

previously recommended) and a "major source direction" reading (as originally recommended for use alone by P. C. Smethurst, who first introduced the incident light meter technique in England in 1936—see his paper in *British Kinematography*, vol. 1, no. 1).

The required exposure for average work is then given by simply taking the geometric mean of the two Duplex readings, i.e., the mid-point on the stop scale between the two readings. For clear-cut conditions this technique will be found to line up almost exactly with the exposure levels recommended by the principal reversal color film manufacturers, and it has proved to be highly successful in practice. It has, incidentally, already been fully described in a book on this subject which is in preparation and will be published in due course

July 21, 1950

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In comparison with Mr. Dunn's statement that he has been working on almost parallel lines for the last three years or so, I should note that my experience with incident light exposure meters date from 1933 when my first incident light exposure meter (of the hemisphere light-collector type) was constructed. That meter was rigorously tested for several years, and patent application was made in 1938 (U.S. Patent 2,214,283).

The principle involved in that meter took into precise account both light intensity and the geometric relationship of keylight, subject and camera, as described in the aforementioned paper.

Work on other types of incident light exposure meters, which are based on the same fundamental principle, has proceeded since that time. See: U.S. Pat. #2,489,664, application filed in 1946; and U.S. Pat. #2,444,464, application filed in 1947. Both applications were filed prior to the time when Mr. Dunn reports the beginning of his endeavors, circa 1947. Explanation was made on p. 585 of May 1950 JOURNAL, that evolving patent protection had made full release of basic data inadvisable until 1948, when the paper was written. The JOURNAL publication showed that the Society received the paper in February 1949.

It has been recognized that some workers in this field have had a more or less hazy realization that more was involved in incident light measurement for exposure control than a simple measurement of light intensity. Various corrective expedients have been proposed by some of these workers, such as pointing a meter with a plane surface light collector toward the camera from subject's position; pointing said meter toward principal light source; aiming said meter toward a point halfway between said light source and said camera; pointing meter at camera and at light source in turn and using a mean reading as suggested by Mr. Dunn. However, none of these makeshift methods appears to indicate a full and clear-cut realization of the basic principles involved in the matter. None of the experimenters have, to my knowledge, brought forth precise and comprehensive formulae such as those shown in (15) and (16) on p. 595 of the May JOURNAL.

I do not agree that Mr. Dunn in describing his Duplex Method in *British Kinematography* has given a clear-cut, well crystallized comprehension of all the factors involved, as well as a formula for accurate solution of the problem. For instance, his formula for calibration of incident light meters was preceded by a quite similar formula on p. 14-6 of the *I.E.S. Lighting Handbook*, published in 1947. Neither formula takes into account the vital factor of geometrical relationship of subject, camera and light source. If this relationship were understood it would seem that it would have been put into Mr. Dunn's formula.

It is of interest to examine under specific conditions Mr. Dunn's recommended method of operation. As an example, we find that Mr. Dunn's Direct Duplex Method would give identical exposure control settings for a *cross-lighted* arrangement (90° keylight angle), and a *back-lighted* arrangement (135° keylight angle), where other factors remain constant. Reference to instructions issued by leading color film manufacturers (see Note 5, my paper) will show that a considerable difference in exposure control setting is recommended for *cross-lighted* and *back-lighted* conditions. The difference is usually about one *f*-stop. It is generally believed that reversal color film will not tolerate an error of one *f*-stop. Therefore Mr. Dunn's "two-readings" method when used with color film under the common conditions described above will give errors which lie outside the acceptance latitude of the film. This also negates Mr. Dunn's statement (next to last paragraph in his letter) that his method lines up with recommendations of film manufacturers

August 5, 1950

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New Members

The following have been added to the Society's rolls since the list published last month. The designations of grades are the same as those in the 1950 MEMBERSHIP DIRECTORY:

Honorary (H) Fellow (F) Active (M) Associate (A) Student (S)

- Alaimo, James J.**, American Television Inst. Mail: 4652 N. Kenmore Ave., Chicago 40, Ill. (S)
- Anderson, A. Stephen**, Recording Technician, 949 Third Ave., New York 22, N.Y. (M)
- Band, Edward A.**, Television Engineer, National Broadcasting Co. Mail: 1317 Second Ave., New York 21, N.Y. (A)
- Benham, E. E.**, Television Engineer, KTTV, Inc. Mail: 5240 Beeman, North Hollywood, Calif. (A)
- Blackwell, L. H.**, Cinematograph Engineer, L. H. Blackwell & Co., 133 Empire Rd., Perivale, Greenford, Middlesex, England. (M)
- Brown, Robert J.**, American Television Inst. Mail: Arlington Trailer Ct., Arlington Heights, Ill. (S)
- Buckingham, William D.**, Engineer, Western Union Telegraph Co. Mail: 86 Post Lane, Southampton, Long Island, N.Y. (M)
- Casterlin, Charles C.**, Head Paying-Receiving Teller, Hamilton National Bank, Dupont Circle Branch. Mail: 3345 Stephenson Pl., N.W., Washington 15, D.C. (A)
- Chinn, Howard A.**, Chief Audio & Video Engineer, Columbia Broadcasting System, Inc. Mail: 6 Knollwood Rd., Tuckahoe, N.Y. (M)
- Creutz, John**, Radio Engineer, Old Dominion Dr., McLean, Va. (A)
- Davies, Hugh B.**, Sound Service Technician, Gaumont-Kalee Ltd. Mail: 6 Cornish Rd., Toronto, Ontario, Canada. (A)
- Davis, Harold C.**, American Television Inst. Mail: 1313 W. Grenshaw, Chicago, Ill. (S)
- Diebold, Jerome C.**, Executive Assistant, Wilding Picture Productions, Inc. Mail: 1345 Argyle St., Chicago, Ill. (M)
- du Preez, H. S. J.**, Technical Organizer, Karfo Films. Mail: 53 Sixth Ave., Melville, Johannesburg, South Africa. (M)
- Edey, Erwin**, Sound Timer, DeLuxe Laboratories, Inc. Mail: 15 Lindley Ave., Tenafly, N.J. (A)
- Faust, Roland J.**, Motion Picture Writer-Director, Indiana University. Mail: 2126 E. Seventh St., Bloomington, Ind. (M)
- Fegan, Albert A.**, Electronic Technician-Projectionist, U. S. Navy & Local Theaters. Mail: 17 W. Magnolia St., Stockton 3, Calif. (A)
- Foulds, Blair**, Commercial Engineering Manager, General Precision Lab., Inc., 63 Bedford Rd., Pleasantville, N.Y. (M)
- Gawel, Eugene W.**, American Television Inst. Mail: 8200 Brandon Ave., Chicago 17, Ill. (S)