Abstracts of Papers From Other Journals

Abstracts of papers appearing in other journals chosen for their importance and possible value to researchers, as well as those of timely interest, are published in the *Journal* from time to time.

Subject areas for the Abstracts in this issue of the *Journal* are shown below:

Historical
Laboratory Practice
Lighting
Optics
Photographic Theory and Materials
Sound
Television

HISTORICAL

England's First Film Shows, R. Brown, Part 1, *Brit. Jour. of Photo., 125:* 273-276, 31 March 1978; Part 2, pp. 293-294, 1 April 1978.

"England's First Cinema" (*The British Journal of Photography, 124:* 520, 24 June 1977) told how, with a (just) workable projector, Robert William Paul (1869-1943) began film exhibition in a special "Theatrograph" building at Olympia in London during the early part of 1896. The present account takes his story back some months — examining his part in the events of 1895, concluding with his demonstration of projection in the Royal Institution, on 28 February 1896. It is suggested that previous accounts dealing with Paul's involvement in cinematography at this time need modification, and that many important details in Paul's own accounts are either untrue or intentionally misleading. The role of Birt Acres (1856-1918) is assessed, and his earliest demonstrations of projection established for the first time. It is concluded that it was from the inventive skills of Acres that Paul derived much of the knowledge which later enabled him to rise to importance in the early English film industry, and this evolution illustrates that effective pioneering actions were stimulated by a business environment rather than being the result of a purely aesthetic or technological bias.

LABORATORY PRACTICE

The Du Art Frame Count Cueing System, Paul A. Kaufman and Irwin W. Young, *BKSTS Journal, 60:* 2-4, January 1978.

Notching or tabbing has been the accepted practice in cueing an original negative for printing. However, problems include abrasion, due to excessive handling, misplaced tabs or material weakened by the notching process, and the time taken in cueing. To overcome these problems frame count cueing has been developed, but is not successful unless reliable techniques exist for verification and checking.

Du Art's frame count cueing system overcomes some of these inherent problems by the use of the minicomputer in which hard copy printout is retrieved and keyboard, punch tape readers and punches, Hazeltine and frame counters are interfaced. Within the printing operation, a separate minicomputer for each printer is interfaced to its reader and display module, allowing considerable information verification.

Changes or corrections to the data are carried out easily and rapidly at the hard copy printout station.

The Du Art frame count cueing system has been devised to overcome the inherent problems of frame count cueing while retaining the advantages.

LIGHTING

Eliminating the Ultraviolet Hazard from HID Lamps, Fred Rokosz, *Jour. of the Illum. Eng. Soc., 6:* 233-236, No. 4, July 1977.

Because there have been a few cases of eye and skin irritation, caused by overexposure to ultraviolet radiation when the outer bulb of a high-intensity discharge lamp was broken away leaving the arc tube burning, the Bureau of Radiological Health requested lamp manufacturers to develop lamps with built-in safeguards that will permanently interrupt the arc discharge in the arc tube when the outer bulb is broken away.

Two methods have been devised for extinguishing a lamp's arc tube when the outer envelope is broken. One method utilizes a mechanical switch and the other method utilizes an oxidizable fuse.

A Multiplexed Remote-Control System, David M. Jacobson and Richard N. Crowley, *Jour. Aud. Eng. Soc., 25:* 586-591, Sept. 1977.

A device which allows remote control of a public address system and lighting control by time-domain multiplexing 63 analog channels over a single microphone cable is described. At the receiving end, analog values are held in sample and hold circuits and are distributed to either voltage-controlled amplifiers or lighting controls.

OPTICS

Lens Design Merit Functions: rms Image Spot Size and rms Optical Path Difference, Berlyn Brixner, *Applied Optics, 17:* 715-716, March 1978.

The chief lens design problem is to get all the optical paths from object point to image point equal within a small fraction of a wavelength to ensure that spherical wavefronts will be converging on all image points in the field of view. The LASL lens design program minimizes the lateral deviations of the rays from their ideal image points. Results given here show that this procedure also minimizes the optical path difference and that there is a linear relationship between the rms image spot size and the rms optical path difference.

PHOTOGRAPHIC THEORY AND MATERIALS

Application of the High Resolution Return Beam Vidicon, Michael J. Cantella, *Optical Engineering, 16:* 257-261, May-June 1977.

The Return Beam Vidicon (RBV) is a high performance electronic image sensor and electrical storage component. It can accept continuous or discrete exposures. Information can be read out with a single scan or with many repetitive scans for either signal processing or display. Resolution capability is 10,000 TVL/Height, and at 100 lp/mm, performance matches or exceeds that of film, particularly with low contrast imagery. Electronic zoom can be employed effectively for image magnification and data compression. The high performance and flexibility of the RBV permit wide application in systems for reconnaissance, scan conversion, information storage and retrieval, and automatic inspection and test. This paper summarizes the characteristics and performance parameters of the RBV and cites examples of feasible applications.

An Introduction to Polavision, Edwin H. Land, *Phot. Sci. Eng., 21:* 225-236, Sept./Oct. 1977.

The first instant color movie system is described. It is based upon a new process for making a hyperfine additive color screen, an integral silver transfer film and an associated process which is essentially dry. The film is exposed, processed, viewed, and rewound for reviewing without being removed from its sealed cassette. The insertion of the cassette and the motion of the film within the cassette give all instructions to the player from start to rewind.

SOUND

Digital Audio Standards (Minutes of the meeting of the Digital Audio Standards Committee, 1-2 December 1977, Snowbird Resort, Salt Lake City, Utah), *Jour. Aud. Eng. Soc., 26:* 52-54, Jan./Feb. 1978.

A summary report is given emphasizing the criteria for choosing the various sampling frequencies now used in digital audio. Technical factors to be standardized are listed in a priority order, and applications fields for digital audio are noted.

TELEVISION

Comparative Study of Broadcast Teletext Systems, Y. Guinet, *EBU Review, 165:* 242-254, Oct. 1977.

The first part of the article describes the principal features and the conditions of utilization of a packaged-data broadcasting system developed in France, *Didon,* which makes possible the transmission of data in a television channel, and of a teletext system, *Antiope,* which is considered as one of the possible specific peripheral applications of *Didon.* In the second part, the possibilities so offered are compared with those of the United Kingdom broadcast teletext system, taking the following aspects into consideration: sharing of the resource constituted by the broadcasting channel between independent transmission channels, transparency of the data-broadcasting system — that is to say, the possibility of establishing, between an originator and a recipient, a junction independent of the transmission medium — and the possibility of adaptation to the various systems of television. The third part compares the teletext systems themselves, from the point of view of performance, taking into consideration their pagination possibilities, their syntactical and alphabetical properties and the technological and economic constraints that they imply.