

ción contiene 23 subtítulos. Esta introducción será de inmensa ayuda para el usuario de este diccionario, a la vez que altamente instructiva.

El libro ésta a la par de las más altas normas de McGraw-Hill en cuanto a su encuadernación durable y de buen gusto, tipo de impresión, y papel. En suma, este diccionario se recomienda como altamente útil al traductor, redactor, o escritor técnico en ambas lenguas: la del Cervantes y la de Shakespeare.

— Pablo Weinschenk-Tabernero

Lens Design Fundamentals

By Rudolf Kingslake. Published (1978) by Academic Press, Inc., 111 Fifth Ave., New York, NY 10003. 366 + ix pp. Diagrams. 6 × 9 in. Price \$26.

Like many of the 300 or so practicing lens designers in the United States, this reviewer is a former student of Professor Kingslake, so the material in *Lens Design Fundamentals* is familiar. In fact, the book departs only slightly from Kingslake's lecture material that evolved and was refined during his more than 45 years of teaching lens design at the University of Rochester.

Lens Design Fundamentals is intended by Kingslake to be a modern textbook dealing with the classical approach to lens design. Basically, classical lens design is separated from modern lens design by the advent of the computer. It must be appreciated that there are few practical analytical solutions in lens design, that the designs of a lens involves nonlinear relationships that complicate numerical solutions, and that an enormous number of calculations is required regardless of

whether the lens is designed by computer or by classical methods. If lens design were merely a matter of refining a previously known lens, there would be scarcely any practical need to concern ourselves with classical techniques. Today's computer programs are phenomenal; no professional lens designer would even think of working without them. Yet, refinement is only part of the lens designer's job; he must be able to see ahead, he cannot afford to work blindly if he has a budget, nor can he rely on experience because there may be none where he needs to go. This is where the designer falls back on his grasp of basic principles to come up with the most attractive, if not the only solution to the problem. Not to say that we absolutely need an awareness of classical design technique; it just seems the process of advanced lens design is simplified by having it. As a source of instruction, Kingslake's book is certainly quite lucid.

Only the most ambitious would expect to become a skilled designer after reading a book, nonetheless, *Lens Design Fundamentals* provides the disciplined and dedicated reader the chance for a good foundation. The truly serious student may want to use a programmable calculator or microcomputer to alleviate the tedium of raytracing. No complicated mathematics are used, but bear in mind that the material in this book constitutes that used in a two-semester graduate level college course. There is a lot to learn and it cannot be rushed through.

Kingslake makes a number of incorrect statements regarding astronomical instrumentation, and some of his opinions on areas of optical practice (as opposed to optical design) are not shared universally. The usual advice given any reader applies here, i.e., don't believe everything you read, particularly in re-

gard to negative comments. Nobody's perfect.

Considering the small number of students studying lens design, and in view of Professor Kingslake's retirement, we are indeed grateful that this low-priced and handsomely produced book has been made available. It is a worthwhile investment for anyone curious about the workings of a lens design.

— R. A. Buchroeder

Motion Picture Camera Data

By David W. Samuelson. Published (1979) by Focal Press, Inc., 10 E. 40 St., New York, NY 10016. Softbound. Price \$9.95.

David Samuelson's latest booklet, *Motion Picture Camera Data*, is not one that you will want to curl with for a delightful evening of escapist reading. Probably most of it will merely be thumbed through quickly. The part that may be particularly applicable, however, may be worth its weight in gold at the prevailing price. Fiction it is not. *Motion Picture Camera Data* is an encyclopedia about specific current motion picture cameras. After a few pages of general information relative to all cameras, Mr. Samuelson then describes in detail the features of over 30 different cameras of various manufacture. These explanations are written very clearly in terms most helpful to cameramen. Also included are various instructions such as steadiness testing, and even what to do when a camera is dropped in sea water. Mr. Samuelson's lifetime familiarization with motion picture cameras shows through clearly. His professional experience adds considerable authenticity to this excellent reference book. — William D. Hedden

50 years ago in the Journal

M. W. Palmer and A. J. Richards, "A Proposed New Method of 'Timing' Negatives," August 1930

I will first explain briefly what is meant by "timing." Everyone who has experimented with photography has encountered the problem of "timing" his negatives. An exposure is made in the camera and then developed into a negative. This negative must then be printed, or in other words, light must be allowed to pass through it onto a sensitized emulsion to produce a positive. The proper amount of light to be used for this is determined by trial and error; several exposures are made with various light values, and the proper exposure is determined in this way, the results of the incorrect exposure being thrown away. Exactly the same procedure is followed in

printing motion picture negatives, with the exception that the negatives are inspected by a "timer," before printing, and he records his best judgment as to the proper value of light which should be used. In some cases the judgment of this "timer" proves to be correct, but many times it is not, and millions of feet of film have to be reprinted. Sometimes a negative has to be printed five or six times, before a satisfactory result is obtained.

L. E. Clark, "Some Considerations in the Design of Soundproof Camera Housings," August 1930

... The best devices, from a sound standpoint, were all large and heavy, ranging in weight from 180 pounds to 225 pounds. For each of these blimps, also, a

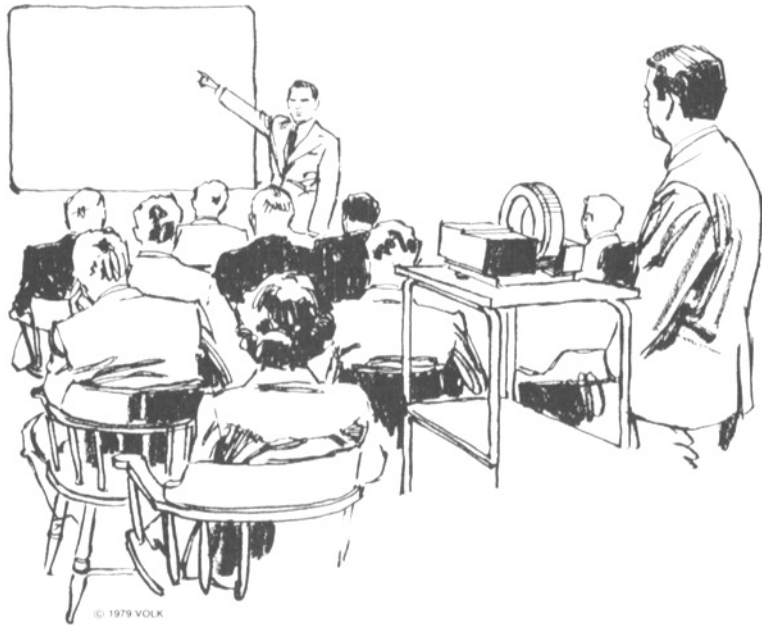
special tripod had been constructed to properly handle the extra weight, and it was more or less agreed that this sort of construction would have to be resorted to in order to provide a device adequate to fill all requirements.

Porter H. Evans, "A Comparative Study of Sound on Disk and Film," August 1930

From the handling standpoint, sound-on-film is preferred by the exhibitor and distributor. On the other hand the disk method has the advantage that the problems of equipment and maintenance in the theater are greatly simplified. From the standpoint of quality, sound-on-disk has in the past given consistently better results because of the greater simplicity of the reproducing equipment and the absence of speed variation. As theater reproduction of sound-on-film improves this advantage of the disk method will gradually disappear. From a cost standpoint the sound-on-film is preferred by the exhibitor who does not take into account the effect of quality on the box office returns. From the producers' standpoint, the relative cost of the two methods depends on the sound film life. At

Can you speak before an SMPTE Audience?

SIGN UP WITH SMPTE'S NEW SPEAKERS BUREAU



The SMPTE has created a speakers bureau for members and other interested people who feel qualified to speak before SMPTE audiences.

In addition to giving you an opportunity to share your expertise with others in your field, this will be a service to the program chairmen

of the sections who often require qualified speakers to give talks at local section meetings.

If you are willing and able to talk at section meetings on subjects of interest to SMPTE members, please fill out the form below and return it to the address noted.

Mail this coupon today!

Return to:

**SMPTE Speakers Bureau
862 Scarsdale Ave., Scarsdale, NY 10583**

I am interested in signing up with the SMPTE Speakers Bureau.



Name _____ Title _____

Company _____ Tel. No. _____

Address _____

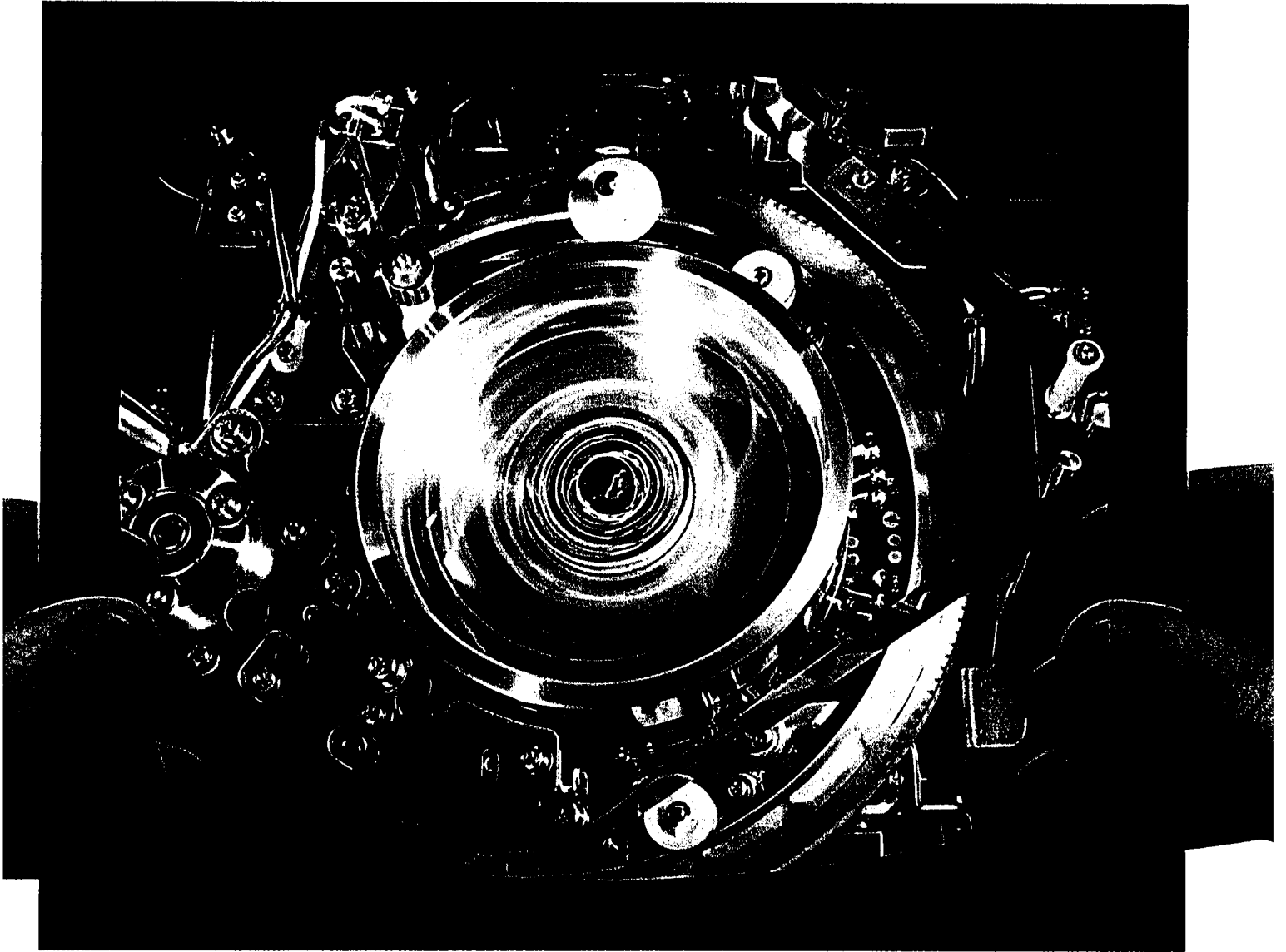
City _____ State _____ Zip _____

Topic on which you are qualified to speak _____

Locations where you are most able to speak _____

Other conditions on which your speaking may hinge _____

Video:



**It's time
for a new approach.
Introducing
JVC's TapeHandlers**

JVC has taken a new look at 3/4" Video Cassette Recording, with an eye for what you've been looking for.

Stability. Reliability.
Gentle tape handling.
Economy.

Take a look inside one of JVC's new TapeHandlers. You'll be amazed at what you don't see.

No pulleys.
No belts.
No idlers.

Instead, Direct Drive reel servos that keep tape tension constant for smooth and stable tape transport, reliable tape shuttling.

A simplified tape threading mechanism for gentle tape handling.

Four brushless motors that directly drive the capstan and drum servos to give stability and reliability, reduce luminance jitter to less than ± 5 microseconds.

A die-cast aluminum chassis to give strength, promote easy interchangeability, keep weight down.

NOT JUST NEW MECHANICAL DESIGN. NEW ELECTRONICS.

JVC's TapeHandlers not only have a new way to handle your tape, they have new electronics, too.

FM-FM direct dubbing capability for multi-generation duplication.

Microprocessor-based control logic for reliability and ease of operation.

Extremely stable horizontal phase lock.

Fully electronic tape counting and timing, with a brilliant fluorescent display.

UTMOST VERSATILITY. SIX UNITS. BROAD INTERFACING CAPABILITY.

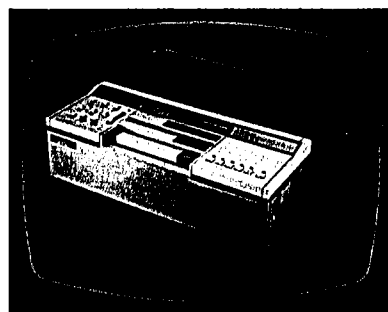
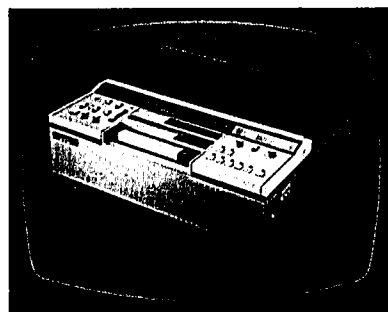
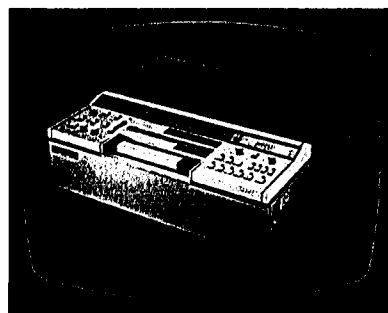
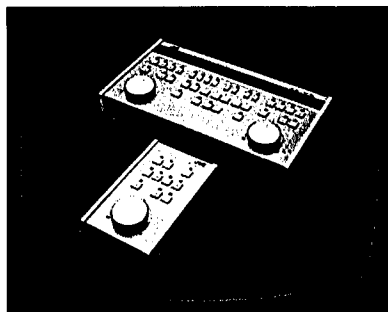
JVC's heavy-duty TapeHandlers have been designed to have wider use than just professional video productions.

With their ruggedness, the six separate units can be used in varying combinations by anyone involved in video. And they interface without modification with most other microprocessor-based editing units on the market.

These units are just a start. Other fully compatible products, complementary in function, are soon to follow from JVC. The advances incorporated in the TapeHandlers are too important not to be extended to all who want and need to use video, at any level.

CR-8200U TapeHandler: THE NEW-GENERATION RECORDER/EDITOR.

The leader of JVC's TapeHandler Series is the all-purpose CR-8200U Recorder/Editor. A built-in rotary erase head and blanking switcher make it



easy to perform automatic assemble (back space) editing and split insert editing—a must for professional quality video productions. The new FM-FM dubbing system transfers the chroma and luminance signals in FM form, to cut deterioration significantly. Capstan servo, of course, for top editing performance. Random access capability. Direct mode change without going through "Stop," to allow full remote control. Sub-carrier and external sync capability for use with Time Base Correctors. And, naturally, the new TapeHandler Direct Drive reel servo system to keep tape tension constant in all modes.

The CR-8200U TapeHandler is the ideal core unit around which to build a fully automatic electronic editing system

CR-6600U TapeHandler: THE FULL-FUNCTION RECORDER WITH ASSEMBLE-EDITING CAPABILITY.

The CR-6600U is the videotape recorder designed for the busy studio. Its rugged construction and gentle tape handling give you the kind of reliability you need when workloads are heavy. The built-in automatic pre-roll mechanism and blanking switcher let you do assemble editing using only the record and pause buttons. FM-FM dubbing makes it perfect as a master VTR for multi-generation dubbing. Microprocessor-based logic allows full remote control. Two audio level control meters. External sync capability. TBC connections.

This is the recorder you'll value for its quality, reliability, versatility.

CP-5500U TapeHandler: THE COST-EFFICIENT PLAYER WITH ON-AIR QUALITY.

Want a low-cost player for stable and reliable on-air playback? That's the CP-5500U. Or use it with the CR-8200U and

an automatic editing control unit and you have a superb, fully automatic electronic editing system. Or take advantage of its FM-FM dubbing capability and use it as a companion to the CR-6600U.

It's a TapeHandler, with the stable tape transport that makes it perfect for these critical applications.

MICROPROCESSOR-BASED EDITING REMOTE CONTROL UNITS.

JVC offers you a choice of compact control units: the easy-to-operate RM-88U for precise timing of machine functions, the low-cost RM-82U, and the RM-70U full remote control unit with shuttle-search function. All are based on a full logic circuit using a microprocessor. And all have JVC's new SOFTOUCH shuttle-search control for fast and accurate location of editing points. Turning the rotary dial varies the tape playback speed continuously from still to 5 times normal, in both forward and reverse. When the desired speed is reached, just let go, and it remains locked at that speed. When you change modes, the dial automatically returns to the still position. No locking latches or pulling of knobs when you change from still to playback speed.

GET ALL THE DETAILS

Call your JVC Dealer. He'll be glad to demonstrate the TapeHandlers for you and let you try them for yourselves. Or, if you prefer to read about them first, send for our detailed catalog that spells out their specifications.

Write US JVC Corp., 58-75 Queens Midtown Expressway, Maspeth, NY 11378.

Phone toll free
800-821-7300
Ext. 7005

(In Missouri: 800-892-7655, Ext. 7005).



Your choice.
Now. **JVC**[®]
US JVC CORP.

Cinelux-Xenon



For the brightest picture you need the fastest lens

The Cinelux-Xenon MC 1.6 projection lens by ISCO has solved many a brightness problem particularly for drive-ins and indoor theatres using the 1.85 format.

This outstanding lens, the fastest made today, features a larger aperture so that more light can reach the screen. Each of the six lens elements has been specially designed and multi-coated. These features combine to maximize light output as much as 80% more than your present lens. Sharpness, contrast and brilliance are outstanding. And because the elements are air spaced rather than cemented, there's no cement to burn and cause "brown" spots.

Test the Cinelux-Xenon on your own projector and see the difference. ISCO, the world's leading manufacturer of theatre projection lenses, offers a complete range of lenses for all theatre projection applications.

Cinelux-Xenon

THEATRE PROJECTION LENSES BY ISCO

Distributed in U.S.A. and Canada exclusively by
Schneider Corporation of America,
185 Willis Avenue, Mineola, N.Y. 11501

Announcing SMPTE's Brand New Jiffy Test Film. This 16-mm color sound film helps you to quickly check and evaluate the sound performance and picture quality of your projector.

THE JIFFY

A projector sound and picture test film. Available in photographic (optical) and magnetic sound.

SMPTE Jiffy test films contain a series of picture and sound samples to help you subjectively evaluate the performance of your projector. Titles appear in each section to indicate what is being tested and the purpose of the test. The film is easy to use. No special instruments are required. Each film is accompanied by an instruction sheet indicating the procedure to be used in checking out the projector's sound and picture characteristics.

The Jiffy test films are made as prints in accordance with SMPTE Recommended Practice 18. They have 1R-3000 perforations.

The black-and-white Jiffy, for years SMPTE's most popular film is still available in 16-mm photographic (optical) sound only. This Jiffy is a print with 1R-3000 perforation. It is made in accordance with SMPTE Recommended Practice RP 18.

The SMPTE Jiffy films check out these important functions:

For sound:

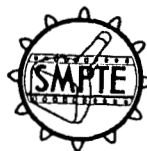
- Faithful Reproduction of Wide-Range Music
- Piano Sound for Checking Wow and Flutter
- Correct Soundtrack Guiding (buzz track for photographic sound version only)
- Normal Volume Level (700 Hz tone)
- Compromise Sound Focus (photographic sound version only)
- Frequency Response at Normal Program Level
- Dialogue Intelligibility

For picture:

- General Image Steadiness (vertical and horizontal)
- Uniform Projected Picture Brightness
- General Picture Quality (sharpness and contrast)

P16-PP-C	(160 ft, 16-mm color film, photographic sound)	\$42.00
M16-PP-C	(150 ft, 16-mm color film, magnetic sound)	\$82.00
P16-PP	(135 ft, 16-mm black-and-white film, photographic sound)	\$25.00

Order your Jiffy test film now! Use codes and indicate quantity. Payment with order, please. Make checks payable to SMPTE.



SMPTE Jiffy
862 Scarsdale Ave.
Scarsdale, NY 10583

the present time there is little choice between the two. As the sound film life is improved by more careful handling the cost of this method will decrease. In other words sound-on-film appears to have many potential advantages which, if realized, should make it superior to sound-on-disk but until they are realized in practice we prefer disk.

25 years ago

Edward W. Kellogg, "History of Sound Motion Pictures (Final Installment)," August 1955

. . . The drive-in theater was first proposed and advocated by R. M. Hollingshead, a businessman of Camden, N.J., not affiliated with motion-picture or electronic interests. The first such theater was built near Camden in 1933. In the earlier experiments with the system, effort was made to put out enough sound power from a screen speaker to enable patrons to hear satisfactorily in their cars. This presented great technical difficulties, and also would have restricted theaters to locations where the noise would not be too objectionable. Several arrangements were tried, one with loudspeakers distributed over the field so that each speaker provided some for two cars side by side. This was a great improvement from the noise standpoint, and the theaters previously equipped with screen speakers were converted. However, these "out-car" speaker arrangements still left something to be desired on the score of general noise. The "in-car" speaker, introduced by RCA in 1941, provided sound which was much more satisfactory to patrons and practically eliminated the neighborhood-noise problem. In the design of "in-car" speakers, the qualities of ruggedness, conveniently small size without too much sacrifice of sound quality, and immunity to damage by weather were design objectives.

K. Sadashige and B. F. Melchionni, "Control of Light Intensity in Television Projectors," August 1955

RCA's television projectors used with Vidicon film cameras are equipped with a light-intensity control unit developed for this purpose. The unit is used to control the video output level of the camera by varying the intensity of the projector light source to compensate for varying film density. The angular position of a continuously variable neutral-density filter wedge placed in the condenser-lens system of a projector is remotely controlled by a servomechanism. Thus the signal-to-noise of the system is maintained at its optimum value since the camera is operating with essentially constant input level.

RONFORD. BETTER SUPPORT.



Working with a Ronford is like getting behind the wheel of a Rolls: the equipment responds precisely and unvaryingly to your directions. Professionalism demands nothing less.

RONFORD FLUID HEADS: Fit any camera/lens combination, adjust for "neutral" balance. Patented ultra-smooth fluid-damped action with repeatable multi-step adjustment. Mate with bowl fittings on all standard tripods, 360° pan, wide-range tilt.



RONFORD LOW-ANGLE AND SUCTION-MOUNT ACCESSORIES: Versatile, eliminates need for hi-hat. Creates new shooting possibilities. Rapid, positive setup. Compatible with other standard fittings.



RONFORD STANDARD LEGS: Available in light, medium and heavy duty models. Absolutely rigid in all positions. Positive, quick-action lock. Exclusive "no-stoop" height adjustment.

Ronford products are available for sale, rental or long-term lease at Camera Mart. The Headquarters for professional equipment... with the personal attention and factory-authorized service professionals appreciate.

SUSTAINING
SMPTE
MEMBER

Member Professional
Motion Picture
Equipment Association
mppea

Camera Mart
THE CAMERA MART, INC.
456 West 55th Street, New York 10019
(212) 757-6977 / Telex: 1-2078
Sales • Service • Rental





Cheops
2600 BC

Aäton
1980 AD

Georges Hofer, Cameraman (Swiss Aäton agent)

The film medium will not have the stability over centuries that Cheops has had...

AÄTON

But, in the last 50 years, the essential characteristics of 16 and 35 mm film standards have not changed.

Contrary to video, film owes its uniqueness to the fact that it is visible, comprehensible to the naked eye without the intermediary of decoding equipment : it is a «natural» medium. Film can be cut, intercut, recut, and edited by hand. This inherent «transparence» is at the root of **film's universality**, and of course of its non-obsolescence.

Because film is by definition transparent, it is logical then that any improvement to the film system should retain the **natural readability** of the medium. So when it came to adding a time address to the film, Aäton chose what filmmakers interpret most easily : clear **letters and figures**.

In 1968, Jean-Pierre Beauviala, a young professor of electronics (and later founder of Aäton) took out patents on an ingenious system that would allow **clear arabic figures** to be exposed between perforations as the film passed over the gate in a 16 mm camera. The camera would be instructed by a master clock, so that each second a complete address including time indication to the second would appear on the film edge. The same master clock would insert the address and time indication into a standard Nagra III. Thenceforth, every second of film and tape would contain a complete set of information, and could be matched together with absolute accuracy.

The essential point was to make a system as clear and simple as possible : the intended user was the **independent cameraman**. The choice of any coded system was out : too expensive to buy decoding equipment, modify editing tables, etc. The choice of an alpha-numeric system was natural. The user had to be able to «**read**» **with the naked eye** without depending on complex and expensive machines.

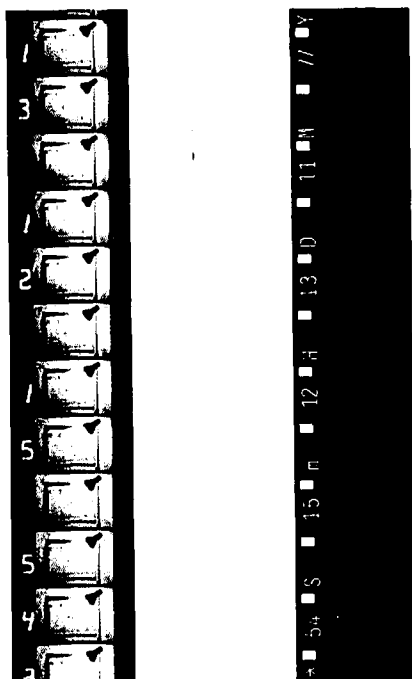
CTR Not only were we there when it all started, but we started it all : Clear Time Recording

In 1977, Aäton elaborated on the basic ideas of J-P Beauviala's clear figure invention (intended to keep to a minimum the modifications to existing sound recorders and editing tables) and presented in London a working system of Clear Time Recording, based on extensive use of **microprocessor technology**. This was a first in the industry.

And in 1980, another improvement has been brought to the system : to the clear figures have been added letters — **words**. The filmmaker now finds himself with a complete system on film, audio tape, and paper. **PAPER ?**

Words and numbers on the edge of the 16 mm film *projected during exposure*. Words and numbers on the perforated 16 mm magnetic tape *printed in white during transfer*.

Words and numbers on paper : a **daily printout**. At the end of each day, a small module retrieves from each camera and sound recorder the times and durations of all takes. The module is then connected to a mini-calculator printer to supply a cross-referencing document.



1977 NOVEMBER 13
CAMERA NO 02

TAKE 1
START 12H 15M 54S
STOP 12H 17M 30S
DURATION: 1M 36S

TAKE 2
START 12H 20M 32S
STOP 12H 25M 18S
DURATION: 4M 46S

Film, tape and paper : the date was November 13, 1977, time 12:15 54 and after.

Contrary to a popular myth circulating in the industry, Clear Time Marking is **not wildly expensive**. The rumour of high cost can be attributed to the complexities of the European Broadcasting Union choices, which Aäton has not espoused. On the contrary, the Aäton CTR has the advantage of requiring a strict minimum of new equipment and modifications, and uses an international signal standard (ASCII computer interchange).

Last year, the Swedish TV co-produced a film on the ABBA pop group : six Aätons shooting over a five night period. Tomas Dyferman, Technical Director of the film, felt that the use of Aäton CTR not only greatly facilitated the shoot itself (i.e. no more wasted footage after clapper; clear indications on TV monitors at all times, etc.) but also **cut the post production time in half**. That is where the saving is.

Time is of the essence.



Rune Ericson, Cameraman (Swedish Aäton agent)

AATON

Aaton Inc
1697 Broadway
New York NY 10019
USA
Tél. (212) 541.8181

Aäton S.A.
B.P. 104 Cedex
38001 Grenoble
France
Tél. (76) 42.64.09