

TECHNICAL NEWS

How Leacocks Super 8 System Works

Richard Leacock's new Super 8 system is explained by the man himself in the latest issue of the University Film Study Center's Newsletter. We take the liberty to reprint the article here in its entirety.

"It has become almost a cliché to say that film, the moving image, is the medium of the younger generation. The American Film Institute lists some 1,400 courses offered by colleges in film. John Culkin, Director of the Institute for Understanding Media, estimated that there are something in the neighborhood of 5,000 courses offered in some aspect or other of film in secondary schools.

It has been our view that almost all such programs have been somewhat frustrated in that the cost of 16mm synchronous sound film equipment is so high that most filming has been done with either 16mm silent cameras or 8mm silent cameras, often with some music added on a separate 1/4" tape. This condition has forced students to confine themselves to problems in film making that date back to about 1929, rather than coming to grips with contemporary film problems.

A little more than two years ago we set out to design a complete Super 8mm filming system that is both sophisticated and cheap. In order to achieve this, we based the entire system on readily available, mass produced units, which with minor modifications and with the addition of rather ingenious "black boxes," result in a double sync sound filming system.

The camera is standard Nizo which is housed in a small but very effective aluminum sound blimp. The "black box" contains a quartz crystal that controls the camera speed to exactly 24 f.p.s. \pm 4 parts in a million.

The sound is recorded on a Sony cassette recorder. A synchronizing signal from a quartz oscillator is recorded on one channel and the audio on the other. There is no cable connecting the sound recorder to the camera; a general solution in that X cameras will all be in sync with Y tape recorders.

While the film is being developed, the sound is transferred through a third black box into a slightly modified 1/4" tape

deck which is loaded with full-coated magnetic sprocket holes and the black box compares this count with the sync signal it is getting from the cassette tape. The result is that the sprocketed magnetic sound exactly matches the picture film.

Our editing table is a horizontal system somewhat like the German Steenbeck editing table but much cheaper.

When editing is completed you load your track on the transfer machine and your picture on the projector, which is connected through the same black box to the transfer machine, and holds the two units in exact sync.

If you have more than one track, you need extra decks and black boxes, and then, of course, you can do a mix.

At this point one must decide what final form the film will take, and it can be any one of a number of forms. Go straight to video tape, go to 16mm sound projectors, to the Super 8mm striped composite print, or direct to cable T.V.

The system has been used at both UFSC summer schools and in one section of our introductory course at MIT.

John Terry shot some 800 rolls of color film for an NET program on an American family. I shot about a hundred rolls on an election campaign in Puerto Rico this summer, and I love shooting with this equipment. Having started my career in 35mm, then graduated to 16mm, I have now made it to 8mm.

My own preference for final form is video cassette. If you make a 20 minute film in color with a five to one shooting ratio, edit original (with care and cleanliness), then go directly to Sony 3/4" color video cassette, the total out-of-pocket cost is about \$120.00, and the final product seen on your color TV set is in no way inferior to a film shot in 16mm or even 35mm. At least, I can't see the difference, but then perhaps I'm prejudiced."

Richard Leacock

The University Film Study Center is a consortium of colleges and universities in the New England area. Member institutions include Boston University, Brandeis, Dartmouth, Harvard, M.I.T., Wellesley, Wesleyan, and Yale. Peter Feinstein, its director, describes the purpose of the

Center this way:

"Campus filmmaking has broken away from the vocational, industry oriented programs that were viable back when there were jobs available, students were interested in working as grips while waiting for the big break, and the Hollywood myth still had some credence.

(The University Film Study Center) is a group of universities, all well established, well respected academic institutions, pooling facilities, information and resources to save themselves from the tumbling, costly rush to film studies. Instead, they moved ahead at a moderate, and non-competitive pace, while maintaining and developing a collective resource to insure the quality of cinema studies at the individual schools."

The UFSC's second Summer Institute was well attended, and the one-hundred and thirty-two students had the benefit of one of the strongest media-faculties ever assembled for one program. (Brakhage, Leacock, Vanderbeek, Passer, Dewitt, and Petric to name just a few) In addition to seminars and screenings, the participants had a chance to each make a complete film of their own (using Leacock's Super 8 system) of up to 30 minutes in length, complete with sync sound. And all for less than \$150.00 in cost. Reportedly the synchronization was perfect and the quality of the image more than satisfactory.

In addition to the Summer Institute, the UFSC organizes an annual New England Student Film Festival, bringing guest filmmakers to visit schools in the New England area, a film archive, and plans to develop various materials for use in film curriculums, including updated standard texts and study guides. Their Newsletter is interesting reading indeed, and can be requested from University Film Study Center, Box 275, Cambridge, Massachusetts 02138, U.S.A.

This might not have that much to do with Canadian filmmaking, but it is an indication of what can happen when an area comes of age, filmically speaking. The UFSC seems to be an indication where the art of filmmaking is heading in North America.

More Super 8 News

The Pathe Electronic DS8 Camera should do more to advance the role of film in education than anything that has come before. It accepts up to 400' loads of double super 8 film. Ektachrome 7242 and 7252 stocks are available as well as Kodachrome and Black and White Emulsion. Full processing and printing facilities for these films now exist in Canada.

The camera has a built in Pilot-tone generator for highly professional standard sync-sound recording and an Angenieux 8 to 1 f19 zoom lens with automatic exposure control and manual over-ride. Film speeds are 8-80 frames per second.

Kingsway Film Equipment Ltd. are pleased to announce the acquisition of the distributorship for the Bellevue Pathe Super 8mm editing table. This table features sync sound editing with Super 8 picture and 16mm magnetic sound. The workprint and original are conformed by an edge numbered dummy roll.

The 4-reel rewind arms that are adjustable for two speeds, viewer, amplifier with sound reader and a 4-way synchronizer are just a few of the outstanding features.

The compact size (2' x 4') and versatility (Table top accessories can be built to nearly any specifications) make this Super 8mm Editing Table a real professional. Both the camera and the table are now available through Kingsway Film Equipment Ltd., Toronto.

For further information contact:

Mr. C. Rhodes
Kingsway Film Equipment Ltd.
821 Kipling Avenue
Toronto 18, Ontario

New Products and Developments

The Society of Motion Picture and Television Engineers held its semi-annual technical Conference at the Century Plaza Hotel in Los Angeles, October 22-27. Among the subjects discussed were laboratory practices and television systems, photosensitive materials, sound recording and reproduction, and the Great Film-Tape Debate - Coexistence or Conflict?

At the sound recording session Leo O'Donnell of the National Film Board of Canada delivered a paper introducing his new technique called the Time Index System. This revolutionary new method eliminates the need to slate or mark by clap board the beginning of takes in double-system sync shooting. It in effect makes the cameraman and the soundman completely independent of each other.

"One of the major values of the new system," O'Donnell is quoted as saying, "is for the filming of *cinéma verité*, documentaries, or newsreel footage, in

which the introduction of the slate is often a disturbing influence on the subject and can result in a loss of a shot through the time involved in shooting the slate."

It sounds even better than tail slating. The date and exact time are marked by the use of this system on both the film and the tape accurately (to the 24th of a second). All that needs to be done in editing is to match the marks and presto! No film wasted, no interview subjects unduly disturbed or frightened by a loud clapboard or an assistant yelling Shot 1 Take 27, no mikes ruined by a too forceful "tap," etc.

With a bit of accuracy on the camera report sheet, the editor will still have the basic information necessary to sync and classify each shot. Coupled with a cableless, crystal controlled sync-sound system, Leo O'Donnell's new Time Index System, once mass-produced and readily available, will go a long way to shed another cumbersome aspect of the technical end of filmmaking, leaving more room and freedom on the creative end.

16mm Viewer/Editor with Halogen Lamp

The professional, heavy-duty 16mm Viewer/Editor, Model 16-H, with halogen lamp is announced by Maier-Hancock Industries.



This unit, equipped with blower and a long-life 12V, 50W halogen lamp, provides approximately 4 times more light than the conventional incandescent lamp.

An exclusive feature incorporates four rollers, one sprocket wheel, and a mirror-finish film pressure plate. It operates in both directions, feeding from left or right. Light automatically turns off when film gate is opened, and dust filter for optics is easily cleaned. A viewing screen hood is optional.

Literature available on request. Price, \$205.00; Delivery, immediate.

For further information, contact: Maier-Hancock Industries, 13212 Raymer Street, North Hollywood, California 91605, Phone: (213) 875-2008.

Instrumentation Marketing Corporation appointed exclusive Shotec distributor

Instrumentation Marketing Corporation has been appointed exclusive international distributor of the SHOPAK portable, rechargeable battery power pack, according to R. Freeberg, President of the Burbank, California-based firm.



The new units, ideal for applications in photo-instrumentation, photographic lighting, cinematographic equipment or wherever rechargeable DC power supplies are required, feature a series of sealed lead/colloidal-electrolyte batteries designed to be spill-free, to require no water or level checking and are operable in any position. In addition, they feature voltage selectability of 6-, 12-, 18-, 24- and 30-V DC outputs and with a 7-1/2 Ah capacity at a 20-h rate with the recharging unit using a built-in diode logic circuit to accommodate an unbalanced cell-discharge pattern.

The SHOPAK measures 10-1/4" x 13" x 5-1/2", weighs 27 lbs. and is furnished with a protective panel cover.

Custom models are available delivering various current and voltage requirements to customers' specifications.

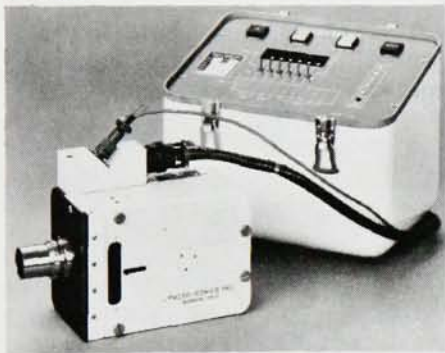
This new line of Shotec power packs more fully rounds out the Company's photo-instrumentation systems capabilities.

LED Film Data Recording System

The new Photo-Sonics LED Photo Digital Recording System is announced by Instrumentation Marketing Corporation, exclusive distributors, 820 South Mariposa Street, Burbank, California.

The system, which records Time and/or Event on every frame of motion picture film, presents information in parallel form, allowing a complete word to be written at once. Consequently, by looking anywhere on the film, time or other data can be read to that point with no reference to any other point on the film. Result is decrease in errors and

many man-hours saved in readout time. It features an internal crystal-controlled oscillator for time, allows entry of fixed numerical data via thumb switches, allows entry of external data from other sources, and has an output for driving up to six additional cameras. It records 9 digits of time to 23 hours, 59 minutes, 59.999 seconds, which is positioned between sprocket holes on 16mm film. Larger formats are available for 35mm and 70mm cameras. IRIG translation is also available.



(Could this be connected in any way with the above mentioned Time Index System? Seriously, if anyone knows what this futuristic gadget is all about, please write and let us know at *Cinema Canada*. We're all very curious. Apologies to Instrumentation Marketing Corp. for our ignorance.)

The New Breed

by Ron Wegoda

Of interest to all Cameramen and particularly those engaged in shooting Newsfilm is the introduction over the past few months of extremely lightweight, portable, single-system cameras. In nearly all cases they are based on the time tested and almost universally used Bach-Auricon movement. The new breed of camera is constructed of Magnesium which reduces the weight of the body by about 2 lbs. A Magnesium Magazine of 400 ft. capacity is unbelievably lightweight (the roll of film seems to weigh more). This coupled with an Amplifier which weighs in at 1 1/4 lbs. and we are really starting to see and feel the benefit of modern technology. The greatest weight reduction is however being effected by the elimination of the separate Power supply. Today's cameras have either built in 'State of the Art' a/c invertors weighing a few ounces or are

totally d/c driven. In either case the camera is now cordless, with built-in batteries of tremendous capacities for their small size.


Two of the Cameras that will be seen more and more as re-equipping goes on, are the Frezzolini Cordless and the CP-16. The latter camera is d/c powered, crystal controlled and weighs in at 15 lbs. It can be run on a/c power via a supplied accessory that also charges the battery. This camera has yet to negotiate a Canadian Winter and it will be interesting to hear from users in this regard. The Frezzolini Camera which is a/c powered from a small built-in battery and inverter, was used last Winter successfully out West. In appearance it is exactly like the 400 ft. conversion that has been standard for so many years. With the Magnesium body, magazine, battery and film it weighs in at 17 lbs. A behind the lens filter slot is standard and the drive is crystal-controlled. This camera will also run off wall outlet a/c power or can be driven by using any existing Frezzolini power pack such as 1000DX or 100D. It is truly versatile. Incidentally the capacity of the internal battery is eight 400' rolls. As an assist in extremely cold weather operation a spare battery may be carried in a convenient pocket and connected via short cable to the camera and if the internal battery won't give enough juice then a switch to external power is made.

The Frezzolini people will have available in about two months a d/c version of this camera for those who would prefer it. The heart of this camera will be an extremely small, very reliable motor that draws very little current. By using this motor the relatively large a/c motor, which weighs about 1 lb., will be eliminated and at the same time the built in electronic package will be smaller. Of course the batteries will have greater capacity as less power is consumed with

the d/c motor, which incidentally weighs a mere 3 ounces. Also in an advanced state of preparation is a Camera designated the LW-1. This camera again from the Frezzolini Co. will weigh an unbelievable 12 1/2 lbs. ready to roll. The writer has had the prototype model in his hands and can state that it's no lie or pipe dream. The profile of the body was reduced and a slant-back configuration for the magazine used. The casting moulds for this camera are now in the process of manufacture, and it is expected to have the first production models by February '73.

Not to forget our own Canadian made Auricon conversion. The Trenka Company based in Ottawa, is continuing to custom build their all in one single-system camera. The salient features of this camera are that it uses 360 ft. spools mounted co-axially and a built-in V. U. meter to monitor sound level enclosed within the viewfinder. The camera is crystal-controlled in either a/c or d/c versions. The battery may be attached to the camera or carried separately in a small case. The lens is also rather well protected but the total weight is 22 lbs. without battery. All the users of this camera seem satisfied and it is obviously worth consideration when choosing new equipment. The manufacturers will pretty well customize the product to fit the customers specifications. Another plus is the modularization of certain parts to enable rapid servicing and a reduction of down time.

This then is the latest in portable equipment designed mainly to help free the News cameraman from the bulky, heavy load that he has borne the last few years since the Newsrooms went for actuality sound in a big way. Perhaps some of the users of this equipment will be able to write of their experiences and give us an evaluation of the performance as more experience is gained. ●



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