduct trial subscription TV operations." If an application is accepted, the try-out would extend over a three-year period "on a limited basis" and under "controlled conditions." March 1, 1958, is the earliest date on which action will be taken on applications. The FCC is not committed to grant any applications and the initial ruling "does not constitute adoption of a final order."

The question of jurisdiction has loomed large in Congressional discussions preceding publication of the FCC statement. Doubts were expressed as to the extent of FCC authority in the matter and the question was raised as to whether it properly came under Agency or Congressional jurisdiction. The FCC statement may serve to define the extent of its authority but by no means does it rule out the possibility that Congress may during the next session approve a bill outlawing pay-TV.

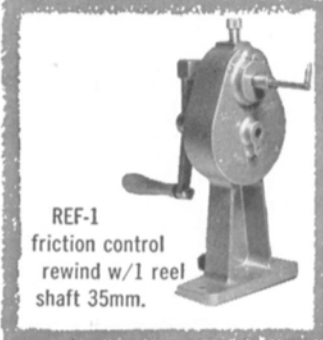
One of the most vigorous opponents of pay-TV is Rep. Emanuel Celler (D., N.Y.), Chairman of the House Judiciary Committee. He is the author of a pending bill that would have the effect of preventing any further FCC action in this matter and would place the authority in the hands of Congress. Considerable support is expected for his bill when Congress reconvenes.

Pay-TV received its first serious attention

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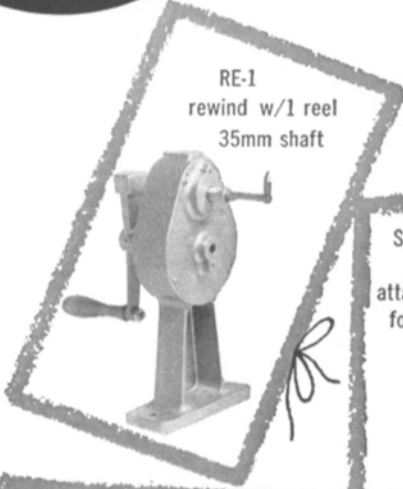
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 tightwind



**RE-1**  
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 attachment  
 for rewind



**SP-16 (16mm) spacer**  
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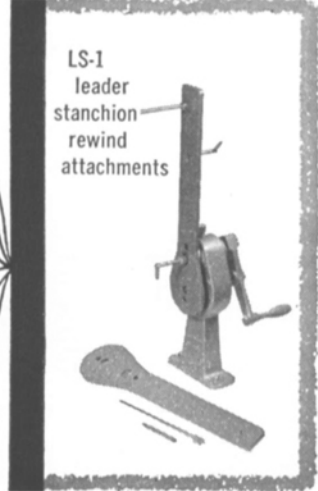
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from the "big three," Zenith, Skiatron and Telemeter, each of whom favored some form of scrambled programs with a decoding device. Telemeter developed a coin-box system (described in the August 1953 *Journal*, pp. 183-194), reportedly in the hopes of side-stepping the FCC. Another ingenious device, involving the separation of picture and sound was promoted by TeleGlobe. With this method, the set-owner would not pay for the picture but would be charged for the sound. The Bi-Tran system developed by Blonder Tongue Laboratories bases its coded TV on a "dual channel" multiplexing device which, the firm reports, does not interfere with free programs.

The rapidly mounting opposition in Congress and the, at best, tepid FCC statement have served to dampen the enthusiasm of pay-TV sponsors. Spokesmen for the "big three" are admittedly pessimistic. In the opinion of a Skiatron official, pay-TV has been "killed for at least five years."

### The Technology

When the spotlight is turned away from the economic and legalistic aspects of Telemovies and onto the technical aspects, the picture is a much happier one. There is no question of the success as a technical innovation.

Telemovies in Bartlesville originate in what was formerly a 600-seat VIT-owned theater. It now houses two complete film chains, each comprised of two 35mm film projectors and two vidicon cameras, a

multiplexer, master monitor, and control console. Most of the studio equipment was made by General Precision Laboratory Inc. The projectors are Simplex 35mm XL theater machines specially modified for television with a 3-2 shutter and intermittent movement to synchronize the standard film projection frame rate with television standard. The adaptation of CinemaScope and VistaVision to the aspect ratio of home TV screens is accomplished by electronically altering the sweep of the film camera by pushing pre-set buttons on a monitor console. Comments from viewers indicate that the adaptation is entirely satisfactory.

Other than Jerrold and GPL, firms whose products are used in the project are Adler Communications Laboratory, power supplies; Pye Ltd., sync generators; Tel-Instrument Corp., bar-dot generators; Muzak tape recording, and Gray Research and Development, Inc., slide projectors. In addition to installation equipment, Jerrold also supplied modulators.

The Bartlesville program, although considered separately from pay-TV, came about in response to the same economic factors that influenced it. Interest is especially keen in both the economic and technical aspects of Telemovies. Mr. Kirk's paper will be published in an early issue of the *Journal* and other papers are expected which will describe certain equipment made especially for the test and will explore the technical possibilities inherent in the trend toward new fields of development. —R.H.

## Industry, Education News

**Industrial Film Production** is the title of a new course being given this Fall by the Fullerton Evening Junior College, Fullerton, Calif. The course will be conducted by Jay E. Gordon, supervisor of motion pictures at Autonetics, a division of North American Aviation, Downey, Calif. Content of the course is aimed at the management and professional levels of film-making as well as the semi-technical areas. Topics which will be covered include the organization of a film production unit, production of films using commercial facilities, budgeting a film and scheduling photography.

**Robert S. Burnap**, Manager of Commercial Engineering, RCA Electron Tube Division, Harrison, N.J., was honored at a luncheon celebrating his 40 years of service with the company. Mr. Burnap began his career as an engineer with the Edison Lamp Works of the General Electric Co., Harrison, in 1917. After returning from military service during World War I, he was appointed Manager of the Engineering Section of the Lamp Works in 1925. He has held his present position since 1930. He is a Fellow of this Society, and also a Fellow of the Institute of Radio Engineers and the American Institute of Electrical Engineers.

**Raymond L. Garman**, Technical Director of Research and Development, General Precision Laboratory, Inc., Pleasantville,



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