

# Book Reviews

## English-Spanish, Spanish-English Encyclopedic Dictionary of Technical Terms (3 vols.)

By Javier L. Collazo. Published (1980) by McGraw-Hill, 1221 Avenue of the Americas, New York, NY 10020. 2216 pp. 8 × 10 in. Price \$142.

The first, overwhelming impression this three-volume dictionary elicits is one of sheer fascination; fascination with the author's meticulous collection of terms and meanings in two languages over a span of more than 25 years; fascination with the hefty total volume of the dictionary that resulted; fascination with the painstaking and precise work done by the author in annotating, categorizing, grouping, defining, and cross referencing such a vast amount of words (4,000,000 words; 143,000 entries and subentries) in hundreds of technological fields. Many of these fields are of specific interest to the members of our Society. They include (but are not limited to) such topics as: acoustics, chemistry, cinematography, computers, data processing, electroacoustics, electronics, engineering, illumination, magnetic recording, mathematics, mechanics, optics, photography, radio, radio-communications, radioelectricity, stereophony, telecommunications, television, video systems, and many, many more.

Javier L. Collazo, the author, is manager of RCA's translation services, member of the IEEE, charter member of ATA (American Translators Association), and member of PTH (Publicistas y Traductores Hispano-Americanos — Spanish Translators and Copywriters). He is a native of Cuba, and his many years of association with RCA as well as his 30-years stay in the United States have given him authoritative mastery not only of both the languages, but also of the extensive technological vocabulary he has to deal with professionally every day. The result is what the dust-jacket calls rightfully "more like a bilingual reference library than a dictionary." As for the presentation of the terms and their translations and equivalents, the reader is referred to two illustrative examples appearing at the end of this note.

One interesting fact about this work is that there is a much greater number of English-to-Spanish entries (over 100,000) than Spanish-to-English entries (over 43,000). The reason probably is that over the years technological developments and advances have come about, in a very great measure in English-speaking countries, to a point where English terms or their local adaptations have started invading many other countries' technological languages for want of a proper word in their national idiom. The usefulness of this dictionary resides precisely in that it is helpful in bridging this communications gap. It will help the English-speaking engineer or designer in explaining his work to his Spanish-speaking counterpart, it will help the Spanish-speaking to find their way through an ever increasing

maze of English technical terms. Not only will it help in translating between the two languages, but it will educate the user in the best sense of the word.

The book is exceedingly well organized. A very complete 54-page introduction in both languages describes such items as: scope and contents; fields and subjects; organization and main features. Among the latter there are described such matters as: systems of alphabetization of entries; spellings and variants; abbreviations, acronyms, symbols; SI prefixes and symbols, English compounding and hyphenation, American vs. British terminology; trademarks and names; and many more — there are 23 subheads in Section III of the introduction. The introduction will be immensely helpful to the user of the dictionary, being at the same time most instructional.

The book is up to McGraw-Hill's finest standards of durable and stylish binding, printing and paper. All in all, this dictionary is recommended as highly useful to the technical translator, editor, or writer in the languages of both Shakespeare and Cervantes.

— Pablo Weinschenk-Taberner

**transition** transición, tránsito, paso, transformación, mudanza || (*Canalizaciones*) cambio de sección [de régimen] || (*Cine/Tv*) transición, paso de una imagen o escena a otra. *cf.* transistor || (*Ferroc*) enlace || (*Tracción etc*) transición. Paso de un acoplamiento [motor combinación] a otro sin corte total de las corrientes de los motores (CEI/57 30-15-175). *cf.* series-parallel transition, series-parallel shunt transition, shunt transition || (*Mús*) transición. Modulación, especialmente la de naturaleza transitoria; cambio repentino de clave || (*Fis/Nucl*) transición, transformación. *sin.* transformation | transición. Paso de un sistema de un estado energético discreto a otro. *v.* quantized system || (*Guíasondas*) transición, adaptación | adaptador de cable coaxil, transición guía-coaxil. Transición o adaptación entre una guía de ondas y una línea coaxil. *sin.* coax transition | *v.* transition element || (*Impulsos*) transición. *sin.* positive transition, negative transition, transition time || *v. tr.* transition of... || *verb:* (*Carreteras, Vías férreas*) unir con curva de transición. *v.* transition curve.

**derivación** derivation; deduction, inference; diversion; overflow; bypass; bypath; branch, branching; leading [taking] off; tapping || (*Elec*) shunt, shunting, shunt connection; tap, tapping; branch, branching, branch circuit; branch, line tapped off a line of greater importance; path (of an armature winding); leakage, loss (of electricity due to loss of insulation) || (*Math. Medicine, Gram*) derivation.

**English-Spanish, Spanish-English Encyclopedic Dictionary of Technical Terms — Diccionario Enciclopédico de Términos Técnicos, Inglés-Español, Español-Inglés (3 tomos)**, por Javier L. Collazo. Fecha de publicación 1980, Editorial McGraw-Hill, 1221 Avenue of the Americas, New York, NY 10020. 2216 páginas, 20 × 25 cm. Precio US\$ 142,-

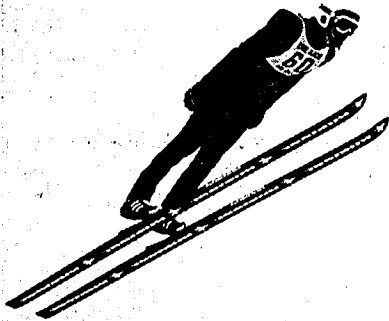
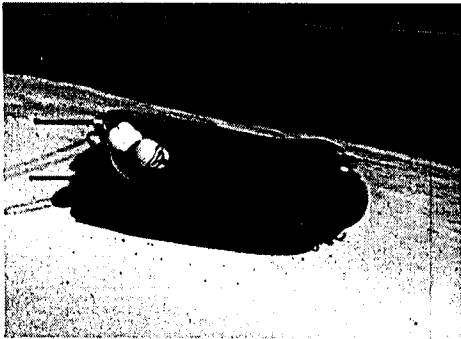
La primera y preponderante impresión que emana de un repaso de este diccionario en tres volúmenes es la de la más completa fascinación; fascinación para con la obra meticulosa

del autor en recolectar términos e interpretaciones en dos idiomas durante un período de más de 25 años; fascinación para con el ponderoso volumen total del diccionario que resultó; fascinación para con el trabajo esmerado y preciso, ejecutado por el autor en anotar, ordenar por categorías, agrupar, definir, y proveer de referencias recíprocas tan vasta cantidad de palabras (4.000.000 de palabras; 143.000 términos y subtérminos) en centenares de campos tecnológicos. Muchos de estos campos son de interés específico para los miembros de nuestra asociación, la SMPTE. Incluyen ellos, sin limitarse a ello, tópicos tales como: acústica, química, cinematografía, computadoras, procesamiento de datos, electroacústica, electrónica, ingeniería, iluminación, grabación magnética, matemáticas, óptica, fotografía, radio, radiocomunicaciones, radioelectricidad, esoterofonía, telecomunicaciones, sistemas de video, y mucho, mucho más.

Javier L. Collazo, el autor, es el director del servicio de traducciones de la RCA, y es miembro de la IEEE (Institute of Electrical and Electronics Engineers), miembro fundador de la ATA (American Translators Association), y de la PTH (Publicistas y Traductores Hispanoamericanos). Es oriundo de Cuba, y sus muchos años al servicio de RCA como así también sus 30 años de radicación en los EE. UU. le han dado autoridad en el dominio no solamente de los dos idiomas, sino también del extenso vocabulario tecnológico que constituye su ocupación profesional diaria. El resultado es lo que la sobrecubierta del libro llama acertadamente "más bien una biblioteca de referencia en dos idiomas que una simple diccionario." En cuanto a la presentación de los términos y de sus traducciones y equivalencias, el lector puede encontrar dos ejemplos ilustrativos precediendo esta reseña en español.

Un hecho interesante con respecto a esta obra es que contiene un número mucho mayor de artículos del inglés al español (más de 100.000) que del español al inglés (más de 43.000). La razón probablemente es que por muchos años las mejoras y los adelantos tecnológicos han provenido en gran medida de países de habla inglesa, a tal punto que los términos ingleses o sus adaptaciones locales han comenzado a invadir el lenguaje tecnológico de muchos otros países, a falta de la palabra apropiada en su idioma nacional. La utilidad del presente diccionario reside precisamente en que ayuda a establecer un puente sobre esta brecha en la mutua comprensión. Ayudará al ingeniero o diseñador de habla inglesa a describir su trabajo a su colega de habla castellana; y ayudará al que habla español a encontrar camino a través de la cada vez más densa maraña de términos técnicos en inglés. No solamente ayudará a la traducción entre los dos idiomas, sino que educará al consultante en el mejor sentido de la palabra.

El libro ha sido sumamente bien organizado. Una introducción completa de 54 páginas en los dos idiomas describe tópicos tales como: alcance y contenido; campos y materias; organización y características principales. Entre estas últimas se describen objetos tales como: sistemas de alfabetización de entradas; variantes ortográficas de voces inglesas; reglas para las abreviaturas, siglas, y símbolos; prefijos y símbolos SI; formación de compuestos y uso del guión en inglés; terminologías americana y británica; marcas registradas y nombres comerciales; y muchos otros más. — El capítulo III de la introduc-

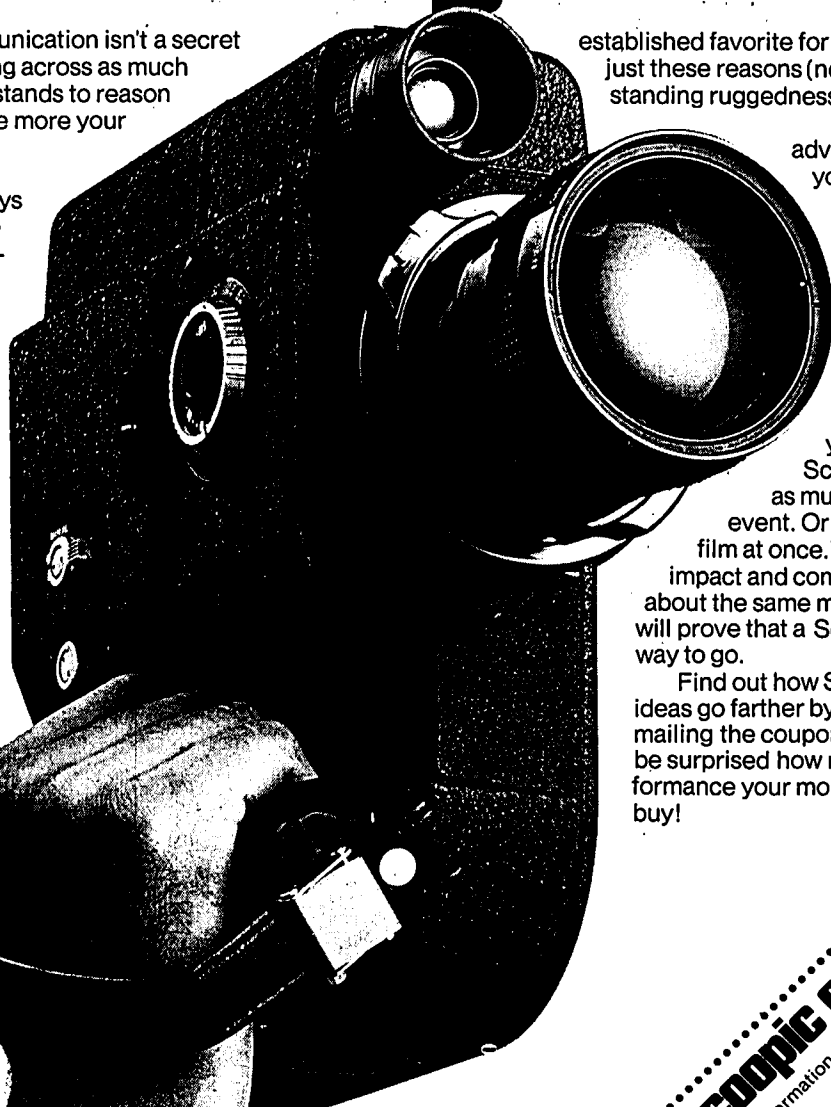


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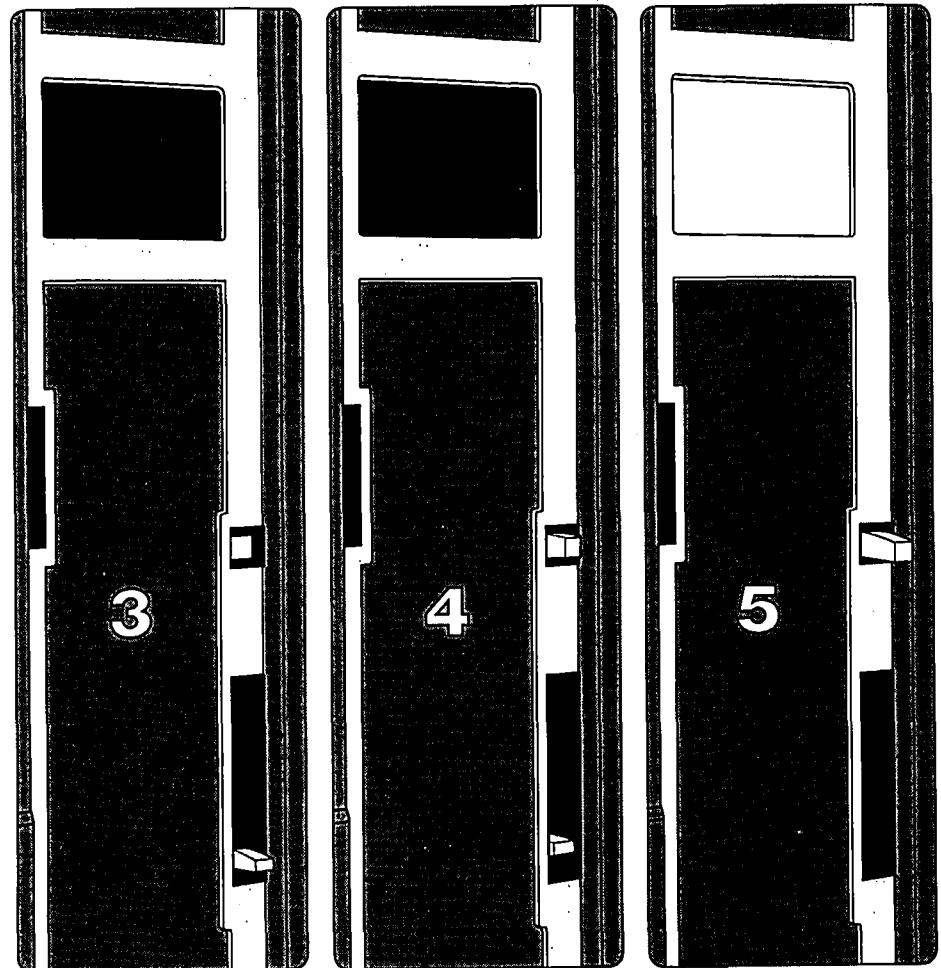


**Continuous film control: five stages.**

1. Shutter has just closed. Registration-pin has begun retracting, claw has engaged the film.
2. Claw is halfway through its pull-down. Registration-pin is fully retracted.
3. As claw nears end of pull-down, registration-pin begins to emerge again.
4. Claw begins retraction. Registration-pin protrudes to move the film to its final exposure position and hold it there.
5. No movement. Claw is fully retracted. Registration-pin is fully out and motionless. Shutter has now opened for exposure.

# The 16SR registration pin:

What seems to be an unsharp lens is sometimes a slightly unsteady image.



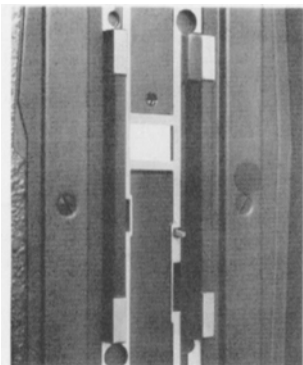
**A**t 24 fps, a 30 minute film contains 43,200 photographs. Each of them should be exposed on film that isn't moving. In frames that are positioned *just so*, one after the other.

**A registration-pin movement costs more to build and is harder to make silent. Why do we insist on one?**

Of the moving parts in a 16SR movement, 40% have to do with the registration-pin. Clearly, we *must* think it important. And ARRI has been making cameras since 1917, so we've had time to think about it.

Between exposures, the claw must move the film a relatively large distance, fast. During exposure, the claw must hasten back up to do it again. The 16SR registration-

# Technology of the 16SR / One of a Series:



**Interaction tolerance: 0.0004 inch.**

pin positions the film, slowly, and holds it there during the exposure, motionless.

These are distinct functions. In the 16SR, therefore, claw and pin have independent control mechanisms. (Nevertheless, their interaction tolerance is 0.0004 inch.) The pin is shaped like an optical printer sprocket. And since it *moves* the film to its final exposure position, the relationship of the image to the sprocket-hole is *identical every time*.

### The heart of the matter: Control at every step.

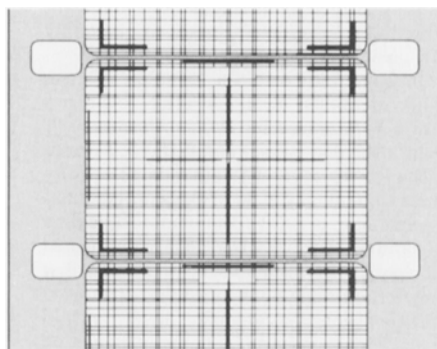
Either the claw or the pin is engaged in a film perforation *at all times*. At every stage of the pulldown, positioning and exposure cycle, the film is under positive control.



**How sharp is that lens? It can depend on the camera.**

Before image unsteadiness gets bad enough to be per-

ceived as such, it can appear to be lack of sharpness. A registration-pin movement costs more money. So does a first-quality lens. They go together. It would be illogical to save money by matching an expensive lens with a pinless camera.

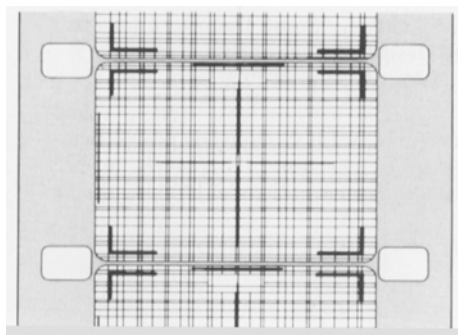


### Double exposure steadiness test:

Each new 16SR is tested by running a length of film through it. As part of the test, we shoot a grid-pattern target. After the first exposure, we offset the target slightly, wind the film back and re-shoot (see illustration above).

### When you buy a 16SR, you get the test film for that camera.

We project each camera's test footage. If film registration weren't perfect, the superimposed second grid image would be seen to move on the screen in relation to the first. *But it doesn't.* When you buy a 16SR, you get a small blue box containing that piece of test film.



### Is it *always* necessary?

Movies have been made without a registration-pin, of course. But the pin can improve image quality from good to excellent. And it provides assurance that the camera will perform under adverse conditions and for a very long time.

### No; just sometimes.

If you have to shoot in tropical or freezing weather, or in high humidity. If you're under extra G force loads (in a car or plane). If the camera is getting on in years, or hasn't been overhauled lately. If you have to super titles, or shoot at high speed. If the rawstock isn't fresh out of the refrigerator. *That's* when the registration-pin earns its keep.



# 16SR

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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