

ERIC SIEGEL'S VIDEO REPORT: A Half-Inch World Video Standard; The European Scene; Electronic Correction; Videotape Publishing

Since the very first issue of *Radical Software* I have been writing about video standards. In issue number 3 I advised everyone to adopt the American 525-line standard. This seemed rational for Americans, but Europeans may have thought that I had some ulterior motive for pushing American equipment in Europe. The only motive I had was compatibility.

Now, however, I have devised a way to modify Sony type-one standard equipment so that it can also be used in Europe. In all half-inch battery operated portable VTR's there is a servo-locked head motor drum motor. American machines (in the head-drum servo) are tuned to free run at a 60-cycle alternate current driving frequency. The motor hovers at a harmonic multiple of the vertical scan rate which is the same as 60-cycle house main current.

In order to make an American standard recorder work on the European standard you readjust the driving oscillator free-running frequency to 50-cycles which is the European house main current. With this simple adjustment you can have a "world standard" half-inch videotape recorder with an American VTR and further more, all 625-line (European) tapes will be compatible with 525-line standard AV machines, which change the driving oscillator from 50 to 60 cycles. If you have a Sony AV3400 VTR the addition of two 4.7 k ohm resistors (one a series R526, the other series R527) with shorting switches across both resistors will make your machine switchable from 525-line American to 625-line European standard.

I spent last summer in Europe and demonstrated the convertible standard to video pioneer Jack Moore who subsequently has purchased an American standard (AV3400) videotape recorder. I also met another group in Paris who will also be using American standard equipment. So a true world standard may be on its way.

You have all made videotapes which contain very valuable information but which, unfortunately, have very poor quality. One of the major problems is shifting black level, which is caused by the automatic target control in the Sony AVC3400 camera. In a previous article I described how to modify your camera to eliminate this problem in the future, but this doesn't rectify tapes which are already ruined.

As you know, I have developed a special device known as the *processing Chrominance Synthesizer*. Among the various things that it does is black level correction, i.e., it enables you to manually correct black level inaccuracies. It also allows you to increase the contrast, and it fills in sync. pulses where drop-out is present on a tape. It also makes new blanking signals, new synch. signals, and it allows you to color synthesize black-and-white tapes into color. In the future it will incorporate gamma correction which gives a better tonal range to the gray scale, and image enhancement circuitry to make the picture sharper and crisper than it was originally. Thus, with one device most of the technical problems of half-inch video will be solved.

Many people wish to put their videotapes on the air. This has been done in America already. The technical process by which this is accomplished is called "scan conversion." Although American half-inch VTR's have the same scanning rate as those used on broadcast TV, they don't have the same stability. Therefore half-inch tape must be re-scanned by an accurate broadcast TV camera or an electronic scan converter. The heart of the scan converter is a special tube that looks like two oscilloscopes cathode ray tubes face-to-face. One tube scans the image from the half-inch tape. The other tube picks up the image for broadcasting.

If you can't locate a scan converter and wish to put your tapes on the air, a simple scan converter can be made by feeding your tapes into a keyed-clamp, high quality, high-resolution monitor and then focusing a high quality broadcast camera on it. If both scanning rates are the same (525 lines or 625 lines) then you can use a plumicon camera. If one scan rate is different from the other, then a vidicon camera must be used so that a retention of the image is produced thus eliminating the inter-scan beat frequency which is a 10 cycle flicker in the picture.

Sooner or later you may be contacted by a cassette company for rights to publish your half-inch video work. If you have already signed a contract you can consider it a blunder. However, if you haven't yet, I advise you not to.

Here in New York City at the present time there is a group of people including myself who are in the process of arranging a suitable organization to establish a world standard for videocassettes. If you are interested write me: Eric Siegel, c/o Howard Wise, 2 West 13th Street, New York, New York 10011; or call me at (212) 253-0082.

A RADICAL SOFTWARE STATE-OF-THE-ART REPORT



PANASONIC'S
Deluxe 1/2" Editor (Model NV3150)

EDITING DECKS

Completely reliable editing in half-inch video is not yet a reality, although the Sony AV3650 is highly useful relative to its size and cost (Retail: \$995.00; standard discount price: \$845.00). You can edit with complete success on a one-inch machine but that requires between \$4,000 and \$5,000 just for the deck; one-inch tape is twice as expensive as half-inch; and there's no compatibility between one-inch machines so your master tapes can only be played back at your place.

Thus, two companies have announced improved half-inch editing decks (compatible with all type-one standard machines), one of which promises to be the equivalent of a super one-inch editor except that it will use half-inch tape.

Both Panasonic and Ampex claim they will be selling top quality half-inch editors in the spring. Panasonic calls theirs a model NV3130. Ampex's is a model VR-420. Panasonic not only claims their deck will do perfect insert and assembly edits, but it will also be a half-inch color deck, and will have a drop-out compensator. The Ampex machine will be black-and-white and will utilize two motors, for added reliability, instead of the single motor system on current half-inch decks.

Ampex says their deck will sell for \$1,200 and will be available in April. But with Ampex it's hard to know. If they do market this machine it will be the first half-inch equipment they've ever sold. This includes their Instavideo unit which they've been promising for two years now and have put off three or four times. Moreover, the company lost \$40 million last year. Thus, while their one and two-inch equipment might be the best, their record of mismanagement makes one skeptical of their ability to deliver a reliable deck in the near future. Especially because the first months production of any new video equipment guarantees that the first purchasers have to do a company's field testing. We got burned a bit by buying the very first of the Sony AV line which wasn't as reliable as subsequent models.

As for Panasonic, they say that their half-inch deck will list for \$1,500 and be out sometime in the spring. But more important than the NV3130 model is one they call the NV3150. It will list for \$3,000 and have all the features of a good one-inch machine, including solenoid switches, two-track audio, and the drop-out compensator. Panasonic isn't quite sure, however, exactly when the deck will be available and this fall is probably the earliest, if then.

PORTA-PAKS: Sony, Sanyo, Akai, Nivico, and Ampex

When our correspondent visited the Sony factory in Tokyo last summer he was told that they are working on a lighter, more compact portable VTR. But the chances of there being a Rover III (we're currently at Rover II) in the next year or so are very slim.

Meanwhile, Sanyo has put out a brochure describing a half-inch cassette Porta-Pak which, with camera, weighs only 13 pounds (compared to 21 for the Sony). It is not compatible with anything but itself, runs at a slower speed than type one standard, has an optical instead of an electronic viewfinder in the camera, and can only record up to 12 minutes before you have to put a fresh tape in. Sanyo (which also makes Craig equipment) hasn't announced prices or delivery date yet.



SANYO
1/4" Videocassette Porta-Pak

Since we last wrote about portable video equipment (issue 3) Akai has charged up their sales network and their quarter-inch tape portable is now easy to get. From what we hear it is a good machine. But again there is the problem of its incompatibility with all but its own standard, and the lack of editing back-up. Some people are into taping maskers with the Akai and editing on Sony, which seems to work.

There is also a new half-inch portable being marketed. Its manufactured by Japan Victor and sold under the brand name of Nivico. It is type one standard and seems to be a duplication, feature for feature, of the Sony Rover II. Whether it's better or worse we don't know.

And, finally, there is Ampex Instavideo. It was the fall of 1970 when Ampex announced its Porta-Pak and showed a demo model at trade conventions. Delivery date: spring of 1971. In spring of 1971 Ampex announced they wouldn't be available until the fall. Now, of course, it's almost spring of 1972, and still no Instavideo. Postponed until 1973. What with Ampex's \$40 million loss last year we may never see it, along with EVR, and RCA's legendary laser-plastic tape videocassette player; all casualties of corporate egotism where prototypes and public relations were supposed to convince stockholders that their companies were right in there with the newest consumer technology when, in fact, they were unable to deliver.

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TAPE

Tales of cheap videotape are like talking about the weather. But every now and then real, if somewhat flawed, deals do pop up. Two companies are selling videotape at very low prices. An outfit called EHI (P.O. Box 20643, San Diego, California 92120) is listing 30 minute tapes for \$5.50 a reel in quantities of one to nine; \$5.10 a reel for ten to twenty-four; and \$4.75 for twenty-five to one hundred. Beyond that they encourage you to write for special prices. On the same quantity scale, hour tapes are going for \$9.25, \$8.45, and \$7.70. These prices are about 40% of the wholesale price of Sony videotape which itself is about 40% off the retail price. We have written EHI asking how they can sell so low but never got a reply. We imagine that they are selling re-processed tape and the one sample roll we had resembled Memorex Chroma and seemed alright for dubbing, but not for taping masters.

Another company, Dak Enterprises (P.O. Box 69920, West Hollywood, California 90069) is selling reprocessed tape, and at about the same prices. Audio tape too, cassettes included. They will send free sample reels.

Finally, there's so-called high energy tape which is supposed to store a cleaner, more powerful signal. We've tried some (Scotch), but haven't noticed any difference. Price is about 40% more than regular Sony tape. Still inconclusive. If you have experience please write us.

DEALERS

No one buys equipment at list price in Manhattan. But because demand often outstrips supply, one day's prices are gone the next, and people who you relate to as your friends nonetheless try to screw you. Naturally, we all expect the lowest prices possible. Some of the dealers will accommodate us, but other who deal mainly with industrial clients and large companies do not discount as heavily as those in touch with the video groups.

We (Raindance) do this: We first go to Technisphere (141 Lexington Avenue, New York City, 684-3136) where we know we can get good prices, honest information on delivery, and reasonably reliable back-up service. But because the owner, Jack Goldman, does not yet have a Sony dealer franchise (he does have a Sony service franchise), he must get his supplies from other dealers and thus cannot always fill an order.

If this is the case, we then call C.T. Lui at C.T.L. Electronics (86 West Broadway, New York City, 233-0754) who, because he is a dealer, often has stock. But, while Lui's prices are often the lowest possible, he has sometimes reneged on a deal after it was made. Moreover, he sometimes tries to sell new equipment that has been opened.

While Lui maintains that this is just to get a spare accessory, if you are paying fair price than it is not unreasonable to ask for sealed equipment. Lui's service, which was terrible in the past, has greatly improved under the guidance of John Brumage. Moreover, Lui has pioneered in equipment modifications and is usually well-informed about new possibilities. So check-in there and compare prices before you buy.

The third outfit with which we deal is Harvey Radio (Pro A/V Division, 444 Madison Avenue, New York City, 832-8675) which, when it has stock (which is usually), maintains discount prices as low as anyone in town. Harvey Radio is also a franchised Sony dealer. Also a good place to check before you buy.

Those of you are familiar with the dealers in New York will realize that several names are missing from this list. This is for two reasons. One, because the companies simply don't give good prices. Or two, because we feel we have been screwed by them in the past.

RANDOM INTELLIGENCE

Sony half-inch equipment can be purchased in Hong Kong at prices less than in Tokyo. An AV3400 (Porta-Pak) camera is \$500; the AV3400 deck is \$620; and an AV3650 lists for \$830. Then, if you buy in person and pay cash you can get a 15% discount. If you order by mail figure \$55 for shipping and handling, but that doesn't include duty. Address inquiries to: Fook Yuen Electronic Co., Ltd., 1106 Hang Seng Bank Building, Des Voeux Road Central, Hong Kong.

Both Eric Siegel and Nam June Paik have shown their video synthesizers in New York this winter. Paik's mutates a camera signal and adds fabulous colors, while Eric's can generate its own imagery without external input. Both are spectacular if you're interested in video imagery.

The Videofreex have built a custom camera for Shirley Clarke which allows her to wear the lens and vidicon on one arm and the viewfinder in her hand. The Freex made it from an old CV Porta-Pak camera.

Technisphere in New York City (141 Lexington Avenue, New York, N.Y. 10016) can modify the Sony AV3650 editing deck to eliminate the sound lag problem. They are charging \$25 for the modification. The problem is that with Technisphere's change you can no longer do video inserts with the 3650. So it's a trade off, inserts for no sound lag.

The CMX600 is a computerized electronic editing system which costs \$380,000.00. Developed by CBS-TV and Memorex, it allows random access to thirty minutes of video information frame by frame and can do dissolves, jump cuts, and other optical effects. Once you've decided on sequencing and effects the computer mixes your tape automatically adjusting for color correction if so instructed. Its designed, of course, for two-inch tape and super-commercial uses.

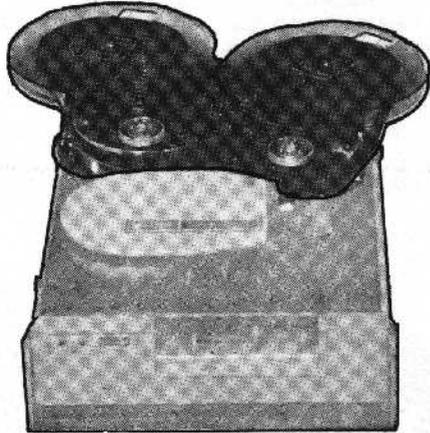
Equipment prices are going up. Sony is adding \$150 to the list price of its VTR's AV3650 and AV3400 (Porta-Pak). And the other manufacturers are following. It seems that the Japanese are into price fixing, which is illegal for American companies, theoretically at least. (The price of videotape isn't expected to go up a while, however).

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FILM CHAIN ADAPTER

A lot of good information lives on 8mm and 16mm film, but very few people have gotten into transferring it to videotape. Sony makes an attachment which takes an image out of a movie projector and prisms it into a C-Mount video camera (e.g. a Porta-Pak camera). But they manufacture it for their European catalog.

However, Harvey Radio in New York City (444 Madison Avenue) stocks some of Sony's European line, the film chain adapter included. It's a good thing to have if you want to multiply access to your films. PRICE: \$125.00.



PORTA-PAK HOUR REEL CONVERTER

In a stationary situation the Porta-Pak deck can be a hassle because the longest tape it uses is 30 minutes. If you are taping with just one deck, the activity either has to stop while you change reels or the activity goes on and you're unable to tape it. Not a major problem but for people with just a Porta-Pak deck an hour adapter might be useful.

You can buy a clip-on module to use hour reels on a portable deck from Scan Rate Inc., 27 Palm Court, Paramus, New Jersey 07652. PRICE: \$189.95.

TIME-LAPSE VIDEO

A company called Odetics in California modifies Shibaden and Sony decks (the Porta-Pak included) to do variable speed time-lapse recording. Write Odetics for prices at: 1845 South Manchester Avenue, Anaheim, California 92802.

VIDEOCASSETTES: Sony, Panasonic, Cartrivision, and the death of EVR

They're here. Almost. Sony is selling their playback only machine (color, stereo sound) for \$800, and a record/playback deck for \$1,295. Our Sony dealers in New York have already placed orders and Sony itself says they are selling them. Moreover, one commercial tape house in Manhattan has tooled up to do mass dubbing (Teletronics) so Sony seems serious about it. We transferred one of our half-inch tapes at Teletronics and the copy was excellent. Very encouraging given the potential of cassettes for distribution. More important, the Sony cassette recorder can be used for dubbing as you would with an ordinary half-inch deck. Thus, no middle man. The Sony

machines are, of course, three-quarter inch tape and some rumors have it that Sony is abandoning their half-inch line for the newer standard. While it is true that they discontinued all half-inch color recorders (i.e. the AV5000a), our correspondent visited the Sony factory in Tokyo last summer and was assured that production is expanding. Moreover, Sony is now selling 1,000 Porta-Paks alone in the United States each month.

Panasonic has also announced a three-quarter inch machine which will be compatible with the Sony. (Just to play it safe they're also going to market a half-inch, type-one standard, cassette player. So who knows). All we know is that Sony is serious, has a proven record of consumer selling and servicing; and their machine is beyond the prototype stage and operates very well. Moreover, you can use it with any TV set (the off-air record model has a built-in broadcast tuner).

On the other hand, Cartrivision has taken big newspaper ads announcing that Sears is selling their unit (delivers in June) for \$1,600. But that includes a built-in TV set as rumor has it that the Cartrivision cassette deck isn't stable enough to feed any TV.

Cartrivision is using a software first approach and thus is concentrating on consumer sales whereas Sony seemingly has no notions of programming and is aiming for the institutional market. The Cartrivision catalog of tapes includes every old movie and educational film imaginable, and not one thing produced especially for the medium. But they are moving quickly into the consumer area (Time Inc. will also be marketing their material through Cartrivision). Meanwhile, their stock, which was issued at \$20 a share, has doubled in price.

Finally, prices for pre-recorded cassettes will range from \$5 to \$30 and feature-length films will be rented for \$6. (Sony 60 minute cassettes: \$35 blank). The \$1,600 price also includes a black-and-white camera to plug into the console recorder. They are obviously serious, especially since Sears is making its service network part of the deal. The system is not compatible with any other and Cartrivision is saying that "Survival of the Fittest" will prevail. Honest. That's from their advertising copy.

Given the imbecilic quality of their catalog ("How to Stop Smoking," "Nepal: People of the Mountains," "Reducing Executive Tension") and the fact that the hardware itself is a conspicuous consumption item (at a time when the national economy is still sluggish), Cartrivision will be a test of whether the mentality of broadcast television can prevail in videocassettes.

Already, of course, there has been a massive failure because of lack of insight into videocassettes as a new medium. That is (or was) the CBS EVR system which they have discontinued at a \$10 million loss. Everyone but CBS knew that a video playback system based on film technology was not going to make it, but they pushed on anyway, trying to substitute public relations for good design, and marketing surveys for common sense.

この様な社会の要請に従い、古河電工、東通、日本映画出版、旺文社の4社は協力して、通信メディアとしてとつのが有力なタイプである「CATV」(有線テレビ放送)に関する、日本最初の総合コンサルタント会社—日本シー・エー・ティ・ヴィ(株)を発足させました。これはさまの住まわれる地域に、それぞれ適正な規模の通信

A RADICAL SOFTWARE STATE-OF-THE-ART REPORT

AUDIO SHMAUDIO

Electro-Voice has a new directional mike that seems to be a good mate for the Porta-Pak. It has a volume control on the body of the mike and allows you to lower the level of sound going into the pak. This is a very useful feature in those loud sound spaces where you'd normally get distorted sound with the Sony Automatic Gain Control (AGC). It must be said that even video tapes of loud conversations have distortion caused by the poor Sony circuitry. The number of the microphone is Electro-Voice 670V and the price is about \$50.00.

IMPROVING THE VIDEO SOUND

There is an electronic system of improving sound on video and audio tape recorders. The marvel is called a Dolby noise reduction unit and costs from \$50 to \$250 depending on the quality (There's also a \$1500 professional unit). The cheapest is the TEAC AN-50 at \$50.00. What the machine does is improve the signal to noise ratio, making the sound cleaner. However, it has to be used during recording and playback. It lowers the noise inherent in tape by 10 db or 90 %. Advent, that nifty company, makes the best and most expensive Dolby units with prices from \$125 to \$250.

Improving the sound of prerecorded tapes requires something like the Metrotec graphic tone control or equalizer (FEK-1) at about \$75 with a discount. This little thing can select sounds of five different frequencies and either decrease or increase them. It allows you to get rid of noise masking a desired sound. An example would be cutting out the sound of traffic on a tape of a street interview and boosting the sound of the voices.

LENS ADAPTORS

Extenders or extension tubes for a C mount lens (video camera) can be obtained from Bolex (\$26 for a set of four) and Spiratone (\$6 for a set of three). We have a Bolex set and they're very good for macro or detailed close up work. You change the magnification range with the different size tubes, however, they don't turn a normal lens into a wide angle lens and are only good for a limited range of the zoom lenses. Spiratone also makes what they call a Tel-Extender for C mount lens. It doubles the power of your lens and sells for \$19.95. Spiratone deals with people by mail and their address is:

Spiratone Inc.
13506 Northern Blvd.
Flushing, N.Y. 11354

OWNERS OF BATTERY BELTS

If you have a BP 30 you should adapt it so it can be charged from the Porta-Pak's power supply. The power supply will not over charge the battery belt. The charger Sony gives with the belt is unregulated (has no feedback from the battery that says it's had enough) and can over charge and ruin the belt. Over charging can happen if you leave the belt charging too long.

TECHNO CATALOGS

Some good catalogs to send for if your into building hardware and surplus equipment.

B & F Interprises
P.O. Box 44
Hathorne, Mass. 01937

Cheap IC's, electronic and optical

Gerber Electronics
852 Providence Hwy.
US Rte. 1
Dedham, Mass. 02026

Wide range of cheap IC's,

Denson Electronics Corp.
P.O. Box 85
Rockville, Conn. 0600

"World's Largest Selection of new and used TV cameras and Equipment."



THE EGG STORE
VIDEO FACILITY

THE EGG STORE is a new production and editing facility developed by C.T.L. Electronics and Frank Cavestani, and located at 146 Reade Street, just two blocks from C.T.L.'s showroom and service department. The primary function of The Egg Store is to provide a high quality production and editing facility for both 1 inch and 1/2 inch video tape, and to offer an environment for experimentation in the art and technology of video production. In addition, material can be transferred from 1/4 inch Akai, 1/2 inch CV, 1/2 inch AV, super 8, 3/4 inch cassette to 1 inch for editing, and then transferred back to the original format for distribution. Material shot on Akai, Sony, Panasonic, Javelin, IVC and Ampex equipment can be handled at The Egg Store.

The studio will also be equipped for multi-media presentations including film, slides, audio and live actors, dancers and musicians.

Special considerations will be given to artists and non-profit groups to use the facility during unscheduled hours at a nominal fee. Careful consideration has been given to the needs of the video community, including the capacity for closed circuit viewing of tape for audiences up to 40 persons. The close proximity of C.T.L.'s service department assures that the equipment will always be operating at the required standards. Artists and engineers are welcome at The Egg Store. For more information contact Frank Cavestani or Lynda Rodolitz at (212) 431-5293.

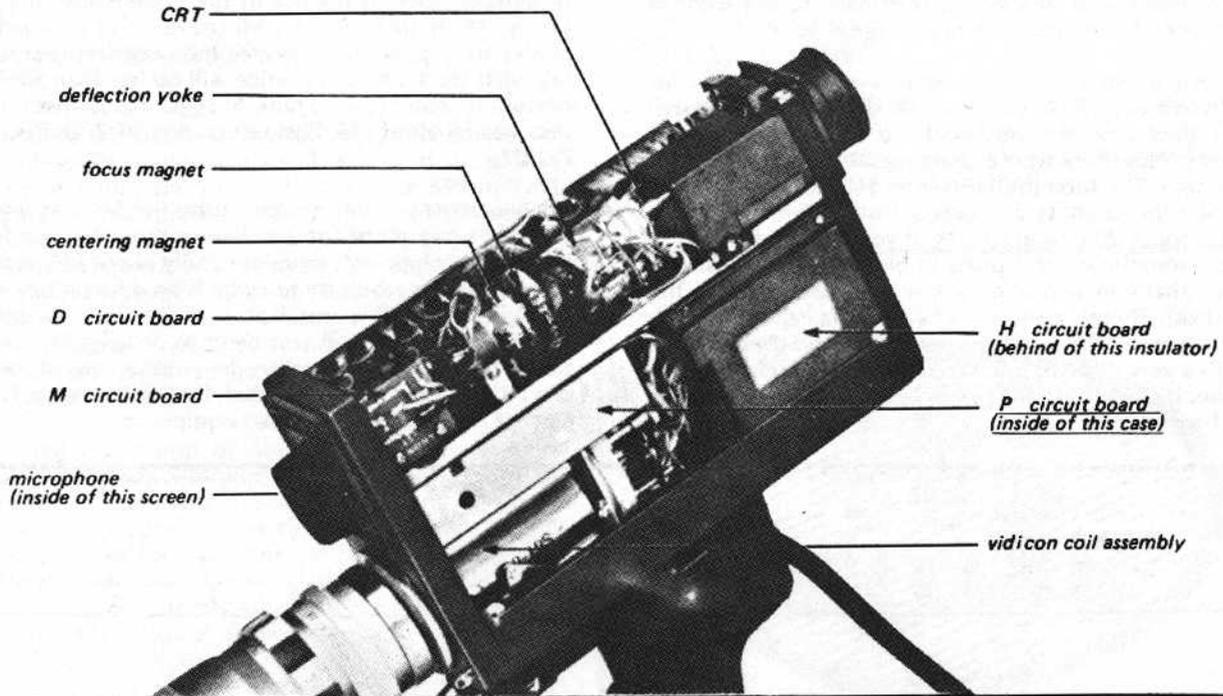
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**Tivicon:
MODIFICATION
FOR AVC-3400
VIDEO
CAMERA**



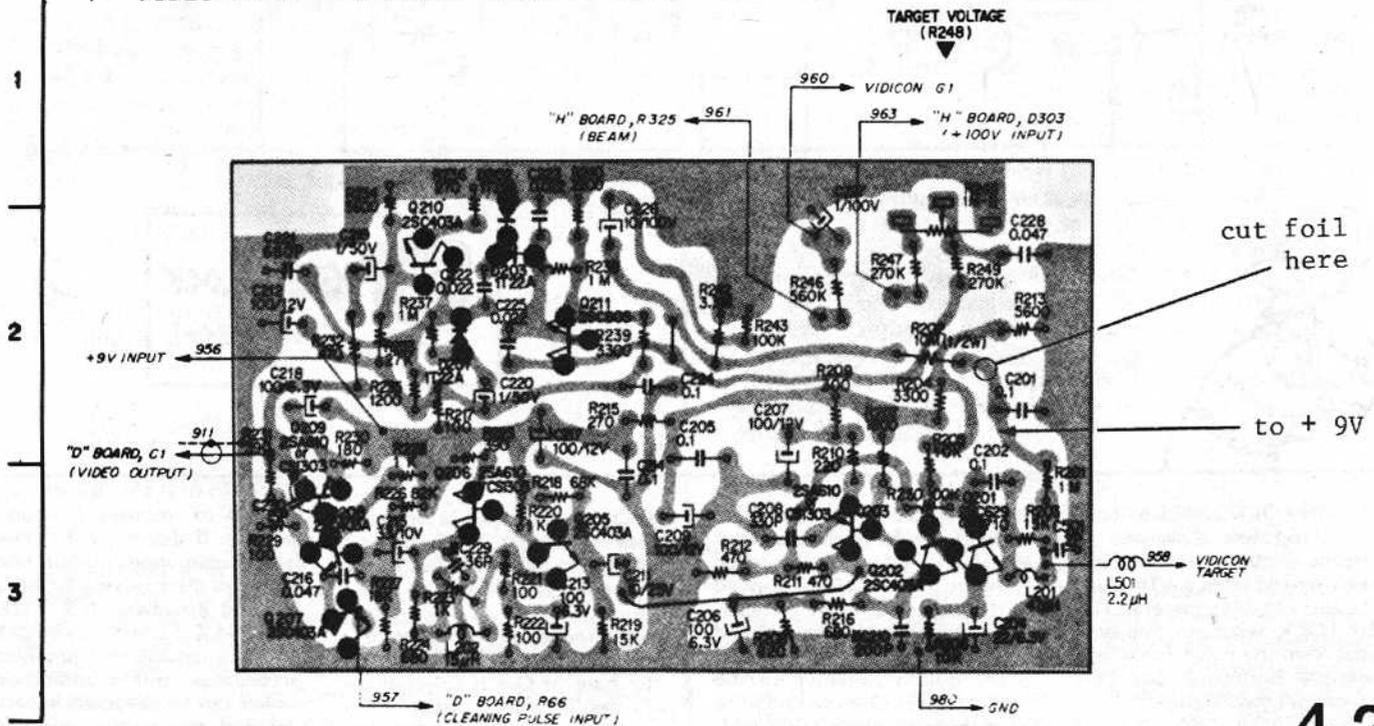
*Do-It
Yourself
HIGH
TECHNOLOGY*

1. Remove "P" Circuit Board behind case as shown on fig. 2-1 (fig. numbers correspond to SONY Service Manual for AVC-3400 camera).
2. Cut foil as indicated fig. 4-2 and schematic fig. 4-5. Connect free end of capacitor C201 0.1MF to + 9 Volt as shown.
3. Re-install "P" Circuit Board behind case.
4. Vidicon position adjustment: move screws to the rear as indicated on fig. 6-5.



2-1

"P" VIDEO PRINTED CIRCUIT BOARD - CONDUCTOR SIDE



4-2

