ABSTRACTS

Wide-Field Pictures on Narrow Gauge Film. FRED SCHMID. *Amer. Cinematographer*, **XII**, May, 1931, p. 36. A novel auxiliary lens system, designed by S. H. Newcomer, consists of cylindrical lens elements which are to be used with photographic or projection lenses. The system has a magnification of 1.5 in the horizontal plane only. Its effect is thus to increase by 50 per cent the horizontal angular covering power of any lens with which it is used. This extra field is compressed into the standard aperture width in photography, and magnified to normal proportions when the system is used on the projection lens. Units designed for 16 mm. film are now on the market, made by the C. P. Goerz American Optical Company of New York. They are said to require about 15 per cent more exposure than standard photographic lenses, and to reduce illumination in projection by one-third. A. A. C.

Super-Sensitive Film in Production. OLIVER MARSH. *Amer. Cinematographer*, **XII**, May, 1931, p. 11. The advantage of increased speed of the new film is said to be of secondary importance to the improved quality made possible by a better rendition of color and tone values. The results achieved seem to furnish a much closer approach to the natural visual brilliancy of the scene than has been reached with other materials. The author points out that, while less light is needed on the set, reduction must not be made in such a way that the normal balance of the lighting is disturbed. A certain number of light sources are needed for the balanced lighting of any set. A reduction in illumination should be made by using smaller lamps in present equipment; reducing the number of units is liable to spoil the quality of the picture. A. A. C.

Noiseless Test Film Developed by ERPI. T. L. DOWEY. *Amer. Cinematographer*, **XII**, May, 1931, p. 27; *Mot. Pict. Projectionist*, **IV**, May, 1931, p. 23. The new test film has no picture, but has two sound tracks which include voice and music selections, several constant-frequency sections from 55 to 8000 cycles, and a length of unmodulated track for ground noise measurement. It may be used to check the general quality of the theater sound reproducing system or to determine the frequency characteristics, and is expected to be a valuable standard for comparison of theater installations. The two tracks are recorded from opposite ends so that rewinding is unnecessary. A. A. C.

The Unsound Sound Business. HENRY L. WILLIAMS. *Proj. Eng.*, **III**, May, 1931, p. 9. Attention is called to the haphazard merchandising methods of manufacturers of sound equipment, which are claimed to be retarding influences on the growth of the industry. The author recommends that manufacturers sell only to reliable engineers who can help the factory control the use of their product and assume part of the responsibility for satisfactory service. A definite policy of this kind is advised as a necessary basis for prosperity in the industry. A. A. C.

Some Optical Features in Two-Way Television. H. E. IVES. *Bell System*

Tech. J., April, 1931, p. 265. Improvements in the optical systems of both the receiving and sending ends of an experimental two-way television system are explained. The scanning beam of the usual television system is of such intensity that it interferes with the users' vision of the incoming picture. By using a purple scanning beam and blue-sensitive potassium and red-sensitive caesium photoelectric cells, this objection is greatly reduced. In the receiving end the usual Nipkow disk has been replaced by a disk in which each of the spiral holes has an associated condensing lens fixed so as to focus, in combination with a fixed collimating lens, an image of the source on the disk hole. A. H. H.

Condenser Loud Speaker with Flexible Electrodes. P. E. EDELMAN. *Proc. I. R. E.*, Feb., 1931, p. 256. The author describes a condenser loud speaker built of a flexible impregnated cloth carrying a conductive coating and an air-permeable electrode, also flexible. The air space is regulated by means of thread spacers, which also tend to reduce back-lash rustle common to speakers of this type. Several operating circuits using this device either as a reproducer or as a pick-up unit are illustrated. Best results are obtained when these circuits compensate for the response characteristics of the speaker unit. A. H. H.

World's Biggest Cinema. *Kinemat. Weekly (Ideal Kinema Supplement)*, **168**, Feb. 12, 1931, p. 5. Describes the reconstruction work on the Gaumont Palace, Paris, which is one of the world's largest theaters. The ground floor has been lowered to the street level, and the mezzanine and upper balcony, which seat 900 and 1000 persons, respectively, are carried without any visible supporting column. These galleries are supported from each end by a metallic bridge resting on two abutments for which it was necessary to carry the foundations down nearly 100 feet. The total seating capacity of the theater will be 6000. The projection room, covering 900 square feet, will be equipped with six lanterns and six projectors, with plenty of room for future installations. It is estimated that 3000 amperes at 110 volts will be required by the projection room. Power will be furnished by Diesel engines. H. P.

Acoustics in Kinema Design. C. W. GLOVER. *Kinemat. Weekly (Ideal Kinema Supplement)*, **168**, Feb. 12, 1931, pp. 7–11. A certain amount of reverberation is desirable in theaters since it reënforces the direct sound, but excessive reverberation so changes the effective sound wave that speech becomes unintelligible. In the case of reproduced sound a certain amount of reverberation is introduced in the studio recording; moreover, the sound is reproduced at a considerably higher level than the original, and calculations based on the Sabine formula give values too great. Echoes also tend to render the sound unintelligible. In theater design, curves should be avoided as far as possible, although ingenious devices have been used successfully to break up the reflections from curved walls and domes.

Acoustical materials offer difficulties because of their poor fire-resistant properties. If air spaces are used behind the absorbent material, great care should be taken to see that they are completely closed and do not form continuous chimneys. If it is necessary to color the absorbent, stains should be used which will not clog the surface pores as would paint. Dust will also clog the pores so that cleaning of the theater should be extended to the acoustical linings. H. P.

Technicolor Benefits by New Process. F. POPE. *Mot. Pict. Daily*, **29**, May 11, 1931, p. 1. Freedom from the "boiling grain" effect in white areas on

projection of color prints is claimed as a result of an improvement in this subtractive process. Better definition is obtained on long shots than was previously possible. Super-sensitive film has made possible a decrease of lighting necessary for exposing color pictures. G. E. M.

New Fireproof Film Cabinet Demonstrated. *Mot. Pict. Daily*, **29**, Apr. 11, 1931, p. 1. The cabinet is designed to hold eight 2000-foot reels of film presumably in an exchange or a projection booth. It is built to withstand a great deal of heat. Both external and internal fire tests are described indicating the heat insulating properties of the walls. Technical construction details are not given. G. E. M.

New ERPI Photoelectric Cell Cuts System Noise. *Mot. Pict. Daily*, **29**, Apr. 21, 1931, p. 7. Caesium oxide is coated on a half-cylindrical electrode and a small vertical rod forms the anode. The previous cell used potassium as the light-sensitive element. Since the response of the cell is greater, the amplifiers can be operated with reduced gain, thus reducing the volume level of noise within the system. Other improved features are cited. G. E. M.

Testing Sound on Negative. M. F. COOPER. *Kinemat. Weekly Supp.*, **170**, Apr. 16, 1931, p. 25. Describes a method for determining the amount of development which has been given a variable width sound record independently of the exposure given the negative. Photographic requirements which must be satisfied by a good variable width sound negative are: (1) its image density should be about 1.4 and its fog density not more than 0.07; (2) the exposure should have been such that on development to a gamma of 2.0, the image density will be as given under (1). Two ways of giving such a film a known exposure of varying amount are (1) by adjusting the exciter lamp current, and (2) by varying the speed of the recorder. The second is, perhaps, the simplest. The oscillograph is supplied with a weak alternating current of constant frequency, of such value as to modulate the track just perceptibly. The machine is then set in motion, turned off, and allowed to come to rest of its own accord. As the recorder slows down, the exposure increases, and the frequency of the developed wave form is proportional to the exposure. The distance between the peaks of the wave is measured with a scaleometer and the logarithms of the reciprocals of these values are plotted as proportional to the relative exposures. Densities at these points are measured, and when plotted against the relative exposures a value for the gamma is obtained. An example of the method is given. G. E. M.

New Metal Mesh Theater Screen. *Film Daily*, **55**, May 17, 1931, p. 7. It is claimed that very satisfactory results have been obtained using a new type metal mesh theater screen. The features claimed for this screen include: a chemically treated surface free from all gloss, a very high reflection factor, and clear and uniform sound distribution throughout the entire theater. The surface can be washed with hot water and a soft brush without causing injury. The screen is stated to afford a clear view of any picture from any angle of observation, eliminating eye-strain and distortion. The screen surface may be periodically sprayed and for this purpose the company plans to lend, for a period of ten years, a complete spraying outfit with each screen purchased and furnish chemical solutions for resurfacing the screen. C. H. S.

Motion Pictures in the Service of Technical Research. F. DARDIN. *Kino-*

technik, **13**, Feb. 5 and 20, 1931, pp. 40–43 and 65–67. A vertical form of the Ruth boiler for storing steam to equalize power loads in industries was studied by means of motion pictures of a laboratory model of glass. A type of construction preventing undue ebullition of the water and consequent carrying out of water in the steam during discharge of the boiler was arrived at as a result of this study. A mercury arc rectifier was also studied by motion pictures under conditions where direct observation would have been impossible on account of the danger of bursting the glass. The operation of an automatic train-stopping device and the manufacture of "Protos" vacuum cleaners were also filmed. M. W. S.

Correctoscope. *Movie Makers*, **6**, May, 1931, p. 287. This new camera accessory is a combined range finder and exposure meter. It consists of a highly corrected lens, a reflecting prism, and a magnifying eyepiece which is adjustable for any particular eye condition. To find the range, the focusing ring is turned until the magnified image is sharp and the distance is read directly from the scale or, with non-turret cameras equipped with certain lenses, the instrument can be geared to the camera lens so that both operate simultaneously, enabling subjects moving toward or away from the camera to be kept in focus. To determine the correct exposure, a special filter is slipped into place and the diaphragm adjusted until detail in the shadows just disappears. The proper stop is then read directly, requiring no calculations. H. P.

Psychological Acoustics and Sound Films. G. KÖGEL. *Kinotechnik*, **13**, Feb. 5, 1931, p. 39. In sound film presentations it is disturbing to have the sound come from a direction different from that which would be expected from the action on the screen. If, however, the sound is produced in such a manner that it is impossible to distinguish the actual direction of its source, it will be associated with the proper location on the motion picture screen as a result of certain psychological reactions. This view is upheld by analogy with ventriloquism and the illusion of motion on the screen. M. W. S.
