

Acknowledgments

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References

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3. John W. Boyle, Committee Chairman, "Motion-picture studio lighting and process photography report," *Jour. SMPTE*, 59: 417-422, Nov. 1952.
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Discussion

Gordon A. Chambers (Eastman Kodak Co.): Arc you planning to supply similar carbons in smaller sizes as for Duarcs? I understand from the paper that at the present time it's only available for the Brute.

Mr. Dull: That is correct. Whether or not it will be supplied for the Duarc we don't know yet, but it will be investigated and developed for smaller sized carbons.

Thomas T. Goldsmith (Du Mont Laboratories): What is the possible running time for color

television studio use? How long can you run these arcs continuously for programming?

Mr. Dull: Of course everything depends on the size of carbon, and the current. As I say we have experience only with the 225-amp carbon. My guess is it would be about 20 or 30 minutes.

Peter Mole (Mole-Richardson Co.): As to the time of burning, the present lamp will burn continuously for 45 minutes without a re-trim; however, should a lamp of that kind be valuable in color televising, it can be made for longer burning.

Mr. Goldsmith: You mean by lamp design?

Mr. Mole: I would say by increasing the length of carbon. The lamp has no limit in the travel of its feeding mechanism.

George T. Howard (General Electric Co.): I believe you said this new carbon produces twice the light of a 10 kw. Does it do this at 275% of the power of the 10 kw?

Mr. Dull: Yes, including power losses in the ballast.

Letters to the Editor

Additional Notes on "History of Sound Motion Pictures"

After reading Dr. Edward W. Kellogg's three-part history in the June, July and August 1955 *Journals* with considerable interest, I would like to add some notes on early developments in sound film recording in England.

The first British film producer to achieve any success with talking pictures was the late Cecil M. Hepworth, who made a large number of synchronized disc shorts in his Walton-on-Thames studio between 1906 and 1913, under the trade name "Hepworth Vivaphone." The discs were made first at a regular gramophone recording studio, and then played back on the studio stage with a gramophone mechanically coupled to a motion-picture camera. Mr. Hepworth supplied exhibitors with a simple and effective electrical synchronizing device for projectors and acoustic gramophone reproducers. This system gave the projectionist a red or green light indication whether he was turning the handle of the projector too fast or too slow for the sound of the gramophone, which was placed below the screen.

Other systems of talking pictures shown in England at the same time were Edison's, Clarendon, and Gaumont. All of the systems were limited by the poor quality and weak volume of the acoustic gramophones of the period, but the Gaumont system made use of C. A. Parson's "Stentophone," which used a compressed air "supercharger" in the tone arm. This amplified the sound volume very considerably.

Talking pictures reappeared commercially in England about 1925-1926 when de Forest Phonofilms were made at a small studio at Clapham. This studio used a glow-lamp system, which recorded the sound on the side of the picture in the actual motion-picture camera.

From about 1926 onwards, Capt. H. J. Round of Marconi's Wireless Telegraph Company worked upon the photographic recording of sound and in 1929 the Marconi-Visatone system of variable-area sound on film recording was available to studios. The Visatone Film Recorder was actually the first to utilize the fluid flywheel for

eliminating flutter or wows, though in this case it was controlling a specially designed sprocket and not a drum. Capt. Round also designed early equipment for electrical disc recording, used by various British and Continental disc companies. The Vocalian Recording Company made use of it for early transfers of sound-on-film to discs, for use at the many British theaters which were equipped for the disc reproduction only.

Other British systems which achieved some measure of success at about this time were British Phototone, a disc system, and the British Talking Pictures variable-density sound-on-film system, which was a further development of the de Forest Phonofilm. The British Acoustic sound-on-film system was first introduced with a separate film carrying the soundtrack the full width of the film between the perforations, in accordance with the Peterson and Paulsen sound system. This was quickly changed, however, to the normal arrangement of the picture and sound on one film.

In 1928, Ludwig Blattner attempted to market the German Stille system of magnetic recording using steel tape. This was not successful in talking pictures but was taken up and developed by the British Broadcasting Corp.

In 1932, Capt. H. J. Round introduced a method of ground noise reduction to the Marconi Visatone System. This comprised a transparent shutter carrying three black lines of different lengths which intercepted the light in the recorder optical system in accordance with the amplitude of the sound modulation. This successfully avoided infringement of the RCA or British Acoustic patents on ground noise reduction.

At about the same time, I took out a provisional patent for applying ground noise reduction to open-track variable-area recording. This was done by recording an envelope track negative which was double printed over the open track in the laboratory. It was an expensive process of film printing, but enabled me to "silence" several films made at Twickenham Studios just before ground noise reduction was available. The double-print system was used for the preparation of the dialogue re-recording print only, and had the special

advantage that the envelope track could be advanced a couple of sprocket holes, thus giving ground noise reduction anticipation and avoiding the distortions due to clipping of transient modulations. Magnetic systems now in use readily enable ground noise anticipation to be used for preparing the final optical negative, a step which gives a major improvement in quality.

Incidentally, most of the gimmicks of the cinema of today seem to have appeared in some form or other years ago and were unsuccessful due to the crude technique of the time. The anamorphic system was exploited in England in about 1919, long before Chretien's system, when Julius Hagen, a British producer, made use of a mirror distorting device with a compression factor of 2:1 in series of "Kinckature" comedies. This was used for comedy effects and was not unscrambled in the projector. It is, therefore, useful as well as interesting to have on record information of every technical gimmick of the earliest days of the cinema; they can often be brought out, cleaned up, and used again.

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Baynham Honri
Ealing Studios Limited
Ealing Green
London W 5

(Mr. Honri is the Past-President of the British Kinematograph Society.)

Comments by the Author

Mr. Honri's letter is a valuable contribution to the story of the development of sound motion pictures. It helps to fill what I have felt to be the most serious gap in my "History of Sound Motion Pictures" published in the June, July and August issues of the *Journal*, namely developments abroad. It would be gratifying if others who have firsthand knowledge of developments, which have been overlooked or missed, would follow Mr. Honri's example and submit their stories.

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Edward W. Kellogg
276 Merion Ave.
Haddonfield, N.J.