

ABSTRACTS

A Meaningless Jubilee. G. SEEBER AND K. WOLTER. *Filmtechnik*, 6, November 15, 1930, pp. 1-4. The suggestion of a celebration for the Skladanowsky brothers prompts an editorial chronological review of the beginnings of motion pictures in the various countries. The article points out the fallacy of any claims that the Skladanowsky brothers gave the first public showing of motion pictures. The date of their showing in Berlin was November 1, 1895, long after the public exhibitions of Edison, Jenkins, Paul, the Lumière brothers, and Acres.

L. E. M.

Damage to Sound Films in Projection. A. SZEKELY. *Filmtechnik*, 6, December 13, 1930, pp. 9-10. The suggestion is made that the projection life of sound films is low because of drying out during the time that the films are threaded in the projectors and exposed to temperatures of 35°C. to 40°C. Such troubles may be minimized by using larger sprockets and better idler devices for keeping the film on the sprockets.

L. E. M.

Sound Film's Production Cost Near Ten Times That of Silent. *Ex. Herald-World*, 101, December 27, 1930, p. 7. According to a preliminary report of the U. S. Census Bureau, more than 1000 sound films were produced in 1929 at a total production cost of \$100,000,000, while 1500 silent pictures were turned out costing less than \$17,000,000. There were 143 establishments included in the census and their total expenditure was over \$180,000,000, compared with \$134,000,000 for 142 concerns reported in 1927. Negative films used in 1929 cost \$125,000,000 and positive films over \$10,000,000.

G. E. M.

Comparative Investigation of Electric Pick-Ups. P. HATSCHKE. *Filmtechnik*, 6, December 13, 1930, pp. 12-14. Pick-ups of German manufacture were tested for response characteristics. Curves are given which show their behavior over a frequency range of 60 to 5000 cycles per second.

L. E. M.

Metal Film for Motion Pictures. *Film Daily*, 55, January 14, 1931, p. 8. Metal film, claimed to be more durable and resistant than the present celluloid preparations, is reported to have been invented by L. Lumière.

C. H. S.

Distortion of a Variable Density Modulation in Printing the Positive. LEENHARDT. *Tech. Cinemat.*, 1, November-December, 1930, p. 11. The negative sound record produced in the variable density method of sound recording has a logarithmic distortion, on account of which no accurate appraisal of recorded sound quality is possible by direct reproduction of the negative. A corresponding distortion in the process of printing the positive compensates for it. Mathematical and graphical demonstration is given for an originally pure sinusoidal sound wave.

C. E. I.

Yield of the Fixing Bath in a Machine. R. LANDAU. *Tech. Cinemat.*, 1, November-December, 1930, p. 8. In a tube type of developing machine the utmost yield of useful work is obtained from the fixing bath by a system of

countercurrent flow. A convenient method of controlling the flow is one which takes advantage of the difference in density of the liquid at the last (film) stage and at the first where the bath is being diluted by developer carried on the film. If all the tubes are connected by small pipes at the bottom, the step-by-step change in gravity from one end of the machine to the other will cause a difference in liquid level from the first to the last tube. Although each tube is equipped with an overflow hole near the top, liquid will overflow only from the one or two tubes (of ten) nearest the developer because of the greater dilution with the consequent high liquid level. Thus the liquid is always discharged at the diluted (and exhausted) end. (In American practice where the water enters the fixing bath from a water rinse, this effect is also present.—Abstractor's Note.)

C. E. I.

Orthochrome Screen Eases Eye Fatigue. *Mot. Pict. Daily*, 29, January 20, 1931, p. 6. A description of a motion picture screen which regulates the spectral character and brilliance of the reflected light and thus is claimed to minimize eye fatigue. The surface of the screen is divided into a multiplicity of uniformly distributed areas, part of which are covered with a light filter, absorbing all or part of any predominant wave-length. A surface of uniformly distributed units results, each pair of which is claimed to reflect a composite of the wave-lengths, the sum of which presents to the eye white light or light to which the eye can react harmoniously and rationally. The nature of the filter chosen helps diffuse the light to reduce glare.

G. E. M.

Increasing Light Efficiency in Projection. F. HAUSER. *Filmtechnik*, 6, December 13, 1930, pp. 1-6. Tests of the Busch Neospiegel mirror reflector for increasing the efficiency of the projection arc show it to be superior to the ordinary spherical reflectors. The newly developed reflector is claimed to overcome some of the objectionable properties inherent in elliptic and parabolic shapes. The results of tests of new large-aperture projection lenses developed by the same firm are given. A large number of illustrations are used which show the benefits obtained with the various optical trains.

L. E. M.

Testing of Sound-Picture Channels. G. F. HUTCHINS. *Electronics*, 2, No. 2, February, 1931, p. 500. In sound picture production, it is important to have a complete knowledge at all times of the condition of each recording channel. This should be tested as a matter of daily routine and this paper is concerned chiefly with the details of these tests.

A. C. H.

Frequency Characteristics of Optical Slits. J. P. LIVADARY. *Electronics*, 2, No. 2, February, 1931, p. 512. An analysis is made of the attenuation due to the finite width of the slit in sound recording. A table is included showing the attenuation losses as a function of frequency for slits having a width of 0.5, 1.0, 2.0, and 3.0 mils.

A. C. H.

Sensitizing the Photo-cell. RICHARD FLEISCHER. *Electronics*, 2, No. 2, February, 1931. The sensitizing of photo-electric cells by means of a glow discharge in hydrogen has been known since the time of Elster and Geitel. This sensitizing process produces a marked increase in sensitivity and a shift in the spectral sensitivity. The constancy of a sensitized cell depends principally upon the establishment of a condition of equilibrium between the residual gas and the photo-electric

surface. Various experiments are described in the present paper which bear on the cause of the increase in sensitivity. A. C. H.

Television in Color from Motion Picture Film. HERBERT E. IVES. *J. Opt. Soc. of America*, 21, January, 1931, p. 2. It is shown that the Kodacolor motion picture film lends itself particularly well to the solution of the problem of transmitting colored motion pictures over the wire or radio. A. C. H.

A Multi-Channel Television Apparatus. HERBERT E. IVES. *J. Opt. Soc. of America*, 21, January, 1931, p. 8. An excellent summary of the fundamental difficulties that must be overcome before "fine-grained" television images can be transmitted. If a single channel is used, television signals must be sent at the rate of 7,000,000 per second. This would be impossible with the frequencies used at present in radio broadcasting. One solution is to use several relatively narrow frequency bands. The paper contains a description of a three-channel system. The multi-channel scheme has some advantage in compactness but, as the several circuit elements must perform uniformly, there is increasing difficulty as the number of channels is increased. A. C. H.

A New Photographic Effect. FRANKLIN E. POINDEXTER. *J. Opt. Soc. of America*, 21, January, 1931, p. 59. It is found that the application of pressure to a photographic emulsion prevents the formation of a latent image to a remarkably large extent. This effect is of interest in connection with theories of the latent image. A. C. H.

World's Theaters Wired for Sound. *Mot. Pict. Daily*, 29, January 24, 1931, p. 4. According to an approximate survey made by the Motion Picture Division of the U. S. Department of Commerce, 34 per cent (*i. e.*, 19,894) of the 58,082 motion picture theaters of the world were wired for sound as of November 1, 1930. Charts are shown giving data for Europe, the Far East, Latin America, Africa, and the Near East. Data for the chief countries are as follows: U. S. 22,731 theaters, 12,500 wired; Canada 1183, 653 wired; Great Britain 4500, 2602 wired; Germany 5360, 939 wired; France 3236, 460 wired; Brazil 1600, 125 wired; Japan 1327, 25 wired. G. E. M.

Combination Frost Screen and Cooling System. *Film Daily*, 55, January 14, 1931, p. 2. A metal screen, back of which is placed a refrigerating system, is a late development in theater equipment. The metal becomes covered with a white frost and the visual effect of this surface is said to be an improvement over the frosted glass screen. Fans directed on this screen, blow cool air from it to the audience. C. H. S.

A Line Filament Exciter Lamp and Accompanying Slit-less Optical System for Sound Film Reproduction. L. DUNOYER. *Tech. Cinemat.*, 1, November-December 1930, p. 43. By substituting a line filament exciter lamp for that using a coiled filament it is unnecessary to include a slit in the reproducer illumination system. Reference is given in this article to the patents on a lamp having such a filament and a plane parallel glass side. The optical system is designed to correct for the astigmatism resulting from the finite thickness of the glass. C. E. I.

The Artisol 75 Ampere Lamp. *Tech. Cinemat.*, 1, November-December, 1930, p. 44. A reflector arc lamp for motion picture projectors is announced

which is suitable for currents between 45 and 75 amperes. In order to avoid the risk of the arc flame reaching the glass mirror and cracking it, the flame is drawn slightly upward by an electromagnet. C. E. I.

Screen Characteristics and Natural Vision. L. M. DIETERICH. *Mot. Pict. Projectionist*, IV, Jan., 1931, p. 17. A discussion of the question of screen proportion in relation to the natural field of view of the normal eye. The angular limits of unstrained binocular vision are shown in diagram form. The zone of comfortable seeing on such a chart is found to correspond closely to the 5 to 8 ratio of dimensions which has been suggested as ideal for the motion picture screen. A. A. C.

New Brenkert High Intensity Lamp. *Mot. Pict. Projectionist*, IV, Jan., 1931, p. 15. The design and construction of the latest Brenkert projection lamp are here described and its advantages are listed in detail. It is claimed to give unusually even illumination on screens up to a 40 foot size. A. A. C.

New Projection Optical System. I. L. NIXON. *Mot. Pict. Projectionist*, IV, Feb., 1931, p. 13. A descriptive article on the Super Cinephor projection lenses and condensing systems designed by the Bausch & Lomb Optical Company for use with wide film. The necessity for exact spacing of the condenser system is emphasized. A. A. C.

New "Ortho-Krome" Screen Development. *Mot. Pict. Projectionist*, IV, Feb., 1931, p. 21, also p. 18. This screen material is said to so regulate the amount of light reflected to the eye that strain and fatigue are much reduced for the observer. It consists of a pattern of small square pigmented areas intermingled with white squares in proper proportion so that the quality of the illumination more nearly resembles sunlight. The size of these individual squares is made small enough to prevent their being resolved at the normal viewing distance. A. A. C.

Light Reflection Factors of Acoustical Materials. A. L. POWELL AND C. L. DOWS. *Trans. Illum. Eng. Soc.*, XXV, Dec., 1930, p. 882. There is a growing practice of lining the ceilings and walls of interiors with sound absorbing materials. Many of these have relatively high light absorption, and this must be taken into account in the design of lighting systems. The results of tests on the reflection factors of most of the types of acoustical materials in common use are reported. A. A. C.

Sound Picture Equipment in U. S. S. R. M. J. MOSHONKIN. *Amer. Cinematographer*, XI, Dec., 1930, p. 9. Apparatus has been developed for sound recording and reproduction during the last four years in Russia, under the direction of Prof. Shorin. The principle employed is that of the single ribbon oscillograph, and can be applied to both variable-area and variable-density methods. The paper gives a general description of the apparatus and contains illustrations showing the assembled units. Of interest is the statement that the Soviet five-year plan calls for forty thousand sound picture installations. A. A. C.

Warner Brothers' New Camera. WILLIAM STULL. *Amer. Cinematographer*, XI, Dec., 1930, p. 11. The first public showing of this new product took place at the October meeting of the American Society of Cinematographers; it is reported to be a distinct advance in camera design, and absolutely silent in opera-

tion. The optical system is the outstanding feature of the design, the objective lenses being mounted on the turret in fixed mounts with the entire turret movable for focusing. The focus adjustment is observed through a prism which reflects up to a horizontal ground glass, and the image at this point is again reflected back through the finder to a binocular eyepiece at the rear of the camera. By the turn of a lever a second prism reflecting 25 per cent of the light may be substituted for the first in the finder system, allowing the operator to focus his lens during the operation of the camera. A. A. C.

The Noiseless Motion Picture Camera "Cinephon." L. KUTZLEB. *Kino-technik*, 12, December 20, 1930, pp. 644-6. A camera, for which the minimum of noise is claimed, is constructed especially for sound work according to the design of Slechta of Prague. The mechanism and the pull-down are said to operate almost without sound. The remaining sounds, including that caused by the perforations of the moving film, are deadened by a double housing of sound-absorbing material, which increases the size and weight of the camera only slightly. The film magazines, mounted on the top of the camera, hold 300 meters of film. A revolving turret of four lenses is provided. A prism and 7x magnifier permit focusing on a ground glass in the film aperture without opening the camera. A scale indicating the sector shutter opening and a control handle for the automatic dissolve mechanism are found on the back of the camera. A lamp is mounted in the camera for exposing the edge of the film outside the perforations to aid in synchronizing the picture with the sound record. M. W. S.

Projectophone System. D. VON MIHALY. *Filmtechnik*, 6, December 13, 1930, pp. 6-9. A system of reproducing sound on film known as the Projectophone is sponsored by Mihaly, who devised it. The system comprises the customary necessary units, but has in addition a long focal length lens by means of which the sound record can be projected to the photo-electric cell located outside the projection room. This method of projecting the sound record permits the photo-electric cell and amplifier to be located together, at a distance from the projector and other electrical equipment. It is suggested that the principle employed in the Mihaly system may be of value for the projection of home movies. L. E. M.

European Sound-on-Disk Equipment Data. P. HART. *Filmtechnik*, 6, December 13, 1930, pp. 9-10. Data on methods of coupling, synchronizing, electrical equipment, etc., characteristic of the various European makes of sound-on-disk systems are presented compactly in the form of tables. L. E. M.

Television Process. *The Film Daily*, 55, January 18, 1931, p. 7. This process, including a newly developed screen, is claimed to make possible the projection of pictures onto an ordinary full-sized screen, to televise people and objects illuminated only by arc light or daylight, and to show an unlimited amount of detail in the picture. The principle of the process is to divide the subject into zones and televise each zone from a separate amplifier and through its own line to the receiver. A system of revolving mirrors is used to convey the light from the receiver to the screen. Any number of zones can be used, each necessitating a separate amplifier and receiving set. The method is a modification of the Baird method of television. C. H. S.

Noiseless Recording. H. C. SILENT. *Ex. Herald-World*, 101, December 27,

1930, p. 30. A dark print of a variable density sound record gives low volume reproduction and low ground noise, but as the print is made lighter, the ground noise level increases. A new auxiliary electrical circuit permits control of recording so that the volume is reduced for low volume sounds and automatically increased as the volume rises. The ribbons of the light valve have been set 0.001 inch apart in the past for recording and the strongest currents just bring them together. For weak currents the space was greater than necessary. According to the new system, the ribbons are set closer and the space is widened automatically to accommodate loud volume sounds. Thus the amount of light which reaches the film or the reproducing photo-electric cell has been unaltered even though the total amount has been decreased. No volume distortion on reproduction, therefore, is introduced. The device has been arranged so that photographic overload and light valve overload occur simultaneously when the set is adjusted for normal recording. Ground noise is claimed to have been reduced ten db. under commercial tests, and sounds previously completely obscured by ground noise may now be recorded and reproduced satisfactorily.

G. E. M.

New Type Microphone. *Mot. Pict. Herald*, 102, Jan. 24, 1931. p. 42. A corrugated aluminum ribbon 0.0001 inch thick, $\frac{3}{16}$ inch wide, and 2 inches long is placed between the poles of an electromagnet. Minute changes in air pressure produced by sound waves cause the ribbon to vibrate and set up an electric current, which is led to a transformer connected to a vacuum tube amplifier of the conventional type. The microphone is contained within a perforated box fastened to the base of an amplifier. A feature of the new microphone is its directional pick-up characteristics, sounds normal to the face being reproduced completely whereas the reception in the plane of the face is zero. Thus, if the camera is placed in this plane, any noise coming from it, is not recorded.

G. E. M.

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