

# List of SMPTE Publications

*An illustrated booklet, This is SMPTE, explaining the Society's aims, structure and activities is available gratis from Society Headquarters.*

## Motion Pictures

- (MP-1) **Special Effects in Motion Pictures: Some Methods of Producing Mechanical Special Effects**  
By Frank P. Clark, with SMPTE Advisory Committee. A definitive guidebook to miniatures, props, pyrotechnics and other mechanical special effects. 1966 hardbound 238 pp. 113 illus. index appendix \$7.50\*
- (MP-2) **Control Techniques in Film Processing**  
Prepared by a special subcommittee of the Laboratory Practice Committee, Walter I. Kisner, Chairman. Foreword by E. H. Reichard, Laboratory Practice Committee Chairman. 1961 hardbound 181 pp. 73 illus. \$5.00\*
- (MP-3) **Principles of Color Sensitometry—Second Revised Edition**  
A report of the Color Sensitometry Subcommittee. First Edition published in 1950; this Edition revised in 1962. 1963 hardbound 102 pp. illus. \$4.00\*
- (MP-4) **Elements of Color in Professional Motion Pictures**  
Prepared by a Special Subcommittee of the SMPTE Color Committee, Wilton R. Holm, Chairman. Foreword by J. P. Weiss, Color Committee Chairman. First printed in 1957. This reprint contains a new Introduction and current information. 1967 hardbound 104 pp. color illus. \$4.00
- (MP-5) **The Motion-Picture Theater**  
Introduction by Ben Schlanger; 38 papers; 39 authorities. This book is a practical aid in the design and upkeep of motion-picture theaters. 1948 hardbound 428 pp. illus. \$2.50\*
- (MP-6) **Screen Brightness Symposium**  
A compilation of papers on screen brightness and viewing; an authoritative review. Reprinted from the August 1953 *Journal*. 60 pp. \$1.00\*
- (MP-7) **Motion-Picture Projection and Theatre Presentation Manual**  
Don V. Kloepfel, Editor. This Manual details operational information for the projectionists and theatre personnel in a concise and convenient form. It is to be used as a guideline to good motion-picture presentation in the theatre. 1969 hardbound 190 pp. illus. \$7.50\*
- (MP-8) **Proceedings of the Symposium on Super 8 Film Production Techniques**  
The Symposium was held October 2-3, 1969 in Los Angeles as part of the 106th SMPTE Technical Conference. This volume contains 14 papers, a panel discussion, standards and a bibliography. 1970 paperbound 128 pp. illus. \$2.00
- (MP-9) **Selection and Specification of Rear-Projection Screens**  
By Petro Vlahos. Reprinted from the February 1961 *Journal*. A detailed examination of rear-projection screens. 7 pp. NC†
- (MP-10) **Test Film Catalog**  
All test films and test slides produced and distributed by the Society are listed with descriptions and prices. 16 pp. NC†
- (MP-11) **The SMPTE Universal Leader for Release Prints**  
By N. R. Olding. Reprinted from the January 1965 *Journal*. A brief history of past leaders and differences between the old leaders and the New Universal Leader. 2 pp. NC†
- (MP-12) **Wide-Screen Motion Picture Systems**  
A report containing basic information on wide-screen motion pictures. Written in every-day language, the report includes dimensions and aspect ratios. 1965 17 pp. \$1.00
- (MP-13) **Motion-Picture Film—Its Size and Dimensional Characteristics**  
By J. A. Miller and A. C. Robertson. Reprinted from the January 1965 *Journal*. A status report presented on October 15, 1963, to the SMPTE Film Dimensions Committee and on September 29, 1964, to the Society's Technical Conference in New York. 19 pp. NC†
- (MP-14) **An Evaluation of Photographic Image Quality and Resolving Power**  
By Otto H. Schade, Sr. Reprinted from the February 1964 *Journal*. 38 pp. foreword 4 chapters appendix \$1.00
- (MP-15) **Traveling-Matte Photography and the Blue-Screen System—A Tutorial Paper**  
By Walter Beyer. Reprinted from the March 1965 *Journal*. The technical details of the traveling-matte process presented in five parts. Also included are four pages of two brief papers: *Laced-Process—A New System of Rear-Projection Process*, by A. Arnold Gillespie, 2 pp.; and *Black-and-White Applications of the Blue-Screen Technique*, by Joseph Westheimer, 2 pp. Both reprinted from the November 1964 *Journal*. 22 pp. \$1.00
- (MP-16) **Special-Effects Cinematography—A Bibliography**  
By Raymond Fielding. Reprinted from the June 1960 *Journal*. Includes books on special effects, articles in journals and other literature including unpublished research papers. 4 pp. NC†
- (MP-17) **Good Reading About Motion Pictures: An Annotated Bibliography**  
By Richard Dyer MacCann. Reprinted from the April 1963 *Journal*. Includes books on motion-picture history, theory and criticism, filmwriting and film techniques. 3 pp. NC†
- (MP-18) **Motion Picture Technical Terms in Five Languages**  
Reprinted from the February 1956 *Journal*. A list of frequently used technical terms in English, Spanish, French, Italian and German. 7 pp. NC†; \$1.00 for 5 copies
- (MP-19) **Man and His Sound—Expo '67**  
By Frank Lewin. Reprinted from the March 1968 *Journal*. 16 pp. NC†
- (MP-20) **Basic Principles of Stereophonic Sound**  
By William B. Snow. Reprinted from the November 1953 *Journal*. Summarizes the theory underlying stereophonic sound, with an extensive bibliography. 22 pp. \$1.00
- (MP-21) **Developments in Stereophony**  
A companion piece to (MP-20) by William B. Snow. Reprinted from the September 1953 *Journal*. Discusses current practices in stereophonic sound. 94 pp. \$1.00
- (MP-22) **Trouble Charts for Variable-Area Sound**  
By Edgar A. Schuller. Reprinted from the October 1964 *Journal*. 5 pp. NC†

- (MP-23) **The Soundtrack in Nontheatrical Motion Pictures**  
By Frank Lewin. Reprinted from the March, June and July 1959 *Journals*. Part I, Components of the Soundtrack; Part II, Editing the Components of the Soundtrack; Part III, Preparing Work Prints and Soundtracks for Re-recording; Part IV, Re-recording.  
20 pp. \$1.00
- (MP-24) **History of Sound Motion Pictures**  
By Edward W. Kellogg. Three papers reprinted from the June, July and August 1955 *Journals*.  
46 pp. \$1.00
- (MP-25) **The ABC of Photographic Sound Recording**  
By Edward W. Kellogg. Reprinted from the March 1945 *Journal*. Outlines essential principles of photographic sound recording systems.  
44 pp. bibliography \$1.00
- (MP-26) **Market Review: Nontheatrical Film and Audio-Visual-1968**  
By Thomas W. Hope. Reprinted from the November 1969 *Journal*. Eleventh and final in a series of annual surveys, reporting on selected financial and statistical developments in the nontheatrical motion-picture-audio-visual field in the United States.  
16 pp. NC†
- (MP-29) **Motion-Picture Film Widths**  
By Kemp R. Niver. Reprinted from the August 1968 *Journal*. An historical survey of film widths since the invention of motion pictures.  
5 pp. 41 illus. NC†
- (MP-30) **Forum on Motion Picture Theater Acoustics**  
This Forum, sponsored by the SMPTE Atlantic Coast Section and the Acoustical Society of America, was held on June 7, 1949 at New York. Reprinted from the August 1951 *Journal*. Included are two technical papers "Pulse Methods in the Acoustic Analysis of Rooms," by J. Moire and "Notes on Movie Theater Acoustics in Scandinavia," by Uno Ingard and the Forum Discussion.  
28 pp. \$2.00
- (MP-31) **Effect of Winding on the Projection Performance of 35mm Motion-Picture Film**  
By Paul H. Preo and Eric A. Yavitz. Reprinted from the June 1965 *Journal*.  
6 pp. \$1.50
- (MP-32) **Expo '67**  
A series of 4 papers concerning motion-picture techniques used for Expo '67: "Multi-Screens and Expo '67" by Colin Low; "The Labyrinth Pavilion at Expo '67" by Rudolph R. Epstein, J. Creighton Douglas and Peter Mundie; "A Cruciform System for Expo '67" by Wally Gentleman and J. Creighton Douglas; and "Man and His Sound Expo '67" by Frank Lewin. Reprinted from the March 1968 *Journal*.  
28 pp. \$2.00
- (MP-33) **A Classified Bibliography on Holography and Related Fields**  
By John N. Latta. Contains approximately 500 references to holographic literature. Reprinted from the April and May 1968 *Journals*.  
24 pp. \$2.00
- (MP-34) **Luminance—A Tutorial Paper**  
By Robert E. Levin. The different values of luminance are examined and the method for applying these values is given. Reprinted from the October 1968 *Journal*.  
8 pp. \$1.50
- (MP-35) **Tungsten-Halogen Replacement Lamps for Standard Incandescent Types**  
By T. M. Lemons and R. E. Levin. Data on the effectiveness of the tungsten-halogen studio lamps are presented and pertinent factors to their use are discussed. Reprinted from the November 1968 *Journal*.  
6 pp. \$1.50
- (MP-36) **Acoustic Response in Motion-Picture Theaters and Control Rooms**  
A series of five papers reprinted from the December 1969 *Journal*: "An Acoustic Response Standard" by Petro Vlahos; Draft Proposal for Standardizing Acoustic Response of a Monitoring Chain in Motion-Picture Control Rooms; "Standardized Sound Reproduction in Cinemas and Control Rooms" by Lennart Ijungberg; "A Report on Listening Characteristics in 25 Danish Cinemas" by Erik Rasmussen; and "The Evaluation and Standardization of the Loudspeaker-Acoustics Link in Motion Picture Theaters" by C. C. Buckle and A. W. Lumkin.  
24 pp. \$2.00
- (MP-37) **Special Photographic Effects and Equipment**  
Two papers which appeared in the July 1962 *Journal*: "Special Photographic Effects as an Aid to Low-Budget Production" by Wally Gentleman, and "Film Registration Systems Used in Process Photography—A Tutorial Paper" by John P. Kiel.  
Available in a copy of the *Journal*. \$2.00

## Instrumentation and High-Speed Photography

- (RV-1-4) Since 1949, papers on high-speed photography published in the *Journal* have been reprinted from time to time in paperbound volumes. Volumes 1, 2, 3 and 4 are out of stock. They are now available on microfilm or as xerographic reprint copies from University Microfilms, Inc., 313 N. First St., Ann Arbor, MI 48106. They should be ordered as SOC M PIC & TV ENGS OP 4231 V1 (\$4.55), V2 (\$6.20), V3 (\$5.55) and V4 (\$5.95).
- (RV-5) **High-Speed Photography, Reprint Volume 5, First International Congress on High-Speed Photography (see (P-1) below)**
- (RV-6) **High-Speed Photography, Reprint Volume 6**  
Contains papers published in the *Journal* in 1954-57.  
200 pp. \$3.50\*
- (RV-7) **Instrumentation and High-Speed Photography, Volume 1, Series II**  
Contains 43 papers reprinted from the *Journal*, 1957-1960 (with the exception of one paper first published in 1955). Table of contents and index plus cumulative index of papers published in Volumes 1 through 6 of previous series.  
1960 187 pp. paperbound illus. \$4.00\*
- (RV-8) **Instrumentation and High-Speed Photography, Volume 2, Series II**  
This latest volume in SMPTE's high-speed photography reprint series brings up to date the authoritative record that the Society began publishing in 1949. Many of the papers have been supplemented since their original publication in the *Journal*. The volume features a cumulative index for all eight volumes published in the two SMPTE high-speed photography series, and includes abstracts in French, German and Spanish.  
1963 200 pp. illus. paperbound \$5.00\*
- (RV-9) **Bibliography on High-Speed Photography**  
Compiled by Elsie Garvin and made available through the courtesy of Eastman Kodak Co. This is cumulative. Contains earlier entries of the January 1951 and December 1953 bibliographies (reprinted from the *Journal*) plus entries through 1959.  
48 pp. paperbound NC†
- (RV-10) **Some Automatic Methods of Lens Design**  
Reprinted from the March 1967 *Journal*. Preamble, J. S. Courtney-Pratt; "Lens Design by Statistical Analysis" by Berlyn Brixner; "Designing Lenses With a Computer" by C. A. Lehman; written questions and answers concerning the two papers above; Discussion by nine panelists.  
26 pp. illus. \$2.00

- (P-1) **1st International Congress on High-Speed Photography (Symposium at the 72nd SMPTE Conference, October 1952, Washington, DC), SMPTE Reprint Volume 5**  
 All high-speed photography papers available at the time this book was printed are published herein. Papers are printed in English.  
 1954 359 pp. paperbound \$4.50\*
- (P-2) **2nd International Congress on High-Speed Photography (2ème Congrès International de Photographie et Cinématographie Ultra-Rapides, September 1954, Paris)**  
 Proceedings (Photographie et Cinématographie Ultra-Rapides) published by Dunon, 92 rue Bonaparte, Paris 6, France. Papers were printed in the languages in which they were given, with summaries in English, French and German.  
 1956 455 pp. hardbound \$17.25‡
- (P-3) **3rd International Congress on High-Speed Photography (September 1956, London)**  
 Proceedings published by Butterworths Publications, Ltd., 88 Kingsway, London W.C. 2; in USA by Butterworths, Inc., 7300 Pearl St., Bethesda, MD. Papers are printed in English.  
 1957 417 pp. hardbound \$13.00‡
- (P-4) **4th International Congress on High-Speed Photography (IV Internationaler Kongress über Kurzzeitphotographie und Hochfrequenzkinematographie, September 1958, Cologne)**  
 Proceedings (Kurzzeitphotographie) published by Verlag Dr. Orthmar Helwich, D-61 Darmstadt, Hoffmannstr. 59, Germany. Papers are printed in the language in which they were given, with summaries in English, French and German.  
 1959 340 pp. hardbound \$22.00‡
- (P-5) **5th International Congress on High-Speed Photography (October 1962, Washington, DC)**  
 Edited by J. S. Courtney-Pratt. Proceedings published by the SMPTE. Contains 103 technical papers, seven summaries, abstracts, discussions and indexes. Papers printed in English. Abstracts of all papers also in French and German. Available on microfilm; also as xerographic reprints from University Microfilms, Inc., 313 N. First St., Ann Arbor, MI 48106. It should be ordered as SOC M PIC & TV ENGS OP 4231 V5. \$23.45‡
- (P-6) **6th International Congress on High-Speed Photography (September 1962, The Hague/Scheveningen, The Netherlands)**  
 Proceedings published by H. D. Tjeenk Willink & Zoon N. V., P.O. Box 113, Haarlem, The Netherlands. Papers are printed in the language in which they were given, with summaries in English, French and German.  
 1963 796 pp. hardbound \$30.00‡
- (P-7) **7th International Congress on High-Speed Photography (September 1965, Zurich, Switzerland)**  
 Proceedings published by Verlag Dr. Orthmar Helwich, D-61 Darmstadt, Hoffmannstr. 59, Germany.  
 1967 640 pp. hardbound ‡
- (P-8) **8th International Congress on High-Speed Photography (June 1968, Stockholm, Sweden)**  
 Proceedings published by John Wiley & Sons, Inc., 605 Third Avenue, New York.  
 1968 515 pp. hardbound \$31.00‡
- (P-9) **9th International Congress on High-Speed Photography (August 1970, Denver, Colorado)**  
 1970 est. 800 pp. hardbound \$40.00\*

## Television

- (TV-1) **Considerations in Color Film Production for Color Television**  
 Reprinted from the May 1964 *Journal*. A report of the SMPTE Color and TV Subcommittee, John M. Waner, Chairman. Presented April 13, 1964, at the SMPTE Conference in Los Angeles.  
 8 pp. NC‡
- (TV-2) **Television Bibliography**  
 A listing of all papers on television that appeared in the *Journal* from January, 1940 through December, 1969.  
 56 pp. NC‡
- (TV-3) **TV Studio Lighting Nomenclature**  
 Television studio lighting terms compiled by the Television Studio Lighting Subcommittee on Nomenclature, George H. Gill, Sr., Chairman. Reprinted from the June 1964 *Journal*. A useful reference.  
 1 p. NC‡
- (TV-6) **SMPTE Color Television Subjective Reference Test Films and Slides—Issue No. 3**  
 By John M. Waner and Edward P. Ancona, Jr. Reprinted from the July 1967 *Journal*.  
 2 pp. NC‡
- (TV-7) **Monochrome Test Patterns for Television**  
 By K. Blair Benson. Reprinted from the December 1967 *Journal*.  
 2 pp. NC‡
- (TV-8) **Color Television: Papers Selected From the Journal of the SMPTE**  
 A collection of 27 tutorial papers, a bibliography and a collection of Standards and Recommended Practices covering fundamental aspects of color television.  
 1970 paperbound 236 pp. illus. \$7.50\*
- (TV-9) **An Engineering Approach to Color Telecine**  
 By S. F. Quinn, D. H. McRae and F. David E. Corley. Three papers which present a unified approach to the problem of color telecine. Reprinted from the March 1969 *Journal*.  
 12 pp. \$1.50
- (TV-10) **Automatic Color Locking Systems**  
 A series of four papers and a Panel Discussion reprinted from the August 1969 *Journal*: "Introduction" by Richard W. Rodgers; "Color Picture Source Synchronization by the Natlock System" by D. N. Gregory, J. L. Bliss, I. D. B. Millar and C. J. Allen; "Remote Color Genlock" by Robert J. Butler; "Synchronization of Remote Program Sources for Color TV Broadcasting" by Hans Schmid; and "The CBS Automatic Color Wire-Lock System" by Frank Davidoff.  
 20 pp. \$2.00
- (TV-11) **Portable Color Cameras**  
 Three papers which appeared in the November 1969 *Journal*: "A Digitally Controlled Miniature Color Camera" by Renville H. McMann, Jr. and Richard G. Streeter; "A Portable Color Television Camera System" by Max Berry and John Poole; and "Design of an Ultra-Portable Color Television Camera System" by Max H. Mesner, Frank Lang, Derek Binge and F. J. Bingley.  
 20 pp. \$2.00

## Standardization

(See also (MP-10) *Test Film Catalog*.)

- (ST-1) **The SMPTE and the American National Standards Program**  
 By Alex E. Alden. Discusses the role the Society plays in the establishment of American National Standards in motion pictures and television.  
 4 pp. NC‡

- (ST-2) **International Standardization (Report of the Latest Meeting of ISO/TC 36)**  
By Alex E. Alden. The work of the Technical Committee and its history and organization are briefly described and current proposals and recommendations are listed.  
4 pp. NC†
- (ST-3) **Index to SMPTE-Sponsored American National Standards and SMPTE Recommended Practices.**  
2 pp. NC†
- (ST-5) **SMPTE Standards Subscription Service**  
The service supplies all approved Standards and Recommended Practices which are sponsored by the SMPTE and which are validated during the calendar year. Draft Standards and Proposed SMPTE Recommended Practices are published in the *Journal* and are not included in the subscription service. Write to SMPTE for detailed information regarding this service.
- (ST-6) **The Role of the Society of Motion Pictures and Television Engineers in Audio Standardization**  
By H. W. Knop, Jr. Reprinted from the April 1968 *Journal*.  
4 pp. NC†
- (ST-8) **The Role of Standardization in Technological Progress**  
By Alex E. Alden. Reprinted from the September 1966 *Journal*.  
1 p. NC†
- (ST-9) **Photo-Instrumentation Glossary**  
Defines those terms generally used in the photo-instrumentation discipline, but for which there were no accepted definitions. Reprinted from the June 1969 *Journal*.  
1 p. NC†
- (ST-10) **Magnetic Video Tape Recording Glossary**  
Sets forth the key terms and definitions agreed to by the Video Tape Recording Committee. Reprinted from the June 1970 *Journal*.  
1 p. NC†

## Recommended Practices

- RP 1 Recommendations for 16mm and 8mm Sprocket Design
- RP 3 Lens Mount Surface for High-Speed Motion-Picture Cameras
- RP 4 Reporting Photometric Performance of Incandescent Filament Lighting Units
- RP 5 Dimensions of Patch Splices in 2-in Video Magnetic Tape
- RP 6 Reference Carrier Frequencies and De-Emphasis Characteristics for 2-in Quadruplex Video Magnetic Tape Recording
- RP 7 Density and Contrast Range of Black-and-White Films and Slides for Television
- RP 8 Safe Action and Safe Title Areas for TV Transmission
- RP 9 Dimensions of Double-Frame 35mm 2 × 2 Slides for Precise Applications in Television
- RP 10 Video Alignment Signal Specifications for Quadruplex Video Magnetic Tape Recording
- RP 11 Tape Vacuum Guide Radius and Position for 2-in Quadruplex Video Magnetic Tape Recording
- RP 12 Minimum Screen Luminance for Drive-In Theaters
- RP 14 Plotting Data from Sensitometric Strips Exposed on Type Ib2 (Intensity Scale) Sensitometers
- RP 15 Calibration of Densitometers Used for Black-and-White Photographic Density Measurement
- RP 16 Specifications of Tracking Control Record for 2-in Quadruplex Video Magnetic Tape Recordings
- RP 17 A Photographic Recording Technique for Measuring High-Speed Camera Image Unsteadiness
- RP 18 Test Film for Checking 16mm Motion-Picture Photographic Sound Projectors
- RP 19 Specifications for 8mm Registration Test Film
- RP 20 Specifications for 16mm Registration Test Film
- RP 21 Dimensions of 35mm Rewind Spindles
- RP 22 Specifying Graph Paper Used in Inter-Laboratory Exchange of Plotted Sensitometric Data
- RP 23 Reinforcement of 70mm Positive Splices
- RP 24 Dimensions for 16mm Motion-Picture Camera Spindles
- RP 25 Sound and Picture Synchronization on Motion-Picture Film Relative to the Universal Leader for Magnetic and Photographic Tracks
- RP 26 Label Specifications for 2-in Quadruplex Video Magnetic Tape Recordings
- RP 27.1 Specifications for Operational Alignment Test Pattern for Television
- RP 29 Video Test Tape for Quadruplex Video Frequency Magnetic Tape Recorders Operating at 15 in/s and Practice LBM of SMPTE Recommended Practice RP 6
- RP 30 Video Test Tape for Quadruplex Video Frequency Magnetic Tape Recorders Operating at 7.5 in/s and Practice LBM of SMPTE Recommended Practice RP 6
- RP 31 Video Test Tape for Quadruplex Video Frequency Magnetic Tape Recorders Operating at 15 in/s and Practice LBC of SMPTE Recommended Practice RP 6
- RP 32 Specifications for a Super 8 Test Film for Projectors and Printers
- RP 33 Specifications for 35mm Subjective Picture Test Film for Theaters and Review Rooms
- RP 34 Dimensions for 16mm Motion-Picture Projector Reel Spindles
- RP 35 Specifications for Theater Test Film for Motion-Picture Projection Sound Reproducing Systems
- RP 37 Color Temperature for Color Television Studio Monitors
- RP 39 Specifications for Maintaining an Emulsion-In Orientation on Theatrical Release Prints

## Periodicals

- (JL-1) **Journal of the SMPTE**  
Published monthly. Subscriptions: \$26 to nonmembers. Outside continental USA, add \$1.00 for postage. Single copies: \$2.50; \$3.00 for special 2-part issues. Information available at SMPTE, Headquarters, 9 East 41st Street, New York, NY 10017.

### Back Issues

Single copies of the *Transactions* or *Journal* from 1930 to date, when in stock, are available at \$2.50 each; \$3.00 for special 2-part issues. *Those now out of print are: Transactions* No. 1, 2, 5, 6, 7, 8, 9, 11, 14, 16, 18, 30, 31 and *Journals* dated April 1934, January 1938, April 1939, July 1941, April 1944, January and August 1945, January 1947, January, July, August, September and November 1949, January and February 1950, May 1954.

- (JL-2 7) **Indexes of the Journal of the SMPTE**  
JL-2, 1930-1935, \$2.00; JL-3, 1936-1945, \$3.00; JL-4, 1946-1950, \$2.00; JL-5, 1951-1955, \$2.50; JL-6, 1956-1960, \$2.50; JL-7, 1961-1965, \$2.50.

## Binders (Publications not included)

- Journal of the SMPTE Binders**  
Rod-binder holds a year's issues (12) plus Directory.  
(Not including postage) \$3.50
- Binders for SMPTE-Sponsored American National Standards and SMPTE Recommended Practices**  
Durable leatherette ring binders in sets of two  
For North America (Postage included) \$11.00  
Other areas of the world \$12.00

\* Less 20% to SMPTE members, libraries and booksellers; less 25% for 5-49 copies; less 33 $\frac{1}{3}$ % for 50 or more copies. Foreign postage extra.  
† No charge for single copies. Quantity costs on request.  
‡ Order direct from publisher.  
§ Less 10% to SMPTE members for single copies only. Quantity costs on request.