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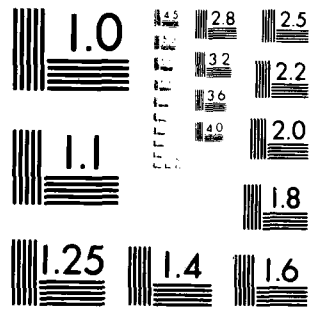
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CONARC TRAINING WORKSHOP  
FORT GORDON, GEORGIA,  
5-7 OCTOBER 1971.

Sponsored by  
US Continental Army Command

Hosted by  
US Army Southeastern Signal School

Final Report. In Seven Volumes

VOLUME III

Educational Television and Training Films Speciality Workshop.

GENERAL RALPH E. HAINES, JR.

Commanding General

US Continental Army Command

BRIGADIER GENERAL IRA A. HUNT, JR.

Deputy Chief of Staff for Individual Training

US Continental Army Command

DTIC  
SEP 18 1980

Jack Carrigy  
E. J. Weaver  
Al. [unclear]

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CONARC TRAINING SPECIALTY WORKSHOP  
EDUCATIONAL TELEVISION & TRAINING FILMS

CONARC TRAINING WORKSHOP  
Fort Gordon, Georgia  
5-7 October 1971

Volume III - Educational Television and Training Films Speciality  
Workshop

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ART

A

SPECIALTY WORKSHOP SCHEDULE

for

EDUCATIONAL TV AND TRAINING FILMS\*

Location and Capacity: Studio A,                      Civilian Consultant: Dr C. Edward Cavert  
Nelson Hall,                                              Great Plains National  
40 persons                                                      Instructional Library

Chairman: Mr Thomas J. Dolan, Jr.                      Room Monitor: Mr Joseph T. Jordan  
CONARC, ETV/TF Unit                                      Ed Adv, TV Div, USASESS

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SESSION NO. 1 -- Army ETV: How to Do It (televised presentation)

<u>5 Oct</u>	<u>6 Oct</u>	
1400-1430	1400-1430	Help from the 23" Giant -- Mr Carrigy, USAMMCS (Monitor)
1430-1500	1430-1500	Script Writing Made Easy -- Mr Dolan, CONARC (Monitor)
1500-1530	1500-1530	School's Role in Army-Wide Training Films -- COL Weaver, CONARC (Monitor)

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SESSION NO. 2 -- ETV Outlook in the Air Force and Navy

<u>5 Oct</u>	<u>6 Oct</u>	
1550-1625	1550-1625	The Air Force Outlook for ETV -- Mr Hemphill, US Air Force

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SESSION NO. 3 -- New ETV Devices, Services, and Potentials

<u>6 Oct</u>	<u>7 Oct</u>	
0830-0900	0830-0900	Demonstration of Video Cartridge/Cassette -- Mr Walsh, CONARC (Monitor)
0900-0945	0900-0945	Academic Credit by TV -- Dr Cavert, Great Plains National Instructional Library
0945-1030	0945-1030	Cost Effectiveness through the Use of TV (televised presentation) -- Mr Walsh, CONARC (Monitor)

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SESSION NO. 4 -- ETV Concepts for the Future

<u>6 Oct</u>	<u>7 Oct</u>	
1100-1135	1045-1120	TV in Training for VOLAR, Reserves, ROTC, and Self-Paced Instruction -- Mr Long, ATC, Ft Dix; MAJ Russell, USAIS; and Mr Dolan, CONARC (Monitor)
1135-1155	1120-1140	2001 TV Odyssey -- Mr Tesser, USASCS
1155-1215	1140-1200	Audio-Visuals in the Army's Future -- Dr Kanner, ACSC-E

\*The ETV and Training Film Specialty Workshop was based on pre-prepared video tapes covering each presentation. The text of the live presentations therefore are in many cases related to the television developed presentation and full understanding is dependent upon viewing the tape. The ETV and Training Film Specialty Workshop was completely recorded and dubs may be made available as outlined at inclosure 2.

WELCOME TO THE ETV/TF WORKSHOP  
CONARC tape 9-10-78

SCRIPT OF VIDEO TAPE: (Audio portion only)  
Yesterday, today and tomorrow. Where have we been, where are we now,  
and where are we going with educational television and training films?

This orientation on the CONARC ETV/Training Film Specialty Workshop is to give you a summary of here and now with a preview of coming attractions. To peak your curiosity and get you to participate with us, we've chosen some workshop program highlights. Let's start with Help from the 23-Inch Giant which provides examples of how television can be effectively used to solve specific training problems and assist in completing the training mission.

Script writing has frequently been an area of concern. The presentation, Script Writing Made Easy, illustrates the simplicity of preparing a television script when it pertains to existing instruction. The need for Army-wide training films is extensive, and numerous world-wide training problems can be solved through the use of training films. The presentation, School's Role in Army-Wide Training Films, emphasizes the responsibilities of schools and the vital role each plays in Army-wide unit training.

Educational television and training films are used extensively in training by all services. We have as guest presenter, Mr A. Hemphill from the Office of Secretary of the Air Staff, Headquarters, US Air Force, who will tell us what the Air Force is planning for the Future Use of TV and Films.

Video tape cassette/cartridge recorders are revolutionary communication tools which will bring new concepts and dimensions to training. Demonstrations of some of the new equipment will provide a look at the features and uses of video cassette/cartridge recorders for use in training.

Cost Effectiveness Through the Use of Television provides some examples of how CONARC schools and training centers are using television to save resources, and illustrates additional areas that can be recorded by television to conserve the use of limited resources.

The Director of ROTC, CONARC, Brigadier General M. A. Goers, speaks about the importance of TV in ROTC summer training, as well as future uses of ETV to support ROTC campus instruction. You'll also hear presentations on the use of TV in VOLAR, in self-paced instruction and in support of reserve training.

What will television be like in the next century? In the presentation, 2001 TV Odyssey, you'll see a brief history of training films and TV, contemporary uses of both and a prediction of what the future might bring.

A highlight of the TV training film workshop will be a presentation by Dr. C. Edward Cavert, Research Director of the Great Plains National Instructional Television Library. Dr. Cavert will discuss Academic Credit by TV. Use of TV for academic credit is an unexplored area in CONARC which could assist in the off-duty education of officers and enlisted personnel. Dr. Cavert's presentation will stir your imagination to investigate and exploit this as a means of assisting in off-duty education.

The final presentation is on the subject of Audio-Visuals in the DA Future. It's a topic which can be presented by only one person - the Educational Specialist from the Office of the Assistant Chief of Staff for Communications-Electronics, DA, the young Dr Joseph Kanner. Or is it the old Dr Joseph Kanner? In 1968-69, Dr Kanner conducted the Army-wide Audio-Visual Activities (AWAVA) Study which has had an impact on CONARC schools and training centers.

I'd like to invite you to attend and participate in the specialty workshop presented by the CONARC ETV/Training Film Unit. The television-training film workshop is designed to stir your interest and create discussion concerning increased use of TV and training films in the future to improve instruction, and, at the same time, capitalize on the advantages of TV to conserve the use of limited resources.



CONARC TRAINING SPECIALTY WORKSHOP  
Help from the 23" Giant  
(TV Tape 9-10-79)

Mr. Jack Carrigy  
USA Missile & Munitions School  
Redstone Arsenal, AL

You know about the past 20 years or more television has been around as an educational tool, it has passed through various phases from being considered a boob tube to being a panacea for instructional problems. Somewhere in the intermediate area is an answer of how television can be used to assist you and to help students learn more. The proper use of television frequently results in both a savings of time, manpower and equipment, as well as improving the learning environment of the students. During the next few minutes I will attempt to visually demonstrate to you some instructional situations that are common to most military training schools. I would then like to discuss some of the pros and cons of these situations and for your evaluation discuss the help that you might receive from the 23" Giant. Our first situation deals with the disassembly of an item of equipment. Now bear this in mind as you view the tape. The objective of the class is for the students to recognize each component, they must then identify each component by its proper nomenclature. In addition, the student must be able to perform the disassembly task from memory. Now here is one way that that program could be taught. (CONARC tape 9-10-79A - Segment 1)

What I would like to discuss with you and have your opinions on is dealing with two aspects, one, the type of problems that this type of learning environment creates for the instructor who must conduct or the administrator who must schedule it. Secondly, what effect if any does it have on the student.

Mr. Carrigy: Mr. Carr could you lead off with what you feel a presentation of this type given in the field does for an instructor, what type of problems does it present to him?

Answer: Well, I prefer to go with television because first of all the people can see real well; another thing, from the safety aspect, they might get that spring in their eye. There is a repetition of verbiage, the instructor starts over and over and repeats himself -- "now let's look at this," "let's turn it again." You have transportation to get the people out into the field. We had noises, background noises like the bus going by. All this could be eliminated. These television processes are very good; however, it would be quite necessary to reinforce his learning by using the actual object later on. Another factor used in training films or

benefit was that the student was actively participating in the instruction. He was exposed to a variety of oral and visual reinforcements. For example, he saw a line drawing of the item of equipment, he saw the actual item of equipment and he saw the item of equipment in use. Also, he saw the name of the item on the screen, heard the narrator or instructor pronounce it and he wrote the name in his booklet which he maintained for future use. However, I think you will agree that not all subjects lend themselves to this type of approach or to the control practical exercise. But the concept of student participating can be effectively used with many subjects, particularly those involving identification, purpose, and use of equipment. There are subject areas, though, where the subject is concerned with situation analysis, judgment, and decision making. Subjects in these areas are usually taught by game playing, simulation or case study. Case studies, while they may be written, are frequently dramatized in a classroom situation. Here is one way that this case study method or material would be presented in a classroom. (COANRC tape 9-10-79A - Segment 3)

Mr. Carrigy: Okay, at this point and time the students would have a discussion and they would make an analysis of the situation, make a judgment and make a decision as to what they would do. Now when the time and talent are available this method has been proven to be fairly effective, however, there are a number of other considerations that must be taken into view. For example, the instructor implied, although he did not emphasize, that this was just one of a series of case studies that will be given to the student during the next few hours. Now this creates certain problems, one, he would most likely have to use different actors or instructors each time to portray the case study. This requires a certain amount of logistical support on his instructional branch. In addition, as each situation changes, to add some degree of realism, he has to change the setting which will mean moving in additional props, tables, file cabinets, or what have you, to work on this antenna otherwise there is a danger that he will either decapitate himself or receive an injury if the thing is activated from a remote location.

Mr. Carrigy: How could you improve in the classroom, what is presently being done?

Answer from participant: We could have taken and used a large photographic chart which would have shown much more detail than is shown in this cutout. We could have used a technamated vu-graph with polarization and by a series of pull tabs created this. The one thing we could not create normally in the classroom is the sound of this motor running up with the switches activated in the sight of this thing rotating, and when you consider that these three tables

television could be time saving because a permanent record could be used over and over. We have a problem I mentioned before, that first of all we have to transport the students to a location, in addition, we are confronted with the possibility of inclement weather. If we are in the outdoors we have to be confronted with distracting items, such as the bus we saw on the tape; also, as we saw on the tape, there could be a girl walking by; it could be that training is being conducted near a street, it could be routine traffic but these are distractions from the student's standpoint. A student cannot see as much in a live situation as was portrayed, he would have much difficulty in taking notes if required and he may have difficulty in hearing what the instructor says.

Mr. Carrigy: Thank you. Also, if you noticed, the question that the one student asked about where can I purchase or have you ever bought a 45. This is real nice but it is incidental, it is not pertinent to what the objective is. So how can we eliminate that, one way that we might eliminate that is doing the same presentation except doing it by television. For example, two schools that are using this approach of a controlled practical exercise, one is the Southeastern Signal School that is using it to teach typing series and also a field wire splicing series. The Infantry School as well as the Southeastern Signal School are using the same technique to teach disassembly of weapons systems. Now the controlled practical exercise is just one technique used to overcome passive resistance, or passive viewing by the students. Since the student is actively participating in accomplishing the task as demonstrated by the TV instructor, he gains the knowledge and ability to perform the task by the end of the lesson. In addition, and very significantly, the student's interest has been maintained throughout the TV lesson. However, the terminal objective or behavioral change of many lessons will not always lend themselves to the control practical exercise. To illustrate a participating technique that will fit most learning situations, we have selected a segment from a video tape with tools and test equipment used on the Sergeant missile system. Now prior to viewing this tape the students are given a handout in which they must complete the blanks as directed by their instructor. Let's see how the students would go about this. (CONARC tape 9-10-79A - Segment 2)

Mr. Carrigy: As a point of interest this particular lesson with hand tools used in the Sergeant missile system is taught in 42 minutes, the name and function of 22 individual tools and items of handling equipment are shown, how it is used, the name is described and the students are required to put their names in the handouts. Prior to using the TV lesson it required 4 hours to teach the same information. In addition, some of the items of equipment were so large that they could not be brought into the regular classroom. As a result of the conversion of this lesson material into a TV presentation, the lesson objectives were accomplished more effectively and efficiently. An additional

is about the size and shape of it, it can be a pretty lethal weapon. So, what we are trying to get across is the impact of both the visual and the sound to this man and here is how we have accomplished that with video tape.

CONARC TRAINING SPECIALTY WORKSHOP  
Script Writing Made Easy  
CONARC tape 9-10-80

SCRIPT OF VIDEO TAPE: (Audio portion only)

(SNOWBIRD) Thomas

Mr. Carter, I'm SGT Thomas from Aviation Training Department. I need your assistance.

Mr. Carter

Come on in Sergeant. I'll certainly be glad to help if I can. What's the problem?

(SNOWBIRD) Thomas

As you know, our department has decided to have a television show made on the Strobex blade tracking system. Based on the problems we have had in the past with this instruction, COL Marshall thinks TV will be a better and more sure method of presentation. All of which boils down to the immediate problem. I've been assigned to put together a script.

Mr. Carter

SO--That's no great problem. Are you the instructor for the course?

(SNOWBIRD) Thomas

Heavens no! I'm here on post to take the course myself. Until my class starts I just kind of get the odd jobs that come along.

Mr. Carter

Now we have a problem. If this program is going to be used hereafter for this hour of instruction we naturally want the expert on the subject to put it together. I'm sure you and I could work it out, but it will be easier on all concerned if we can get the man who knows what Strobex is all about. Suppose I give the COL a call and see what I can do.

SNOWBIRD

Thanks Mr. Carter

Mr. Carter

COL Marshall, please. Mr. Carter, ETV Division calling. (PAUSE)  
Hello COL. I've just been having a talk with SGT Thomas from your shop reference the script for your Strobex instruction. The easiest and in the long run the most effective way to work at this script is to let me get together with your prime instructor. I understand he knows his material backwards and forwards and really puts on a good class.

(Voice) COL Marshall

Look, I sent SGT Thomas because he's at loose ends anyway and I couldn't possibly spare SGT Green. He's on the platform 4 to 5 hours each day now and his other time is filled. Also right now he's trying to break in a new instructor since he'll be leaving in 2 months.

Mr. Carter

Just a minute, sir. I can certainly understand yours and SGT Green's problems, but to me they merely emphasize why it is so important for him to take on this script. He's the best man you have. Why not preserve his instruction. Don't be satisfied with a haphazard job and end up with a tape you wouldn't want to use. Writing the script won't take that much more of his time and I'll be more than happy to work with him. He won't even have to appear on the tape if he doesn't want to. We can work that out.

(Voice) COL Marshall

Well, let me check on Green's schedule and see what we can work out. We'll be in touch.

PHONE RINGS

Mr. Carter

TV Division, Carter speaking. (PAUSE) Yes, SGT Lannon. So you've been discussing the project with COL Marshall. That's right...Of course you can do it...You're the best one to do it. You know what you want to say...What your students have to learn...and I'm here to help on what and how to show them. Suppose I attend your next presentation and we'll go from there. OK Thursday it is. Thanks for calling.

Mr. Carter

Good morning. I see you have things all lined up to start. Your class was really great the other day. Of course the exercise with the actual CH-47 was most impressive, or would have been if I could have gotten close enough to really see what was going on. I must say I'm thoroughly convinced this video tape is going to be the answer.

SGT Green

Well, let's get started. You realize this is all Greek to me. A lesson plan I can do--a script...I haven't the foggiest notion even how to start.

Mr. Carter

Look, this is probably easier than writing a lesson plan and certainly easier than writing manuals and the like. A script is written on a person to person basis. Of primary importance is to remember to keep it simple and direct. Say it like you speak. Plain English. OK, first let's take this pad and draw a vertical line...say about one third in from the left side on the page. Now to make it simple we'll write VIDEO at the top of the left side and AUDIO at the top of the right side. Now all you have to worry about is the AUDIO side. You know what to say. I'll worry about the VIDEO side. Together we can figure out what the students should see.

Briefly, there are several ways we could approach this. There are three kinds of scripts--the outline, the semi and the full. The outline works fine for the lecturer sitting at a desk or standing at a podium. He as the specialist knows what he wants to say and the cameramen don't have to worry about moving the camera to catch some other scene or item as the actor refers to it. The semi script is an expanded outline and is better for complicated subjects requiring intricate camera changes. Since the director would have to work from the script he has in the semi script cue words so he'll know at what point to make camera changes. However, for our purposes I think the full script will be best. With a subject like Strobex, the demonstration can get pretty complicated and we want to be sure the wording is precise in order to simplify the whole presentation.

SGT Green

OK, I agree with the full script. That way there won't be any slipups in technicalities. Now where do we start? I've got my lesson plan right here and vugraphs and charts that I use on the platform.

Mr. Carter

Great, let's see what we have to work with. As I recall from your class there are three methods for blade tracking. Since our program is concerned with the Strobex method, we'll introduce Strobex at the beginning then describe the other two methods before really getting into discussing Strobex. How about gaining attention at the off-set with the strobe light flashing on the scene, with you as the off-camera narrator telling what it is.

SGT

Well, you are looking at the reflector of a "strobe light," a part of the Strobex Blade Tracking System.

Mr. Carter

Good, write it down on the audio side of the page. I've noted on the video side what you're talking about. Now you mentioned tracking, I think you had better explain that.

SGT

Tracking is the procedure for measuring, recording and adjusting the tip-path plane of the rotary-wing blades.

Mr. Carter

I visualize at this point we might use a shot of our rotor blades turning. Now how often do you have to track?

SGT

The blades must be retracked whenever the rotor system components or the flight controls have been changed. Tracking should also be performed when in-flight characteristics indicate an out of track condition.

Mr. Carter

Now when you mention rotor system I'll just note on the left "rotor assembly turning" and as you mention inflight, we'll get a shot of your CH47 actually in flight. Now we've gotten through an introduction, are you beginning to understand how we go about working out a script?

SGT

You were right this isn't bad at all. I think I can go on from here-- at least with the audio part. If I get some ideas on video I just jot them down on the left.

Mr. Carter

Good. Then when you finish your draft we'll go over it together and see how it will work out. Give me a call when you're ready and I'll be back.

Mr. Carter

Hello, how's it going? You didn't sound too discouraged over the phone.

SGT

Not bad, not bad at all. I'm sure you'll have comments, but at least the narration seems to read pretty understandably. I've made several notations on the video side to help give you an idea of what should be shown and where we might fit in the charts and vugraphs if that can be done. You know the further I got into this even I could start visualizing what the finished product might look like.

Mr. Carter

You caught on in a hurry. Just goes to show...none should fear the word script...script writing is easy.



Mr. Dolan: For the next portion I would like to pass out a handout showing a sample for an outline script, a semi-script and a full script. (Inclosure 1) The techniques may seem rather simplified but really I think when people think of scripts they think of the popular novels that are adapted to the screen. There we are trying for the dramatic, we are trying for a Hollywood type production in the sense of entertainment. In training we can have a different approach altogether. What we are saying is really we have placed between the student and the television screen a tremendous barrier if we don't take the instructor from the platform, out of the classroom, and have him do the visual kind of things in the television area, with the help of a good TV director, to really use the medium properly and naturally. The paper that was passed out to you, or the handout, notice on the first page we have the outline script which we will call an orderly outline of all teaching points to be discussed with key or cue words, plus camera direction in visual sequences. It is used by qualified instructors and retains naturalness in presentation. This is for the qualified instructor. We can take some instructors from the platform who have been teaching the same subject for a year and a half, two years, and as they are subject matter experts and there is no need for us in the television or the film business to try and teach them the subject matter. What you have to do is make, as a first decision, are you going to use the outline? One of the benefits of the outline is when you do have this qualified instructor he doesn't become as stilted as when he is trying to memorize a full script. The dramatic impact of using an actual instructor doing the thing he knows best, is somewhat reduced with the full script. So, the outline script with a qualified instructor, with a limited amount of information, keeps the instructor or the voice over narrator on track. The biggest thing we have to worry about when you go with an outline format is that you don't have everything listed and you may on occasion skip a point and then you have to go back and reshoot some scenes. Of course, we can erase video tapes, but every time you redo something and erase something it costs time and effort. Do you have any questions on the outline - we would

like you to participate. If you want to ask questions at any time just jump in. It is a workshop and the only way that we will get everything out of it in the workshop format is if you participate. You don't have to back off on any of these things, if you have your own opinion. Are there any questions on the outline script? Slightly expanded is the semi-script which is an expanded outline.

If you look down at item 3f on the right or the audio side you have a film or another tape or something that is outside the studio, you must give the director sitting up there in the seat the exact words, the exact cue, to cut to the other source. In a semi-script the instructor must memorize or know that when he starts into this change in video he has 10 seconds and the film is up and running. He must be through within these 10 seconds so that you can then properly take a film or other video. This same thing would apply if you had another tape but in the semi-script format, a major memorization for the instructor are the cues that give the director something to go to other than what you are on right now. Are there any questions or discussion on the semi-script?

Of course I don't think we have to do too much explanation of the full script, that is where you have every action written down. As you will note, in the video on the left, it is actually so detailed in order that the director actually knows the precise moment to fade up on shot of CH-47 on hardstand with rotor turning. This full script gives the director everything that he needs to know. He will still discuss it with the instructor so that he knows exactly the item that he is going to show, most times the director doesn't understand the piece of machinery so he has to make sure he has the right area. There is nothing more shocking to the director than when you shoot a scene and have the instructor say you are on the wrong item. That is why this full script has in fact a very detailed video set of directions for the director. On the audio side you even go into music info and if a narrator is used during this demonstration he goes word for word. Let's say it happens, that in a teaching department the best instructor or the best two or three instructors are camera shy or have some problems that you can't get them before the camera. You just can't get the best instructor so at this point the best instructor can work with you on the script and then you can take and let someone from some other area work with the director with the completed full script and go from there to production on camera. In fact, a research project at Syracuse University about three or four years

ago tried this very technique, first they recorded the expert and someone who just read off a teleprompter then they tested it in the classrooms and they found it was equally as good for learning purposes. Dr Cavert may have more recollection of this. The point is that there have been a number of tests, and I think Joe Kanner has done something of this nature where you just get someone who is not a qualified instructor but give them all the information, word for word.

Many times we will see in tapes we review that we get to be old friends with some of the on-camera people because there are some people who have a knack of getting in front of the camera and are used a lot of times with different subjects. It doesn't really bother them and they study lines or put it on a teleprompter or cue card and off they go. In fact, one school at one point had a real on-camera favorite and he played everything from a corporal up to a colonel and he was an expert in everything from radar to subsistence in the kitchen, he kept coming back on again and again. There are some cases especially in the hard skill area where you just can't get people who will work on TV; let's face it not everyone can come in and look at the "monster" of the red lights, so if you need to go in this direction of the full script then you have some latitude in the kind of persons that you use. There are all sorts of things that you can do but I think the key or one of the big keys is to have the television or the film man working with the expert directly, this is the way we have always done training films. As far as script writing, if you do go out and you hire a professional script writer, the instructor who is the technical advisor does most all the work anyway; he has to tell the writer what the subject is all about, so in most cases he does exactly as you saw on the tape. The instructor works with the film writer an hour or two hours, whatever is needed, gives the writer his lesson plans, gives him all the necessary reference material, the writer will usually go back to the motel room and spend some hours trying to glean the necessary material from all this. The writer comes back and says "have I got it." Sometimes you wonder if this is the same guy that you talked to originally, were you really getting through to this writer because there sometimes is a large lack of understanding of the requirement.

Script writing, insofar as educational television is concerned, is not designed to downgrade it but the one thing that I am pointing up is that you do have a qualified television production man working with you, men that can visualize and with that combination

of the best instructor and a good television producer-director then script writing is in fact quite easy.

Colonel Weaver - I would like to add something Tom - I had this subject put into the workshop because of our experiences of the last year in producing the Category I Training Film Program, wherein we had some hundred training films produced and for a year I had many phone calls saying we can't write scripts in-house within the school system. Well, I took a very adamant position and said I don't believe it. Well in the end I was forced into the position of approving contracts for the writing of some 35 scripts but because I got a few people on the bandwagon, and particularly the Signal School at Monmouth, General Horne got behind it and he put together a team of snow birds and others and they wrote 12 scripts in a hurry. I was hoping I would have a lot of educational advisors or DOIs here to create the atmosphere with them that we want to write scripts in-house and support not only the TV support for POIs and Army Training Center training but also for support of the Cat I program which we now have in CONARC. That is the reason I put in, I didn't see many DOIs here but maybe you can convey the message back to those who are from the school system.

Mr Dolan - This makes a very nice transition because Colonel Weaver is Commanding Officer of the CONARC ETV/Training Film Unit at Fort Eustis, and he just happens to be the man who is going to present the next program so without further adieu we will go on with the subject of Department of the Army Motion Picture/Television Production Program.

CONARC TRAINING SPECIALTY WORKSHOP  
Department of the Army Motion Picture/Television Production Program

CONARC tape 9-10-81

Colonel E. J. Weaver  
CONARC ETV/Training Film Unit

Once again I had this one added because I find as I look around the school system that we are pretty well compartmentalized, I have my ax to grind, of course, in TV and training films, somebody else in the writing of training literature and we don't always talk to each other and insure that what we are doing relates to what the other individual in that particular compartment in the school is doing. How many are from schools here? Well, that's a pretty good representation, I even have a friend in the Marines. I thought again I could convey a message to the senior individuals on what the school's role is in the Army training film program which Dr. Kanner assigned to CONARC about a year ago in July and we are now managing the program.  
(CONARC tape 9-10-81)

## SCHOOL'S ROLE IN ARMY-WIDE TRAINING FILMS

VIDEO TAPE SCRIPT: (Audio portion only)

Since the days of World War II, motion pictures have played a significant role in support of military training requirements for individual and unit training. A pioneer in the production of motion picture films for training is the United States Army. Effective use of films in the conduct of training is credited with contributing to the overall excellence of Army personnel trained during World War II. The Army immediately recognized the importance of films in training and in 1942 purchased Paramount Studios in Long Island City, New York for use as a film production center. It eventually became the Army Pictorial Center (APC) and many well-known motion picture producers and directors, including Darryl F. Zanuck, produced Army training films there.

Just as the training films played a key role in the instruction of GI's during World War II, films continue to serve an essential function in the training of military personnel of today's Army. Many of the same reasons which justified the production of films then, still exist today--like the critical shortage of qualified personnel, equipment to support training, skill level of trainees, requirements to demonstrate training material more effectively through visual means, and varying training workloads.

Some of the training films produced during the 1940's which reflect unchanging basic procedures are still in Army audio-visual centers today and are being used regularly to support instruction. This is an excerpt of a film from the A-V Center at Fort Eustis. It's on the subject of MICROMETERS and the film is still in use at the Transportation School to support instruction on the UH-1 Helicopter Repair Course.

All of us are aware of the extensive use of audio-visual materials at Army Service Schools to support training. Of equal importance is the continuing need for more effective training films to support individuals, units, and reserves that don't have sophisticated formal training facilities. As subject matter proponents Army service schools have a vital role in determining and supporting the audio-visual training needs in the field.

Military personnel don't always have the opportunity to return to a service school for continued updating of training. With the constant introduction of new equipment, weapons, and materials, keeping up to date is mandatory to insure maximum efficiency in all areas. The production of films for Army-wide release to units in the field serves this need in part.

During the past fiscal year, one of the training film requirements at the Engineer School involved production of a film on the Timber Trestle Bridge, a portion of which you are seeing now. This type of bridge is not built every day, but rather, requirements are determined by the tactical situation. In fact, one of the big problems encountered in production of this program was in finding a trained crew that knew how to construct a timber trestle bridge. As a result, production of the program was delayed while a crew was trained. The program was completed, however, and now when units in the field need to see how a Timber Trestle Bridge is built, the film is available.

A somewhat similar situation comes to mind in seeing this excerpt. In Vietnam the Army constructed the DeLong Pier--a self Elevating Spud Barge Pier. As the pier was being built, it was filmed. During the disassembly and removal, step-by-step procedures are also being filmed to document the technique and to assist future engineers.

Although the responsibilities to the training film program are the same for all service schools, you'll find that each school differs somewhat in its approach to develop the program. To be continually responsive and aware of the training needs and requirements of units in the field, schools must have a continuing feedback from units. Included in the feedback should be requirements for audio-visual materials, to include training films. The current inventory of training films is far from adequate to efficiently support all of the current instruction. The need for Army-wide training films is extensive.

There are hundreds of hours of instruction in Army Subject Schedules which can be presented effectively by film. Many world-wide training problems can be solved through use of training films. The responsibility of identifying these areas lies with each school, where the majority of Army-wide training film requirements are generated. Unless each school properly identifies, develops, and submits its training film requirements, the Army-wide training film program will not fulfill its mission.

This is the Army-wide training film program approved by DA - The Department of Army Motion Picture/Television Production Program or simply, the DAMP/TVPP for FY 72. It lists all of those Army-wide training film requirements submitted by schools, validated by CONARC, and approved by DA for production and Army-wide distribution. DA has six categories of films such as medical, information, and R&D. CONARC is concerned primarily with Category I Army-wide training films -- which support individual and unit training.

Now before this program is finalized and published, quite a bit of preliminary work takes place. In February of each year, CONARC schools submit their requirements for Army-wide training films the next fiscal year. Each one of the projects has to be fully explained,

described, and validated on a film justification sheet. These justifications must include the Army Subject Schedules, and lesson identification within the schedules to be supported. Specific units, by TOE/TD designations, reserve component, ROTC, and resident school training supported, must be identified. As training films are intended to support Army-wide training needs, normally they are not sufficiently cost effective to support only resident school training. When a project will support a POI in addition to an Army Subject Schedule, the period or periods of instruction aided must be fully described. The justification includes the approximate running time of the program, synopsis, desired completion date, and whether the completed project should be in black and white or in color, plus other essential data.

CONARC reviews all of the justification sheets, prepares a recommended program and sends it to DA for approval. DA then reviews the program and the justification sheets and makes the final decision as to which projects are approved.

Some of you have been involved in the management of the Category I programs at your particular school. I'm sure you know that the system of funding and programing has changed. Effective with the FY 71 program, DA tasked CONARC to budget for and implement the approved Category I Army-wide Training Film Program using organic television facilities to produce the majority of requirements.

During FY 71, 113 Category I programs were scheduled for production by CONARC. Using in-house TV facilities, 101 programs were completed and approved for conversion to 16mm film for Army-wide distribution.

Let's take a look at a few excerpts from some of the programs produced by television in FY 71.

This program, ROLL-ON, ROLL-OFF, completed by the Transportation School last year was shot almost entirely by a CONARC video tape back-pack team sent to Bayonne, New Jersey. Shooting of the program had to be accomplished at the time the ship was actually being unloaded and loaded. As the ship was scheduled in only once a month, there was no chance for rehearsal.

The Infantry School, Fort Benning, uses a bit of comedy to make a point in its production of Fundamentals of Basic Rifle Marksmanship.

The Aviation School, Fort Rucker, makes use of a portable back-pack video recorder in production of this segment depicting helicopter maneuvering for landing on uneven terrain.



The Signal Center and School, Fort Monmouth, in the introduction to the Army Maintenance System, captures student interest in what could otherwise be a dull subject.

Video Tape Excerpts of DAMP/TVPP FY 71:

1. USAIS - Ft Benning - Basic Rifle Marksmanship
2. USACMLS - Ft McClellan (Prod by USAMMCS) - Individual Protection Against Nuclear Attack
3. USAES - Ft Belvoir - Timber Trestle Bridge Construction
4. USAQMS - Ft Lee - Supply Point Fuel System
5. USAOC&S - Aberdeen Proving Ground - Brake System Troubleshooting
6. USAAVNS - Ft Rucker - The CH-47 Chinook, Part III - Advanced Maneuvers and Flight Operations
7. USATSCH - Ft Eustis - Roll On/Roll Off
8. USASCS - Ft Monmouth - The Army Maintenance System
9. USAMPS - Ft Gordon (Prod by USAFAS) - Correctional Training Facility
10. USACMLCS - Ft McClellan (Prod by USAMMCS) - Individual Protection Against Nuclear Attack.

COL Weaver: Any other ideas from anyone on any additional subjects?

Major Loe, Ohio National Guard: Sir, do you have a projection of what is going to be put on film in the foreseeable future?

Answer: Do we have a projection? Yes. If you would like a copy of the DAMP/TVPP which was referred to during the tape we can give you one to take back to the Ohio National Guard and you will be ahead of everybody else, you will know what is coming. We also have a catalog of the tapes that we now have; yes, we have quite a thick tape catalog with three changes. We try to purge the catalog periodically in that a number of the video tapes become obsolete because they were designed for a specific purpose, or maybe the instruction is no longer existent or it is not accurate. About every two years we manage to get out a new catalog and in the meantime we put out changes.

Question: Do you have an in-house capability of transferring video tapes to film for Army-wide distribution?

Answer: Very, very limited and we only do it at the good graces of Mr. Murray Tesser sitting in the back of the room for maybe one or two copies at a time. As an example, we can support most of our

training centers and schools with video tapes but if we have a need to get it out to all training centers we have to make several 16mm films to support Ft Lewis and Ft Campbell and also to support the Chaplain School so then we turn to him to make us three copies of the film so we can take care of those or some other limited type examples but the conversion is really done by contract through AMC with a commercial firm up in New York called TVR. Any other questions?

Question: How is the super 8 going to play into this, is the super 8 going to replace some of the tape that is being taped in the schools now?

Answer: I would answer that question by saying we have no experience. I can just give you a visualization that ultimately we think that the super 8 and the new video cassette will replace some of the uses we currently have for the conventional 16mm films and for the video tape in the schools. New uses will be generated and there will be expanded uses for tape and film to go into the cassette and the super 8. If people really individually pace instruction there are a lot of little areas that can be supported on cassette or super 8 to individualize the instruction.

The learning centers that have super 8 film are finding that changes are not easily made, you have to go back and get it remade. That is why tomorrow we will have both Sony and AVCO demonstrate their video tape cassette, cartridge type machines on which easy changes can be made of recorded matter.

CONARC TRAINING SPECIALTY WORKSHOP  
ETV Outlook in the Air Force  
CONARC tape 9-10-82  
Mr A. Hemphill  
HQ US Air Force  
Washington, DC

I hardly see any difference in the problems in the Air Force as you have seen here in the Army this afternoon when you are talking about television. Certainly the Army is the leader in this television business and the military services when they mentioned the fact, or someone did, that you have 28 television facilities; well that makes the Air Force sorta look like pikers when we talk in terms of 10 or less television production studios and a few mobile vans. This afternoon with the time that I have, I have three video tapes that I would like to show you. The first one will be on Air Training Command where we have our technical training centers, where we primarily train our military personnel. We use television to a great extent in all of these training centers. The next one that I will go into will be in the Air Force Logistics Command. Now that is something quite different; there we are training civilian technicians and to the Air Force this was something that was badly needed so that the industrial complexes at the Air Materiel areas, the labor market, has been depleted; you can no longer go out on the street and hire a skilled technician to do a particular job, so to overcome this problem we have started using TV at these industrial complexes to train the civilian technician and to get him up to the skill level where he can perform his job, and then the last video tape segment that I will show you is in our more formalized training, how TV is used and that is at the Air Force Academy. Now all three of these tapes are on black and white, part of these facilities are in the process of being converted to color, as you see on various video tapes they will talk about their conversion program. I won't go into it at this time, I will let each one of the facilities speak for themselves and after each tape we will stop and I will be glad to answer any questions you may have or discuss the program with you in more detail.

This is general instructions that we have given from the Air staff out to our field as all of these educational and training television facilities must be converted to full color by 1975 so that is what they will be making reference to on video tapes, so if you

are ready we will roll the first tape on Air Training Command.

Do you have any questions about the video tape here with Air Training Command?

Question: I notice you made a point of going from helical scan to quadruplex, what is the background on that?

Answer: The background on that is that at Lackland AFB where basic training takes place and also our officers training school they wanted to add a television system and they wanted to go to color; at that particular point in time we were short of funds, we had a meeting with them and the air staff advised them you could have it but you must use the helical recorders and it will serve two purposes. It will serve as a test band for the Air Force for this type of recorder and will also give you a production capability immediately but then we don't have the funds to buy the quadruplex recorders, so they agreed to this and installed the system, with helical scan as a basic recording medium; however, when you get into complex production they found out that they could not keep up with all the editing work using that type of recorder; they have had constant problems with it, the recorder is good when you use it for a limited amount of editing but when you get into a lot of complex editing you find out that it is very time consuming. Granted it is much cheaper to operate when you keep it going so we have authorized them to go ahead and order a quadruplex color tape recorder to replace the helical. The distribution system would still be helical recorders. All we will do is just add the quadruplex for production work and reduce it to 1" for the playback. We also test the helical scan at another location down at Carswell AFB in Texas where we have a unit that supports SAC Air Crew training. Now the theme of your program, or what you had on the screen, what's new in the Air Force, I will tell you a little something about this facility at Carswell.

We developed a new concept there, what we call the suitcase concept. We didn't want a fixed studio or a totally mobile van so we had a combination of the two; we had all the equipment mounted in its own suitcase with connectors and handles and lids and what have you, so in the van the equipment mounts to the floor, each box stacked on the other with locking handles to hold it in place, it can operate

with its own power capability so you can fully operate this as a studio inside of the van. Likewise you can remove it very easily, take it into any room such as this and in a matter of hours have a fixed studio set up by stacking the cartons or racks on top of each other, again interconnecting cables and back to fixed studio. We did this with the helical scan recorder also, again we went into the same problem of getting slowed down in our production work because the helical recorders just wouldn't hack the editing. We have now replaced those units with high band color quadruplex recorders. We are using a portable backpack recorder to shoot the scenes in the field, it is all edited on the 2" tape, then it is dubbed to 1" and we have a 100 helical color playback units at 100 different locations throughout the Strategic Air Command where these video tapes are sent to. Now someone asked me earlier today or last night about using these units for playback what kind of problems did we experience? Well, very fortunately out of these 100 units during the first six months we had two failures, two machines that had to go back, just wouldn't hack it. Now, I don't have any statistics on the second six months but does that answer your question Colonel Weaver?

COL Weaver: Did you say you were going ahead and use helical scan for playback but record on quadruplex?

Yes sir, the experience that we gained at those two locations, as of now we won't try helical scan for production work but we will use it for playback. Now is there any other questions on the Air Training Command, if not, I will move on to the AFLC and here is where we are using the video as means of training civilian technicians as opposed to the training of military personnel. Any questions about this production or about any comments made in there?

Colonel Weaver: It occurred to me, I noted in your first presentation and supported by this one, the Air Force goal to convert to color by 1975 happens to be the same date we are talking about; what rationale did you use in coming up with going to color, do you have any tests that you conducted?

Answer: Yes, I was in hope someone would ask the question Colonel and give me an opportunity to say something about it; no we did not conduct any tests to make this determination as to whether to go to color, or remain with black and white; actually advances in the

state-of-the-art, the industry in this country sent us this way because we realized that the last black and white facility that we purchased, the problems that we went through because the manufacturers were ceasing to build the type of black and white equipment that we wanted to use, the quality of equipment, that we made the decision right then and there, they made it for us, that we would not proceed any further with any black and white facilities because it was not practical to do that if you have to special order black and white equipment when your broadcasting industry was already moving to color, there was no market inside the broadcasting industry for black and white so if we were going to buy off the shelf equipment we had to go to color, that is how the decision was made that we go to color. Then how we selected 1975, well we had to evaluate the amount of equipment that we already had on hand, at the various locations, approximately how much longer would it last, 'cause we didn't want the tape equipment three or four years old and offer it to someone else who was going to stay with black and white to give it away, on the other hand they didn't want it, we didn't want to put it in a warehouse and have the tax payer's money tied up in it so we wanted to make some use out of it, so we figured by 1975 the majority of our black and white studios would have used this black and white equipment until we had our money's worth out of it; we could afford by that time to do away with it and go 100% color so that is how we made this decision, of course, I have just explained to you how we made the decision to stick with the quadruplex recorders for production work.

Question: Can you reach a relative cost, realizing that you must do something to continue with black and white, make a lot more cost to go to color?

Answer: Well yes, there is more cost to go to color, we found a few years ago it was 4 to 1 increase in cost but I don't believe that is true today, I don't know what the real difference would be but my guess would be at the most 2 to 1 but that really isn't relevant any more if the black and white equipment isn't available.

Question: Have to have that custom made and it would cost you more?

Answer: Yes sir. If you had to have it custom made, then that 2 to 1 would no longer stand up, that would only be if it was still available as off-the-shelf equipment.

Question: In the tape you mentioned that in arriving at the use of ETV or television, that they derived definite benefits from it, such as cutting the length of courses or the length of time the student studies, is that statistical data or just information available, because this would seem to tie in very closely with cost effectiveness and accountability. In other words, if we produced a tape for \$1000, if we would show a definite correlation to shortening the course length or ordering less equipment, from an accountability standpoint administratively it would seem significant.

Answer: Yes, we found this true in the Air Force in the early days in our training commands when we first started using television, the basic electronics course was put on TV and throughout the whole command that saved roughly some 50 manpower spaces but that was 10 years ago, now since 1967 when we started using TV to train civilian technicians coming into the Air Force, there has been an even greater savings because that technician coming in, you had to pay him a certain wage scale whatever the law called for when you hired him, even if he wasn't productive, so if you could reduce the amount of training time there is where your big savings comes in and, of course, we found that to be true time and time again. Take the course recorded on video tape, send it out to the foreman in the shop, let him show it in his coffee shop or in his office, as opposed to taking the man away from his work area, transporting him across the base to a classroom, obtaining an instructor to instruct him, and transporting him back to his work area, all this costs.

Question: Let me explore that a little further with you, would this in essence be the same as a change in concept, what was the reaction of your instructional people such as your educational people, toward this change?

Answer: Well, we only have a limited number of professional instructors, most of this instruction would be accomplished with the foreman or the senior technician as I noted was mentioned in some of the Army presentations, the man who knows the subject best would have to take time out to make his presentation and when he found out that he could go over to a TV studio and make his presentation one time, make any corrections in his script so the thing was right, he supported it 100%.

Any more questions on the use of this equipment in the industrial complexes? If not, we will move on to the next segment I have and that will tell you the story of how television was developed at the Air Force Academy and then we have some comments about going to color, I guess something I should mention - some of the comments they are making there about transition to color, that is a message for me cause I am supposed to remember that, I am supposed to see it and see that they get the money they want to make the conversion; of course, I don't necessarily agree with the times they state, I have assured them they will have the funds and they will get their color systems but not that necessary date. (Tape insert)

In addition to what we have shown you here, we also have our Air Force Audio Visual Center located at Norton AFB and there under one roof now we have a complete motion picture, television, still photography production capability. All the in-house processing, everything we need there to do the job. We have added there also a tape to film transfer capability using the electron beam recorder. As you saw in the one presentation there at Lowry AFB they are using a transfer unit, that is the old kinescope, not that I should say old, that is a very new unit they have there at Lowry, the one at Norton is much newer, in fact it is the electron beam recorder and once we get the thing checked out, get the bugs out of it, and have people where they know how to operate it, we were real pleased with it, and will be happy at any time that any of you, if you would like to have something transferred, just for a sample, we would be happy to do it for you, we don't have a lot of extra time for it, I say that because we are really sold on the electron beam recorder, of course we are expecting to do a lot in super 8 and a lot of our production will be television, just what the Army has been talking about here today, produce it in a television studio, because it is cheaper and faster, transfer it to 16mm film and reduce it to super 8 and send it to the field, so I think I could summarize all of this as far as the Air Force is concerned. That television is as important a tool in the classroom as the telephone is in your office. If you would think in terms of if you were working today at your desk without a teleohone that is about the way our people feel when they have to go in the classroom without the television support. That is all I have Tom and I want to thank you again for giving me this opportunity to come here and work with you and listen, I feel that I am going to take a lot of good information back to the Air Force.



CONARC TRAINING SPECIALTY WORKSHOP  
Audio-Visuals in the DA Future

Mr. Al Hemphill  
US Air Force

Question: Do you use your playback device in color?

Answer: We will go ahead and use the helical scan recorder for playback. We are adding the pressure for production and we are going to use the helical scan on it because we already have our money invested in it, and for the most part, we have found we are using the 4900, I am talking about the Ampex gear since that is the only thing we authorize the Air Force people to buy, the Ampex 4900C has proven to be a very reliable piece of gear for playback. We have our money invested in it and we are going to use them till they wear out. Now what will happen when they wear out; I won't say we will buy more helical scan, the State or the Army will no doubt take it somewhere else. We will wait until close to wear out time and the life of this equipment before we decide which way we are going. We will also be looking over your shoulder, and at the need, we want to see collectively what is going to happen, maybe joint, maybe we can make a decision that will be to the benefit of all.

Second Question: Have you seen any good transfer devices from video tape to 8mm film?

Answer: Well, yes, but let me answer by this -- the best that I have seen, and we have some examples of it in our office, is where the color tape which transferred to 16mm film and then reduced to Super 8, seems to be by far the best.

Question: Was it expensive?

Answer: Yes sir, right now since we have to go out on contract we pay Technicolor \$50 per minute to make the color transfer from video tape to film, our goal is to have our own in-house color transfer capability by the 4th quarter of this year because we are doing so much of it and using television just the way you are using it here in the Army. We support you 100%. We can say it is more economical to shoot on video and transfer to films; we are with you 100%. The only thing is that we are doing more and more in color. We can't continue to pay that \$50 a minute because we have seen some equipment now that we think would be worthy of investing some money in. Yes sir.

CONARC TRAINING SPECIALTY WORKSHOP  
Audio-Visuals in the DA Future

Mr. Al Hemphill  
US Air Force

Question: Is there any loss of fidelity in that transfer?

Answer: Let me say this, and I think the Army people here will support me on this -- anytime that you make a transfer or a dub, there is always some loss even if you go from tape to tape. Each generation gives you some loss; but to be practical, the loss that you get going from a master video tape to the Super 8 film, if you use a good technique, and Technicolor does have a good technique, your loss is not noticeable to, I would say, the non-professional, the student who is going to view it will not question it.

CONARC TRAINING SPECIALTY WORKSHOP  
Demonstration of Video Cassette/Cartridge  
CONARC tape 9-10-85  
Mr. Paul Warner  
SONY Corp., Wash, DC

I will tell you of our Sony video cassette player this morning, the player is just a part of our total system, a recorder player version, a high band color master recorder for production purposes, a master control player which will serve as mass duplicating capabilities. I'll just explain the cassette itself to you--this is a video cassette, you can see both the supply and the take up reel. The tape is completely enclosed so it is relatively dust free; fingers, etc, cannot get to the tape. The cassette is about 1200 feet, 3/4", chromium dioxide tape, it weighs about a pound and a quarter and I understand can be mailed anywhere in the US air mail for about \$1.50; it will be available in 10, 20, 30 and 60 minute time period. For a 30-minute cassette the price will be about \$20, for a 60-minute cassette it will be about \$30. In addition to that we have a small button in the back of the cassette which can be removed, now when this button is removed it will not allow the cassette to be recorded on even a recording player.

At this time we would like to show you how the player itself works and also the quality of the color picture. As you can see the color is quite good, of course there is also black and white, monochrome. I would like to explain the features of the player itself, it is a full view, two head helical scan recorder and two separate outputs, a standard video output for video use, and an RF output for simpler operation channel 3 and channel 4, which is selected on the back of the video cassette player. Can be played into any standard color television set or monochrome television set. Again set up for channels 3 and 4. There are two audio channels which can be used separately for bilingual applications but can also be used to accomplish stereo sound. There will also be an optional cue track in later models which will allow the cassette player to be used for remote applications. Has the normal controls of any other video tape recorder, the format of course is different from the 1/2" and 1". There is a distinct reason for this, the 1/2" format, the cassette would be twice the size of this one. Now in lieu of that, the 3/4" format, there have been five companies which have adopted this standard, of course Sony, Panasonic, Pioneer, Japan Victor and Mitsubishi. I would like to show you some transfer copy cost

comparisons for the transfer of existing 16mm films. These prices are based on current retail prices for 20 copies, 30 minutes in length. Now color reverse may be made to go to either a super 8 or 16mm. The approximate cost is about \$1.00 per minute, we understand, so based on that, we have a \$30 color master charge with super 8 and 16mm, reproduction including raw materials for the super 8 would be about \$36, and a container charge of about \$6, so we have a total charge of \$72 for 30 minutes program with super 8, \$99.80 for 16mm, \$26 for video cassette, the reason being of course we don't have to have color reverse master charge because the transferring can be done with existing color film, change or the reproduction problem, direct reproduction from 1" to 2 or 3" to video cassette. There is no container charge because that is included in the video cassette, so you can see the economics of cassettes. In the tape cost comparisons as you can see the 60-min video cassette is about \$30 as opposed to \$40 for 1/2" video tape, \$60 for 60 min, and of course \$160 for 2" video tape. I have a couple of minutes left, would like to tell you about our reproduction equipment that will be available on the market in early spring and this will consist of a master control unit, and a printer rack, which rack will contain four printers, this is a building block thing, go from 4 to 500, this is a 1 to 1 ratio printer and this obviously is of value for mass distribution and duplication of video cassettes.

Question - Does the cassette have a counter on it?

Answer - Earlier configuration had counters on the cassettes, and the original marketing was that you could take it back to center point, they would wipe it and re-record at a very nominal cost, I think the part that you are referring to only counted the number of passes. We have a counter on the player itself.

CONARC TRAINING SPECIALTY WORKSHOP  
Demonstration of Video Cassette/Cartridge  
CONARC tape 9-10-85

Mr Frank Wissel  
AVCO Engineering Corp., New Jersey

Mr Walsh -- I would like to bring on Mr Frank Wissel from the AVCO Engineering Corporation, Electronics Corporation, who is a staff engineer and he will demonstrate their equipment and remember now this is a video tape cartridge.

Thank you, the unit you see here plays color, records color off the air, it can record color from standard video, we have a small black and white camera which unfortunately is not here that it will record from, in approximately a year plus there will be a color camera. I know it is early in the morning, coffee doesn't really wake you up, I would like to give you a little short of something that may. This is a cartridge type unit which Bob will demonstrate to you, it plays for 2 hours, 114 min roughly; there is no rewinding or training required as you saw there when we changed material; it has automatic stop on either end, two channel audio for foreign language or stereo sound, standard iron oxide tape, and this is our particular process, which uses the skip field, is very saving on tape material and allows us to use a very conventional video iron oxide tape which reduces video headwear. Similarly, the tape is 1/2" and we get the two hours on the cartridge you see there. The rewind ratio is twenty to one and it is also protected against recording. The headwear is also minimized since during the fast winding, rewind, there is no head contact. The termination is three door, in what you saw played, this unit was operating with the recorder on direct video and audio connected to the TV set. Two sets over there are standard 1971 Admiral 25" receivers, they are operating on channel 6, which is re-broadcast into them from a separate unit, through the tape recorder. Now I would also like to mention this is an early prototype, many prototypes are not available in color, there are a number of improvements in picture quality such as the resolution and stability, the use of operation, you saw how easy it is there; production for the first year will be measured in the tens of thousands at many thousand a month rate, that also assures you of service, parts and related items. The combination to the consumer that you see there will sell for about \$950, the deck itself will be something under \$600. As I mentioned before, the small camera, black and white, \$200, color camera, you will

hear more later, \$350. As you have heard, and we believe strongly, tape in general has economic advantages over all other media, not to mention some other convenience advantages. Our approach uses the 1/2 tape, lower cost tape, smaller dimension tape. As a result, we can offer a price of \$30 for two hours, roughly \$25 for one-half hour and one of the reasons again is the lower reproduction cost. Our reproduction is done at very high speed, by contact methods and therefore we can actually reproduce a one hour tape in two minutes. We can transfer from two inch tape or any other normal media such as film to the standard cartridge that you see there. AVCO has the largest library presently of software in items such as you see here, and obviously we have had to support it by the capability of reproducing such software to meet the needs of the high volume. I want to thank the people who have been so helpful to us, with our short notice here we have had a lot of special problems. In addition to Tom Dolan and Joe Walsh whom you have met, Colonel Weaver, Colonel Bue and his staff have been exceedingly helpful, unbelievably so, and I would like to compliment all of them.

CONARC TRAINING SPECIALTY WORKSHOP  
Demonstration of Video Cassette/Cartridge  
CONARC Tape 9-10-85  
Mr Joseph Walsh  
CONARC ETV/Training Film Unit

This presentation was to demonstrate some of the new innovations in video tape recording. The first demonstration was given by Mr Paul Warner of the Sony Corporation.

Sony video cassette offers flexibility in that current video tapes and training films can be transferred to this format. The unit is very compact and simple to operate. This cassette recorder has two audio channels allowing multi-language capability.

AVCO Corporation video tape cartridge. Mr Frank Wissel, Engineering Staff, demonstrated AVCO cartridge recorder. This unit is similar in operation to the Sony Cassette with the exception of tape size. The Sony equipment uses 3/4" video tape whereas the AVCO utilizes 1/2" video tape. This unit is also capable of recording from a camera, off the air programs, or duplicating existing video tape or training film. Both of these machines do have good potential, but again we are faced with the problem of standardization. Until the manufacturer of these various types of video recorders, cassettes, or cartridge equipment establish a standard, we cannot accept the problem of incompatibility.

CONARC TRAINING SPECIALTY WORKSHOP  
Academic Credit by Television

Dr C. Edward Cavert  
Great Plains National Instructional Library

Mr Dolan - When you are trying to give someone a creditable accolade, we usually say he wrote the book about such and such--well, our next guest did write a book and he is working on another one. The first one he has written which has been extensively used throughout the industry is called "Producing Your Educational Television Program" strangely enough. But that is just one of the many credentials that Ed Cavert brings to us, he has served as consultant to at least four universities, in the initiation and the execution of developing educational television. He has written and produced ETV programs by the score and has won the Ohio State award for program excellence for an ETV series called Rails West. He has a Bachelor degree in English and speech, Masters in Radio and Television and Doctor in Education, so we feel this is a perfect combination for this type audience. At the present time he is the Research and Development Coordinator at the Great Plains National Instructional & Television Library at the University of Nebraska in Lincoln, Nebraska. The topic that we started him out with, and he doesn't stick to, Ed just merely touches and then moves into a lot more fields. We have given him the title of Academic Credit by Television so let's see what happens. We didn't know what was coming out yesterday and I am sure this will be somewhat the same. Ed says he threw away yesterday's speech, so he is going to give you a different speech after having seen the conference yesterday. However, be that as it may, I would like to introduce to you Dr C. Edward Cavert.

Dr Cavert - That was a better introduction than the one I wrote, Tom. I wish my parents could have been here, my father would have been very proud, my mother wouldn't have believed it. It is kinda hard to follow this type of circus, that equipment people put on all the time, unfortunately you still have to have something to put on these things and many times we get caught up in the mystic of these little veiled secretive devices that are around us all the time and that we are consistently bombarded with, without really having the knowledge or at least recognizing the fact that we still are going to have to have something to put on these types of things. Behind these flaps and behind the rear screen projection



is an Army of Japanese technicians in order for the Sony machine to operate, the Sears Roebuck contingent is in force in the control room to your immediate right, making sure that the AVCO machine is in full operable swing and will appear in its toy catalog of 1972. Now I don't like to put down the equipment manufacturers, after all how else could we have drawn such a large crowd here this morning, for this type presentation, especially since all of the applied research that I am sure went on last night in high speed reproduction. I think one of the privileges of existing in the civilian community is the fact that you don't really have to follow orders, it accounts for the fact I am sure why I made Corporal 14 times in my career in the US Air Force but I am not going to follow the orders that Tom gave me today or that Colonel Weaver suggested that I talk about but I am only very briefly going to touch on the topic of Academic Credit by Television and get into a little bit more related, I think a little bit more directly to the theme of our conference today and this is Systems Engineering or Educational Engineering and Structural Design, whatever word you want to use, I think the concept is well familiar to us all. Let me give you just a very brief catalog description of some of the types of things that are going on now in giving academic credit on both the high school and college level by television throughout the nation, on a nationwide basis.

I think initially one of the most ambitious experiments was the Chicago TV College, this started back in 1956 from a grant from the Ford Foundation as all good things in the civilian community do, and it has continued up to this date, offering a full two year college program by open broadcast television, principally to the population of the City of Chicago, but more recently distributed through our library naturally throughout the country. In Chicago it has been a tremendous success, I don't have the exact figures now but in the neighborhood of 10 to 15,000 students have already since 1956 received their Associate of Arts degree largely through courses they have taken by television. We acquired the series several years ago and it is made up of over 60 courses ranging anywhere from 30 to 180 programs in each course and they have been a colossal failure as far as we are concerned as a library, nobody buys them, nobody leases them, nobody wants them. I think the same type of success story if you want to call it that, was experienced by the other national library, the National Instructional Television Library at Bloomington, Indiana where they acquired the courses that were done for the Navy by Harvard and WGBH in Boston;

this was a series of college level courses that were originally designed to be used in the Polaris submarine, what else do you do when you are screwing around underneath the ice all the time, so they figured they would give them some college credit courses by television. It was, I guess, very successful and well received by the Navy, they have expanded their program into other areas of the country besides the Polaris submarine crews and yet as far as its applicability to other parts of the country, it too sits on the shelves at NIT in Bloomington, Ind without any real use outside of the original context for which it was designed, why is this? I am sure you don't find this in the military but in the civilian sector of our world, colleges are very jealous of local autonomy, it is virtually impossible to get accepted the credentials of another person on video tape from another institution; therefore, colleges just don't give credit for video tape materials that are provided by, or produced by someone else. Now, of course, you don't have this problem I am sure, or do you? About the only real success that we have seen nationally as far as academic credit by television is concerned in the United States at any rate, has been an effort that was produced by the Manpower Education Institute of New York called TV High School in trying to give academic credit toward the GED test for people who did not complete their high school education. We have documented evidence now, this series that we distribute, that over 65,000 people in thirty states have successfully completed a high school education through the viewing of these programs broadcast by various local educational television stations throughout the country. How many others have actually completed their program using this as all or part of their material we don't know but at least this is documented evidence of about 65,000 but yet the use of this is not as wide spread as we had anticipated that it would be. I am not going to go into a great deal of detail on these courses, if you would like more information about them, I will see if I can find them, yes here they are, I'll send some of these cards around, we have a catalog and some informational brochures about these courses, you can fill out this and we will be very happy to send it to you, our new catalog as soon as it is printed, within the next couple of weeks.

I think one of the most significant occurrences now, here, and something that will have a great deal of effect, it is happening now in Britain, doesn't really matter what the exact date was, but some years ago after many studies, the British Parliament authorized, sanctioned, gave the Royal Charter, I believe is the terminology they used, to what they call the concept of the open university.

As you probably know, England has a very alludist system of higher education and the need was immediately felt for higher educational opportunity for all of the nation's people rather than just a few elite that were able to go in a short terminal type of educational endeavor. Now, this has succeeded very well in England, it is not a television based, necessarily a television based academic university, but rather it is a university that uses various media, principally correspondence type of material in connection with television broadcasts over the BBC in connection with a regularly scheduled radio broadcast over the BBC in connection with eyeball to eyeball contact at various centers set up throughout the country in combination with audio tape cassette resource material that is given for each individual course. I can give you more information about the University if you would like at a later time but I think that while it is significant here and what I would like to get you people started thinking about now is the fact that the Open University is succeeding very well; they had, I believe they had to limit their enrollment the first year to 25,000 students because of finances; now when you take a first year college and have 25,000 students enrolled, now that is pretty good for any size institution no matter where it happens to be but the point about it is that within the Armed Forces, within all branches of the services, you don't have the opportunity right now nor do you have the facilities and the resources to give this type of either high school or college credit for your personnel. What's the matter with USAFI, what's the matter with the academies, why can't the Congress of the United States in essence charter an open university that gives credit within itself within the Armed Forces? I think we keep looking at things that are very traditional point of view and I think many times this is unfortunate.

We look at television this way too from a very traditional point of view, we look at it from the way we want it to be, not necessarily from the way it is, much the same way I am sure Dave did. I think that if we were to reexamine television in light of what we really intended to do, where things such as academic credit by television, by any kind of mediated instruction, whether it be television, or by the computer, or the overhead projector, or even these mysterious gimmicks that are veiled before us today. If we begin to look at this from our primary intent I think that this whole concept of systems engineering and educational engineering, instructional design, would take on a completely different character, a completely different flavor as far as we are concerned. I hesitate a great deal to throw out more definitions and more terminology and more semantics and more vocabulary in this already confused world of

public television, of cultural television, of educational television, of instructional television, of training television, but I do want to try to define for you I think some broad major areas of primary intent, not so much to confuse or further confuse the vocabulary of our industry but perhaps to try to place this in a completely different perspective for you. I think that when you are going to produce television that will be used within some sort of an academic context, whether it be within or outside of the military, that there are really four major reasons why you are doing this, why you are using television for instance, although you can apply this to any other media that you want. One of course is for the pure entertainment of it, another is for a broad cultural educational value intent of it, the information aspect of it, and of course the instructional or training aspect. Let me try to clarify these definitions for you a little bit. To a large extent television has a media itself, it has the blackbox, gray box with the Sears Roebuck label on the top, is seen by the individual as a vehicle for diversion or escape. I think the only thing wrong with this use of television in the classroom is that we see so little of it. If there was ever any environment in which diversion and escape is vitally needed it is in the absolute, complete, sterile environment that we have in classrooms both inside and outside of the civilian and military community. There are traditions and techniques of entertainment have been capturing and holding audiences for literally thousands of years. The transfer of these creative techniques to instruction is highly desirable of course but I think very seldom is there a true break with the intent of the use of this medium. No more transferring from entertainment uses of any kind of technology to the instructional use of that technology. When television is used in a very broad educational or cultural function the effect of any one specific effort is very hard to isolate from the cumulative influences of the other aspects on the individual. Indeed, right now I think it is very difficult not to group mass media in with the church, the home, the school and the community, when you are talking about the influences on the individual, whether social or cultural environment, television's use as a window to the world, and now well beyond the world of course, has allowed man to be an eye witness to history. Man's isolation to what is happening around him is now a matter of personal choice rather than technological constraint. It takes really less effort right now to watch a man walking on the moon than it does to go to your local PTA meeting. While we may not fully understand this phenomenon of the global village, the mass media had added a much

greater dimension on the educational or cultural influences that affect each of our lives. Now this sounds like a bunch of cliches strung together, I think it is because the whole use of this cultural educational use of technology is in itself a cliché, it is one that we have fallen into and resort back to as a safe refuge because we feel comfortable with it. Much of the use of television today, especially in the schools and colleges has been to inform. Two dimensional panels rich with conversational monologues have been paraded across the cathode ray tubes of America's classrooms and living rooms, we inform the individual about everything from taking apart an M16 rifle to environmental control to the performance dilemma faced by some movie star's seventh husband. Now technology in its relationship to the individual can serve a very vital function of disseminating information about things that either directly do now or will soon affect his life. In this context television has as much place in the classroom and in your training situation as it does on the six o'clock news. But what distinguishes the function of technology television to inform, instead of instructional technology, is intent. When you are talking about courses for academic credit or when you are talking about the training function of television and taking apart an M16 rifle, we are talking indeed about an intent to create conditions in which learning can take place. The intent to use any of the media of technology for instructional purposes is to provide or manage the situations in order to control the experiences to which the learner is exposed in order for his learning to take place. Failure, I think, to adequately define both for ourselves and for our audiences, our intent to the use of television has seriously jeopardized the full potential of the use of any kind of technology whether it be the computer or the overhead projector for pure instructional purposes. Let me again give these definitions to you in perhaps a little bit more concise terms--in talking about the entertainment uses of technology, the primary intent is to use this technology for diversion or escape whether it be within or outside of the formal academic environment. Very legitimate, very justified use of technology. If this is your primary intent you then have set for yourself a very specific direction of what you are going to do and for whom. However, if your primary intent is to use technology to add cumulatively to the other influences that affect the influences of the church, the family, the school, the community that sorta creates this total social cultural environment that acts on the individual, I think what you are really talking about here is another educational or cultural use of technology which are really

completely distinct and separate from as primary intent from the entertainment use. Now, if your primary intent is to use technology to present a body of knowledge that would become a part of the repertoire of information from which the individual can draw, in learning situations later on, perhaps that are out of your direct control, you are talking really about your primary intents, the informational uses of technology. But if your primary intent is to use technology to effect a measurable or observable change in learning performance of an individual, or to alter the way he is influenced by his academic environment as a learner, then you are talking about the instructional use of technology or training. Now any one specific series of images on that cathode ray tube will of course contain all the elements of these, but I think you have to very clearly define for yourself what is your primary intent. Now, the CONARC regulations on using systems engineering and the very elaborate schemes that Dr Briggs for instance has published, that Gagne is espousing that we have published in our efforts through the Great Plains Television Library will absolutely not work when you are talking about anything other than instructional uses of the media, of any kind of media, it will not work in the informational mode, it will not work in the entertainment mode, they are not to be used, it will distort the complete purpose of designing this type of systems engineering so the only place where it is really going to work is where you are working for instruction or where you are working for training. I don't think there is any aspect of human existence more complex than learning and is the only aspect of human concern that is more tenuous or in which you feel more uncomfortable than causing learning to happen. Some kind of procedures have to be adopted by you, uniform procedures to create conditions that are favorable to learning to interpret, these procedures cannot exist in the complete freedom of human intuition any more than they can exist within the very rigid structure of set formula, the gut level feeling of the art of instruction and the discipline structure of the science of systems instruction have got to be combined with good common sense of what works and what has worked in the past into a procedural scheme that you can use in designing instruction. How do you get at that - research is one way, here we have looked at research as a kind of dirty word, as a matter of fact I didn't even like the title when it was given to me and I tried to change it, but I think I am changing my attitude toward research a little bit too. Research should be regarded as a raw product on which instruction is built, without the facilities and talent to thoroughly investigate what can be done rather than limiting ourselves to conducting surveys and doing elaborate types

of research design about what has been done; if we can't use this research data to tell us what should be done rather than what has been done, we are not going to have the reliable input on which we can base sound instruction. The instructional technologist, instructional designer, I don't care what you call him now, but I want to get away from calling him a teacher, get away from calling him a television producer, the instructional technologist, or instructional designer has got to begin now working with the school's educational system to implement efforts, and let me quote here "the efforts for a systematic way of designing, carrying out and evaluating the total process of learning and teaching in terms of specific objectives that are based on research and human learning and communication and use a combination of human and non-human resources to bring about more effective instruction." Now this was a definition of instructional technology that was offered by the commission on instructional technology in its 1970 report, the one General Haines referred to in his opening comment several days ago, it seems like several weeks ago right now, it has been a long time, but when you begin to apply this definition in the real world out there, you run into some problems, we did for a long time, because it has to work within the academic structure that exists today. No one can go out and erase everything that exists out there right now and start over from scratch and really apply this in its pure sense. This is why we have to mix this with common sense. In the civilian community, I think our problems are compounded somewhat because we have a whole mass, mess of people you might want to call it, that were educators and academicians that are being caught up in the mystic of performance contracting, the educational voucher system, accountability, individualized instruction, rehumanized education, professional negotiations and I'll have to add to this list here, educational engineering which is a term that I have just first been acquainted with this week. I think that this movement we are seeing now federally, nationally, is second only to the innovation mystic that was spurred on by the 1965 intrusion of federal monies in education, but all of these movements have had but very little real effect on what happens to the kid in the classroom. I doubt very much if they had any real effect on what's happening to the soldier that you have influence over. So technology used in addition to what is already happening, little is going to be gained; if we use it instead of something else not only will our system, our academic system benefit but I think the individual learner will also benefit. Much of instructional technology is actively encouraged to a process conducive to self destruction. No aspect of

this more clearly demonstrates the phenomena than does educational television, teachers were not using television in their classrooms, what happened? Millions of dollars of Ford Foundation and Federal money were expended to produce a better looking product but the teacher is still not using it in the classroom. These attempts to continually strive for greater technical capacity, and these attempts did continually strive for increased technical capacity and production competencies, remind me a little bit like the efforts of trying to improve the buffalo chip. I am sure you are all familiar with the buffalo chip; here is a buffalo chip that has lain in the virgin prairie of Nebraska virtually unchanged for a hundred years and we come along and are offended by some aspects of what we see, so we take a good coat of shellac and put it over the buffalo chip and we buff it up to a high gloss and we look at it again, but no matter how thick the shellac of technical facilities or how high the gloss of creative production techniques, underneath that veneer is still the same ole buffalo chip and don't kid yourself the end product of the buffalos in Nebraska is no different than the end product of the mules down here in Georgia. All over the country we still have this same old buffalo chip that we have to work with as a basic instructional product. Instructional television has adhered to its hardware bound traditions of enrichment established in the last decade as tenaciously as the system it seeks to serve has clung to its content bound traditions of teaching that are literally centuries old, I think it is about time all of us wake up and realize that we are programming for a learner. I had a couple of tape segments, I'm not even going to show them now, they are not quite appropo to what I wanted to do today, so if you have any-- I hate to ask this-- do you have any questions? That is a ridiculous question to ask, I am sure if you did you wouldn't have waited for me to ask that. Any way, it will make me very happy to incur your rath at any disagreements you may have with what I've said.

Question: Do you care to define success of our problem and that's the integration of all modern technology into our teaching process, the Armed Forces have this, we understand it, but when you go around to the separate schools you find that it is not being used. Now there must be a fundamental reason and I wondered if you would tell us what you think why these teachers you mentioned a minute ago are not using TV in the classroom, the reason behind it.



Answer: First, what they have available to them was not designed to be used. It was not designed to be an integral part of the instructional cast that she has before her. My thinking was that perhaps the teacher hasn't thought out what she is trying to teach, the training objective. If she knew exactly what she was after then these tools could fit into that job. Go on the second floor out here in CAI and there is a huge chart, must be about 3 feet wide and 6 feet high where it says the teacher is the center of all activity. Where is the student? We are still living in a total learning universe where the teacher is the center, all things evolve around the teacher. What we are really saying now is let's turn over to a learning universe where the teacher is not the center of the universe but where the child is the center of the universe and the teacher of all these media revolves around serving the needs of that individual learner, whether he be a soldier or a pre-school kid. Now teachers are not using this product because the product has not been designed for that kind of help, nor have they been designed for the kind of help in a totalmatic universe, because what we have said to the teacher is here comes television. Now what you have to do is you have to prepare your students to view this program, then we want to spend 30 minutes with your students viewing the program and after the program is over spend 4 or 5 hours following up the program. In other words, teach it, let television come in and teach it and then teach it again. The kids get completely bored because they are getting redundant information. It is not being reinforced, it is not reinforced, it is redundant information. The program that they finally end up seeing on the screen is highly informational oriented as the definitions that I gave earlier in the session or culturally oriented. They don't expect any kind of interactive instruction and in essence I think what I am saying is that most of television in the civilian sector right now, and we represent on our shelves the largest supply of supposedly quality merchandise that is available in this field, 60% of it I wouldn't even broadcast, as a matter of fact, if I were a program director, but most of our television, and I am trying to think of any exceptions that I can find so that I can say all of that material is designed to be used in addition to something that already happens in the classroom rather than instead of what has happened in that classroom and as Jack McBride has been quoted to say, if all of television were removed from the American public schools and colleges tomorrow, nobody would miss it. I kinda think he might be right. What you are going to do you can therefore very quickly evaluate whether you have done it.

Question: Would you say that Sesame Street has several implications; for example, I know of theatre groups who are using Sesame Street, using the records to introduce both cultural and deprived children and frankly future customers of the theatre into the performing arts and very successfully. I would say that Sesame Street has educational implications, instructional implications and cultural implications.

Answer: I am not denying that at all, any type of an effort, I am sure that when you write a book and I am sure write a piece of music, I am sure that the interpreters of that book or piece of poetry, or piece of music or even a text book, will read in a great many more meanings than the author or composer had intended. I think the same is true with Sesame Street but when you are going to praise it or condemn it, do it on what they tried to do. Now we are going to see within the next couple of hours a lot of programs, samples of programs that were produced around the military installations around the country; some of them are pretty good as you look at it as a television producer and some of them are not so good, but we are not given the real intent of these programs so we cannot sit here as a bunch of adults, we are not the target audience for these programs, and look at them and say that's good, that's not good, We might be able to say that was a good technique that he used as far as television is concerned but we really can't say it was a good or bad program.

Question: Are there any systems engineering video tapes around where there are specified objectives where TV teaching program for a specific objective. Is anyone aware of these?

Answer: I think you will see an example of this in your M16 rifle in the next segment isn't it? In the civilian community they are beginning now a few examples of this, very short series, concepts of money management for young children and by hunting in West Virginia. There again this is total concept of teaching, I don't want to use that word 'cause people--teaching is a dirty word right now. They may or may not rely on a warm human being in the classroom; what we are really trying to do is use technology to replace the classroom teacher, to replace, to place her in a different role as a warm human being that the kid needs; she is acting much like a machine, much the same way I am right now, as a machine that is just imparting information with no interaction. I have had very little interaction with this group and they say that technology is dehumanizing education. What could be more unhuman than this kind of a situation that we have.

I have had a great deal of experience in the control room as well as in the classroom and it hasn't been too long ago that I thought the best educational television program that I could produce was the one that really satisfied not only me but the transmitter operator. It's sorta like a -- you get into the control room there and you have a great creative orgasm and you again splash yourself all over the control room, you don't really care if there are kids out there, a lot of times to follow this in here you get in trouble when you carry an analogy too far, I know that to follow this analogy one step further anyway, many times it is like the orgasm of a unic, that it has a lot of contortions, a lot of spasms, and a lot of moving around but no real issue.

I generally agree with what you have said and you allude that the intent of television, and there is that entertainment intent, and because the people we deal with can come of the nature that entertainment is the prime thing, and you get them in an instructional situation and when the TV comes on, try to escape it. They have a response tendency to perceive it as entertainment.

About five years ago, or ten or twelve, fifteen years ago, what we used to hear was, won't television replace the classroom teacher in any kind of PTA group, now we are hearing that question all the time. I know, and this is natural, I have never seen any documented research to prove this out, never seen any top level observations on my part that have proven this is true, that says as young as two and three years old to the teenage child and the teenage adult both can make this distinction that because it happens to appear on the cathode ray tube does not necessarily mean that it is entertainment. I haven't found anything either in the research material or my personal observations that would support that kind of a statement.

How about information overload in that the individual is being bombarded by so many stimuli that he can't respond, he can't attend to all of this. He can respond, he may not be attending to all the stimuli; this is one reason I say that when you are designing your programs you are very clear on your intent because if you are going to confuse the world with your relative stimuli in an entertainment or informational mode with your primary intent instruction, you have to take this into consideration. We also fail in television many times to realize the stimulus is not only what appears within the 3x4 aspect ratio of its 23" screen. When a child, soldier or adult, uses this he is also attending to this damn thing here, movements back and forward, lights, the clock that says the time for coffee

break, many other things are stimuli in addition to what we have on this reel but what do we do - we build a beautiful set like this and it costs \$500, pull that camera way to hell back there so everybody can see it, and we fail to realize that our instructional intent was a display of experiences or stimuli to which a learner can respond. Period - that's all we are doing.

GEN Hunt: I would like to challenge your last statement. I don't know of any school in the CONARC system that is over-stimulating anybody. My complaint is the opposite - we have all of these things and we haven't used them. Granted you go with your choices and figure out the per cent of programmed instruction, the percentage of computer systems instruction, case studies, seminars and television, you will find it is stimulation, we will be talking about this and we say our worries are over-stimulate and then we don't believe it. Now I would get to the point where we are over stimulated, I think you cut something out.

Dr Cavert: I don't think it is a matter of over stimulation, I think it is a matter of poorly designed conflicting stimuli that is the real problem. What stimuli we have exposed the learner to have not been planned in a sequence, or any structure, whether they be sequential or not sequential. I think that many of the schools in CONARC may have been stimulating a lot of you people, even walking down Broad Street last night I can tell that.

GEN Hunt: Let me pursue another point here - from observations, a group of career officers, these people are professionally motivated, I mean more professionally motivated than the average person that we have to instruct, and when that TV comes on it shrinks him, he completely tunes out; now if I interpret your remarks right, you are saying it is a problem of production.

Dr Cavert: No, I think it is a problem of design of instruction, good design and production, yes. In educational research on television and its effectiveness, you say most of that research is negative; much of it is, most of research is. We are working ourselves into a syndrome; what we tried to do is transfer a special presentation to the student instead of preparing a classroom presentation into the unique characteristics of any other kind of meeting, whether it be school, television or training. The television medium is using a 6 foot 6 teacher reduced to a 23" international image. That is really all we have been faced with in the past in educational research because nothing has changed except the form in which this image appears to the people, and when

you begin to get large group instruction even the medium itself is really no different because you are talking through amplification; the person is really in essence 23" high or less when he is way down there on the platform, which reminds me incidentally at the officers mess yesterday I heard some of our conferees in line in back of me talking about building a 200-man learning carrell. I would like to see the plans on that when it comes up, and the same thing is going to happen with these gimmicks, these gadgets, as we are going to take the same product that we have been broadcasting either by cable or open circuit and transfer it to this format instead of translating because this is a completely different medium; this is not the same television that we have been working with for the past 10 or 15 years.

Question: And then they will tell you they don't have enough money to pre-test it and see if it works.

Answer: Yes, if they don't have enough money to pre-test it and see if it works they shouldn't do it. I use an analogy there is not one television station within the CONARC system, there is not one television station within the civilian sector that will broadcast either on close circuit or television or expose the learners to-- right, you read me. But there are very few installations in CONARC or in the civilian community where we will redo that program if a human has a desire, that is the point we have to get. This brochure that I handed out to you now is the type of work we are doing now within the Great Plains National Instructional Library in trying to build up the number of lone production stations around the country in order to produce the kind of file that eventually we will have on our shelves to distribute to a more discriminating audience. It follows very closely I am sure the types of systems engineering design that you have adopted for use in CONARC, except that I think we started many steps before the statements and objections in trying to find out why these objectives are being written and for whom. Which is really more important than saying we can get beautiful statements and objectives stated in very pure terms.

CONARC TRAINING SPECIALTY WORKSHOP  
Cost Effectiveness thru Use of TV  
CONARC Tape 9-10-87

Mr. Joseph Walsh  
CONARC ETV/Training Film Unit

This morning we would like to see how television is and can be used for cost effectiveness. We are going to show you some examples of video tape programs from various CONARC installations. As you are well aware, there are many ways to be cost conscious, and many things must be taken into consideration. We hope that from these video tape excerpts, that we will at least have stimulated your thinking as to some of the ways television can help you. Many times we may overlook specific areas where television could play a very important role, by placing a little more emphasis during rewrites, sessions of POI or even new POI of LP. You may find certain lessons that have been overlooked, where TV could provide a partial solution or even the solution. With these few things in mind, let's turn to television and look at these examples.

Our first segment deals with the setup and positioning of the M4T6 raft to make a river crossing. The normal operation time for this river crossing demonstration is 6 hours. The number of personnel involved is in excess of 100 people, plus other support requirements. Thru the use of video tape the demonstration now takes 40 minutes. We are allowing the student to observe all of the operation. Major Russell is going to tell you what that video tape accomplished.  
(CONARC tape 9-10-87A - Segment 1)

Major Russell: It was a demonstration only; they went down to the river to observe how the engineers constructed this bridge. It is a six-hour demonstration. They run this for many years. We took the same test, gave it to the same people who observed it by TV. There was no loss in learning at all, not a bit. It was identical. There was not anything at all in their ability to retain what they had seen on the six hour demonstration versus the 40 minute tape, not a bit of difference.

Mr. Walsh: Our second example is from Fort Dix, New Jersey. The military instructor is conducting a class on the assembly and dis-assembly of the M-16 rifle. In the tape segment you will see, notice the elements of visual reinforcement. This control practical exercise on video tape was tried 4 times on student personnel to insure correct pacing. Shown to two groups of students in the same period of training, only the second group did not use TV. They had a live instructor.  
(CONARC tape 9-10-87A - Segment 2)

200 men (each)

TV Group	Live Group
Tape Time 40 mins	Took additional 40 mins
4 did not complete	30 did not complete
The assembly and disassembly	The assembly & disassembly
Used at many other installations	Fort Gordon first to use

Question: Major Knutsen, you are just getting into TV now, what would be your feelings on self-pacing type in video tape for your students?

Major Knutsen: We are using this control practical exercise in our electronic schools and it has been very effective.

Mr Walsh: Alright, anyone have anything else they would like to add at this time?

Question: How does this differ from the films you have had around for years?

Answer: Again, I have to lean on what Dr Cavert said on this. You, yourself know that when your instructor is in front of a class and he led up to a point where he was going to use the training film most of the time the student turned off. It is what you put into it- now it is true we could use a training film and accomplish the same objective but most of our training films that have been produced are quite outdated; through the use of video tape we are able to up date them currently or bring them up to date anytime we have basically a modification or a change in any piece of equipment. One of the problems with films, you have to turn the lights off in order to follow it and with TV you can keep the lights on during the presentation.

Medical Aid Bag (CONARC tape 9-10-87A - Segment 3)

Many times we find that lack of equipment can present a problem. One such is the case of training medical personnel at the Medical Training Center, Fort Sam Houston, Texas.

Here is an excerpt from a video tape lesson on the Medical Aid Bag. Electronic Officers Maintenance Exam, Ft Monmouth, NJ. (CONARC tape 9-10-87A - Segment 4)

Participation tape student must respond during question period.

Student sees it as it is, therefore enabling him to identify correct procedures as well as incorrect procedures.

CH-47 helicopter advanced maneuvers, Ft Rucker, AL.

This tape segment is used to show the students maneuvers that they will be required to perform during this phase of their training. It makes the student more responsive during the actual training session, thereby increasing flight time. (CONARC tape 9-10-87A - Segment 5)

CH-47 costs approximately 500 dollars an hour to fly. (CONARC tape 9-10-87A - Segment 6)

Preventive Dentistry, Ft Knox, KY. (CONARC tape 9-10-87A - Segment 7.)

Video tape has introduction and explanation.

Time saving and Logistics Savings. (CONARC 9-10-87A - Segment 8)

TS - Reduces time by minimizing recurring tasks that are not essential to the students performance.

Mr. Dolan - I want to answer this -- film and TV are synonymous when we are talking about cost effectiveness. Now this is merely a means of recording something that you want the individual to know, whether we can get a film made as quickly as TV or not doesn't affect what we are trying to demonstrate here.



CONARC TRAINING SPECIALITY WORKSHOP  
Television in Training for VOLAR, Reserves,  
ROTC and Self-Paced Instruction  
CONARC Tape 9-10-88

Major M. Russell  
USAIS, Ft Gordon, GA

Mr. D. Long  
ATC, Ft Dix, NJ

Mr. Dolan - In line with the Volunteer Army approach, the vast responsibility that schools really have in support of reserves, ROTC and a touch on individual pacing or self-pacing instruction. To help us out in these particular areas are some video tapes and on my right, you have met both of these gentlemen, but I will re-introduce them. Major Mel Russell who is chief of television at the Infantry School and Doug Long who is the chief of television at Fort Dix. Mel --

Major Russell - What we would like to do is start with a short tape on the 100th division, the Century Division, Kentucky and on how long they plan to use TV in their reserve training; secondly, Mr Long who is involved with Army training at Ft Dix would like to discuss with you a little bit about the use of TV in the new Volunteer Army concept of training and then we will go back to the tube again for a short program on the use of TV in summer camp, ROTC summer camp last year, and a short talk by General Goers who is in charge of CONARC ROTC training and last I will come back live to you on a short thing on self-paced and try to put it all together for you. So, if we could have the first tape please on the 100th Division in Kentucky. (CONARC Tape 9-10-88A)

Script of Video Tape (Audio portion only)

I'm CPT John Ratliff, Assistant G-3 with the 100th Division. The 100th Division (Tng) USAR is located throughout the state of Kentucky.

Television has come to the Century. Kentucky's 100th Army Reserve Training Division has launched itself into the world of television by developing a plan for use of television during its inactive duty training. This plan is to utilize the advantages offered by this instructional and informational media for training. The 100th had five officers attend the Television Applications Course during the spring and summer of this year to form a nucleus for planning the use of television within the division. Its first planned use will be to bring the major commanders of the division together in a

commander's conference. The practice has been in the past to conduct a commander's conference each quarter with the division commander meeting with the Bde CO's and major staff officers of the five Bde's at locations throughout the state. During the conferences, problems related to administration, training and supply are discussed on an eye to eye level with much interchange of information between commanders. With the television capability, these commanders will no longer require travel to other areas of the state. These will be conducted by closed circuit television with the division commander and his staff at the TV studio and subordinate commanders can view the conference at a local college or university. The result in the use of television for this purpose is a savings of man-day spaces, travel, funds, time and the inclusion of more commanders into the conference. This operation is made possible by the use of the Kentucky Educational Television Network Systems. This system is capable of channeling telecasts into 22 locations throughout the state. This network connects all universities, community colleges and state hospitals throughout Kentucky. Consequently, these stations are located at or near the battalion or brigade headquarters. This will enable more commanders to get first hand knowledge of subjects covered during the commander's conference, thus, eliminating any possible loss of ideas.

Following the commander's conference, the stations could remain on the air for specific instruction in pertinent administration, training and supply procedures. Any late change in policies, procedures and regulations can be thoroughly discussed, explained and workshops conducted in the subject by an instructor at the studio with receiving stations having clerks, staff operators, section chiefs, commanders and other personnel receiving the instruction. Another possible application of Kentucky Educational Television is the use of the over the air facilities for any important scheduled broadcast such as monthly command information topics. This could be prescheduled and announced to all USAR and National Guard units. Also, preliminary talks have taken place between the Fort Knox Television Division and Kentucky Educational Television System to further coordinate future ideas and plans.

Perhaps the most important use of the television system is the improvement of instructor training. Television instruction rounds the instructor into a more proficient and effective trainer. Instructor training is one of the on-going training programs in the division and requires a considerable amount of planning and personnel to conduct this training. By using television, a taped series of classes can be presented with trainers/DS in a receiving location. The new Instructor is given an opportunity to present his class to the camera audience. At the same time, other students throughout

the selected training stations are viewing his presentation. Each student can observe and be prepared to critique the instructor. Most important the instructor can view his own presentation by video tape and conduct a realistic critique on himself. Another use of television can be made during ROTC and National Guard Leadership Training. Since stations are located at the universities being supported by the 100th Division, these stations may carry activities conducted at one ROTC site into the other ROTC locations. In this situation one unit may conduct a unit tactical operation for the orientation of other ROTC units with personnel who have never experienced field operations. These cadets will then know what to expect under such conditions and can enter immediately into the training when arriving in the field instead of spending considerable time in the bleacher area. This holds true for the National Guard Leadership training program also. An added benefit to this operation is that commanders and planners in one location can conduct some planning prior to entering a training program which is being conducted in a distant location. The Century Division feels that the challenge presented by television is no longer on the horizon - it is here. With active Army conducting an increasing amount of training by this medium, the reserve components training divisions must be in a position to assume this training in mobilization. Only by becoming actively engaged in television by seeking ways to use this system may this challenge be made a reality of action.

Major Russell - This is the first state that we know of that has used the system; most states now have a state-wide education television network, and reserves and National Guard and ROTC units have started using more and more of our tapes as they have become available in different formats and we think this is just the start of this.

At this time I would like to introduce Mr Doug Long from Ft Dix who will talk to you a little bit about use of TV in VOLAR. This subject of VOLAR is something that is in the future. I feel a little uncomfortable about trying to predict things but I think Dr. Baer summed up the other evening just about what our current position is and that is one of having to take the process apart and try to figure out how we can make it work better.

Mr. Long - If there is anyone here who is deeply involved in setting up a VOLAR training program or anything of that nature, my apologies because I think I do the VOLAR training program a gross oversimplification. But basically, what this means to the basic training program is a redesign of the very primary instructional concept to a point of dropping all of the extraneous matter from the instruction,

putting it into an orientation of total practical exercise, or almost total practical exercise and application, with immediate go, no-go testing to try to turn out 100 percent pass product. This leads us to a point of being faced with the problem, of course, of redesigning our instructional approach.

To understand a little bit about some of the thinking that has to be done in order to restructure this, it might be beneficial to look at what we currently do in terms of the overall training center. Going back to 1966 when CONARC set up the television playback sites at Army training centers, we started with a one-channel system going into one classroom. At this point in time we ran about 10 programs a week in support of basic training. Presently, at Fort Dix, we run well in excess of 400 programs a week in support of a whole range of activities, but the bulk of it goes to BCT and combat specialist training areas. In addition to that, we provide garrison training for permanent party personnel, a lot of support for various offices on the installation, like the Finance Office, the Safety Office, the Education Office. We provide a rather extensive and continuous program to the Stockade. They use our regular basic training programs plus character guidance and command information, for a continuing program and also a remedial program. In addition to that, we serve the Personnel Center with more or less administrative television in a sense that we do television to assist them in their mechanical procedures of in-processing, out-processing, and basic orientation.

We use two basic types of program material in support of these various activities. Those of you who were here earlier saw our controlled practical exercise type of programming. We also use the conventional programs of the past years in which a number of teaching points are incorporated into a fixed length program that attempts to link together the teaching points and leave the instructor with the task of summarizing, reiterating, answering questions and so forth. The impact of the new VOLAR training concept on this is that we find ourselves with the troops having been marched out of the classrooms and into the fields. Since the bulk of our instruction goes to basic training, we find ourselves at a point in time where we have to examine the kind of visual material we are supplying by television to better suit the needs of that instruction out in the field.

The fact that the trainees have been moved out of the classrooms and put into practical application, practical exercise groups does not do away with the initial responsibility that we have to provide a method of initial information disclosure that gives the trainee, then, some sort of a basis to apply his practical application. If he is not given an adequate instructional initial portion, he is

not going to know what to develop when he starts trying to do the exercise himself. A good example would be the application of a tourniquet. To tell a trainee to go and learn by practical application is fine, but he must be shown beforehand what he has got to do.

The short visual concepts that we plan to produce and develop can be applied to remedial instruction after hours for the slower learners. We plan to set up areas either within the billeting areas or in specified classrooms around the training areas where individual slow learners can come back and receive remediation through the means of the short, single concepts at his own pace to bring him on a par with the rest of the trainees so that he can then perform at this go, no-go pace.

As I said, we must now develop also a highly mobile means of getting the material out to the trainee. We are working now with concepts of mobile television display unit that can be taken right out to the training areas and plugged into the distribution system. They can be put on call at the instructor's request. They can be scheduled by time. We are trying to give the instructor a flexibility in how he uses this material. We are looking very seriously at the television video cassette and cartridge concept and also the super 8 cartridge concept.

That's about the point and I think, primarily, we must just remember that the individual we are presenting this material to must be given a product that he is going to believe.

Major Russell - Something I mentioned earlier, most of your colleges that have ROTC, also have some sort of closed circuit network and we have started sending through CONARC video tapes in the 2" and 1" format to these colleges and they are now using them to some degree in their ROTC training and we are getting more requests for these as time goes on. (CONARC Tape 9-10-88B)

Script of Video Tape: (Audio portion only)

BG Goers - I'm pleased to be asked to talk with you about the application of Educational TV in ROTC. I would just say to you that there are no school solutions in this business and that the opportunities are limited only by the imagination of the user, and, of course, availability of equipment.

Recall that our job in the ROTC Directorate at Headquarters, Continental Army Command, is to manage and supervise senior ROTC hosted at 285 colleges and universities and junior ROTC at about 600 high schools. A part of this job is to explore and exploit innovations

in educational practice and technology. There is considerable evidence now that Educational TV is one of the most promising techniques for use in the program.

Two years ago, Educational TV was tested at two ROTC camps as a means of improving the performance oriented instruction in leadership and small unit tactics. Initial tests were so promising that this past summer we used portable TV units at all camps. Again, the results were encouraging. The major advantage appears to be the opportunity for immediate critique and reinforcement of learning points by the display of good and bad practices. Not only did our cadets enjoy seeing themselves on TV, but an atmosphere which increased cadet motivation to learn was established. All camp commanders supported a proposal to expand the use of TV in the ROTC program to include availability of portable units for on-campus instruction.

ROTC instructor groups on campus have been making more use of CONARC video tapes as TV facilities become available at their host institutions. Increased support can be provided by service schools if consideration is given to ROTC instruction when developing and producing video tape programs. For example, mess management could be taught to ROTC cadets in the environment of the mess hall with video tapes provided by the Quartermaster School, thus relieving the mess sergeant of the "hard core" training responsibility. We can speed the process if we are successful in making some portable units available on campus on a loan basis until these same units are needed at ROTC advanced camps during the summer months.

Many ROTC instructors have confirmed the value of TV when used with critiques of ROTC instruction on military teaching techniques. A cadet is more likely to believe that his mannerisms, his speech, or his lack of organization is distracting if he has the surprising experience of seeing and hearing himself in action. He will also see his improvement with practice. He not only becomes a better instructor, speaker or what have you, but gains the self confidence so necessary in a leader. I don't believe you can beat the immediate playback and critique technique in a practice-teaching situation.

Another good use of a portable TV unit is the taping of guest speakers to almost duplicate fine presentations in later classes. During the school year, 1970-71, 480 guest speakers, with impeccable credentials, as experts in their disciplines made presentations to ROTC cadets and others at 145 host institutions. If portable TV had been available, these presentations could have been preserved for the future.

Video tapes also offer great possibilities for on-campus instruction in military leadership and management. The imaginative instructor can provide realistic military situations for his students with the cooperation of his fellow instructors and the use of portable TV equipment as the basis for leadership seminars or class discussion.

Skits can be developed to summarize important learning points after several weeks of instruction. If these skits could be placed on video tape, they could be used many times without the redundant cost in time and effort of the group of instructors taking part in the skit. This kind of a summary offers verbal and visual review and a welcome variety in instructional techniques.

A word of caution here about the matter of compatibility of TV equipment. This usually boils down to providing the correct size tape for use with the TV equipment available at a particular school. Fortunately, conversion can be accomplished to convert one size tape to another. The important point is consider this requirement at the time TV presentations are being planned.

Again, Educational TV has great possibilities in the ROTC program. This future, of course, depends upon the imagination and ingenuity of professors of military science and their instructional staff and on the support of service schools in considering ROTC instruction and keeping units informed of applicable video tapes.

Major Russell - To sorta sum this up I would like to spend a couple of minutes talking about the use of TV in self-paced learning. At Ft Benning we have a pilot project of 25 running carrels that we have designed there, each of these carrels contained automated slide and audio tape facilities and in addition six of them are equipped with television. On the 15th of this month I will turn the switch and we should become color at Ft Benning, GA; anticipating this we installed color television there, and in addition three of these carrels are equipped with the cartridge super 8 format that we are also testing. When we originally designed these to get programs into them we took programs from our 2" library, set them down to 1" to the helical scan format, about 30 of these, and started using them primarily in remedial learning and in some cases for enrichment and for different subjects such as this. We are now producing programs strictly for the learning center; we are doing it through television means, either by shooting with television cameras or film, 16mm, and taking these, electronically editing them using the means

of television and then stepping them down to the 1" format, which is the inexpensive format for playback, and placing them in the learning center. We currently have about 60 programs available for students. To give you some idea how this might work and how we are using it, a student officer, for example, is getting ready to go out on a field training exercise where he needs, will employ land navigation techniques. He has had land navigation training, he scored perhaps low on it or it has been awhile and he needs some remedial training in it -- now he comes into the library, takes some 1" tape, it is put on the machine for him, he sits down at a carrell and this is played for him. At a point in time it offers him where he must answer questions, say on contour lines or map symbols. If he misses this question, whether he gets it right or wrong, then he gets the answer and it is repeated for him, if he gets it right then it is an additional run, if he gets it wrong it gives him a chance to see if he has corrected the mistake. If he misses it again, then the TV goes black and by pushing the audio switch he gets a slide program on contour lines. Okay, so you have your branching to using multi-media and they run through half a dozen, dozen slides, at the end of this time if he pushes a button it goes back to TV and it takes the next step. We have found it very effective and this technique allows you to use branching in TV which was not available in the beginning. We are turning out more of these programs and as I say are now doing them strictly for the learning center using TV techniques. Currently, it is the most effective, most immediate and the most inexpensive way to provide programs for the learning center. We are open to questions on anything we talked about or any use of TV that you can imagine.

Question: Sir, a question concerning VOLAR. Bring a Marine I don't understand all the rationale, what is the intent of taking the trainee who is the same guy that we had before, the same human being, where is this all going, what's the approach?

Answer: I can speak only in surface terms, the rationale, I am not an expert on VOLAR so don't misunderstand me, the rationale, as I understand it, is that by practical application, actual hands on learning, he will be more proficient, quicker. This also involves a very complex network of peer instruction, learning as he goes along, reinforcement from actually doing the thing in the field.

Question: Is this different than what you have been doing before?

Answer: It's reduced significantly the amount of time that was spent in the classroom in a lecture context, yes, from that standpoint it is a little different. The basic material has not changed, in other words, the material that he winds up learning as I understand it has not changed that much; the technique and the practical application is the innovation and also the removal of extraneous



verbage, nice to know information but not essential. I think probably someone from Benning, maybe you can feel part of that-- really, I am not an expert on the VOLAR concept, only from a standpoint of how I am faced with an application problem at the training center.

Mr Dolan -- This goes back to what Doug said originally, you get the trainee out of the classroom. We're not following the same teaching pattern as in the past by putting them in a classroom for a 50-minute period, then outside for the practical exercise. Now what they do is give them just a little bit in the field and immediately go into the practical exercise. Ft Ord has been conducting an experimental Volunteer Army training program which will conclude in January. The key is get them off their rear ends and doing things. We have known this for years but we deluded ourselves by thinking that all we had to do was give them all the information and then 50 minutes later turn them loose to do it. Well in the meantime what you told them the first two or three minutes is forgotten, then you have to review it all over again out in the field.

Question: I want to ask a question about your program development-- are you able to pre-test on a group of learners and revise or do you have to board it with a group of experts who may or may not understand the problems of your learners?

Answer: No, we are pre-testing at Ft Dix and doing it that way, the board of experts does not work, just doesn't work at all.

Question: Conscious of VOLAR, TOE units and things like that have been taking things away from our headquarters and giving them back to the incoming commanders, people like that; these kinds of commanders are supposed to be establishing their own training programs, how are you going to tie in, like in an infantry division some place, who knows how many infantry companies have their own specific training program, how are you going to use ETV in something like that?

Answer: We are not going to use ETV as the tube because to establish ETV systems in each place would be an impossible task strictly from funding. What we are doing, for example in the DAMP/TVPP, DA Motion Picture/Television Production Program, we are producing now many of the training films, in fact the majority of the training films, by television means. What you are going to get at present, is what you have always gotten, a 16mm training film; what you are going to get that you didn't get before is we are producing these in the same year as they are asked for, where before it would take two or three years and the films were outdated before you got them. Secondly, by

doing them on TV we can revise that program electronically very easily and very quickly and reissue to the field again by using the kinescope method of converting video tape to film. Now it can be available also in color as we convert our stations to color; at that time we will start turning out films in color, 16mm color but you can also get this down to super 8. Super 8 is now available in cartridges with magnetic sound track which was not available before. Or we can convert it to small video tape using the cassette with the television receiver. There are many different methods that can be used, for example, the Infantry School can provide you with the best experts in Infantry that are available and by use of TV production and converting this to film we can provide it to you now in the field. This is what we are looking for now in the VOLAR concept.

The reason you are getting TV kinescopes in the 16mm format is because that is the only equipment you have available. Eventually, and Dr Kanner sitting here from DA, has gone out and has so directed, that the audio-visual support centers will, in fact, replace the 16mm projects with 8mm cassettes or small projectors which we feel, that when available to the unit, is going to be a heck of a lot easier, if you have a small 8mm as opposed to the larger 16mm.

We might hope that the unit commander will have a whole shelf of video tapes or super 8 films or what have you, whatever format, so that if you have someone assigned to you for OJT, you can direct them to these films, plus accompanying programmed texts. If you are going to train one MOS, which is a company problem, one man is assigned and has to be trained, hopefully he will have this audio-visual support either in the company area or nearby in an audio-visual support center.

Question: I am from Ft McClellan and we have the WAC School and the Chemical School, at the same time we have TOE units stationed there, but these TOE units, even though they have all these facilities over at the schools, don't get to use them, because of things like budget, things like that, how are you going to take somebody out of a chemical company and manage to pay for using the TV set. In other words, you don't have any money programmed for something specific that you want. As far as I know there are two active chemical battalions in the whole world right now, one of them is at Ft McClellan, the other at Lewis, I believe. You have a group of people there and they have a specific mission. Therefore, it is not really compatible for the Chemical School or DA or anybody else to make a film for them on anything. How do you manage to get people organized or tied in if you haven't your TOEs right there

where you have facilities so they can use them?

Answer: I think this backs up what I said, we are going to have to get the films to the units. We have concentrated on service schools and training centers and we have ignored the TOE units mostly because it is so darned expensive to put TV everywhere, but with all sorts of new low cost TV items, units can have their own library because it is not now that expensive. We are encouraging the Chemical School and others to look into these things, to make these available to you. All I can say is we are a little late in getting to it but we are moving. Hopefully, within another year or two we will see a big difference in unit support.

CONARC TRAINING SPECIALITY WORKSHOP  
2001 TV ODYSSEY  
CONARC Tape 9-10-89  
Multi-media and Video Tape  
Mr. M. Tesser  
USASCS, Ft. Monmouth, NJ

Audio portion of multi-media presentation:

Most of the upper echelons of the animal kingdom share certain similarities in their perceptions of the world. The faculties of sight, sound and the other senses, for example, are common to nearly all of our vertebrate brethren. Possibly the most meaningful characteristic that distinguishes man from other species is his ability to communicate, with relative precision, his ideas and discoveries to others of his kind. It is this ability which has kept the "lower" forms of life lower, and set up the human being in a role of ecological supremacy wildly out of proportion to his other natural attributes. The great empiricist Issac Newton once said, "If I have seen further, it is by standing on the shoulders of giants." Newton's statement made pointed reference to the stores of knowledge that human beings alone are able to accumulate, merely by preserving and building upon the experiences and lessons of previous generations. To an animal, these lessons are inaccessible except in the dim stirrings of what we call instinct. It depends for its survival upon this instinct, plus reflex and luck. A human baby is born into the same alien universe, and cursed with the same cosmic ignorance. But he has as his birthright the collected wisdom of several thousand years. The vehicle by which he receives this boon is communication. It is little wonder, then, that while other creatures are training their young in the ageless art of survival, a human infant's first lessons are in language. Nor is it surprising that education -- which is simply the organized transfer of useful information from one intellect to another -- has been developed as an art, and a science, in its own right. The beginnings of education were fumbling experiments in expression. Prehistoric man, with his primitive written and spoken languages, tried simply to copy his sense perceptions. Cave drawings demonstrate his predictably strong visual orientation, and suggest that his "speech" ...when he spoke at all, was basically onomatopoeic... imprecise renderings of the sounds he heard around him. He was to discover the shortcomings of direct pantomime as a mode of expression, however, how do you draw a migraine headache, or the passage of time? What does a foggy day sound like? With toolmaking and later with agriculture, man's burgeoning technology placed impossible demands on this sort of communication, and it necessarily became increasingly stylized, standardized and abstract. Eventually language bore no more resemblance to the world which it described than do the hands of a clock to the sun's apparent motion. But there

remained, and still remains, the powerful, instinctive response to audio-visual approaches. Artists, educators, entertainers, politicians -- communications specialists of all kinds -- have not been oblivious to this attraction.

Audio-visual techniques in education were at first a novelty. The impact of the various media was itself sufficiently powerful to insure early successes, and this unfortunately precluded much thoughtful consideration of content and presentation. Take the early instructional films, for example: (film segment shown here).

But a brand new technology was now emerging -- one which held the promise of far greater educational utility. A communications system with all of the impact of sound motion pictures, as well as a versatility and immediacy that the film studios couldn't hope to challenge.

It was a phenomenon that would transform postwar America, and become an incalculably important factor in shaping the intellects and life styles of two hundred million Americans. From their vantage point on the shoulders of centuries of technological giants, scientists all over the world began piecing together the complicated theory and hardware of television.

The television did not, as is commonly supposed, spring from the technology of radio. It is a more natural development of the cinema, in that it faced the same challenge of assembling a multitude of fractional images into an apparently unbroken progression. This actual task proved even more difficult than it sounds, and required the talents of dozens of scientists over the years.

Then, on the first of July, 1941, WNBT-TV signed on. At exactly 1:29 P.M., the familiar three notes of the N.B.C. chimes rang in the new fiscal year, appropriately enough, and signalled the beginning of commercial TV in this country.

That first day's programming included a Dodgers-Phillies baseball telecast, Lowell Thomas with the 6:45 news, a 20-minute USO program, Uncle Jim's Question Bee, the first simulcast of Truth or Consequences, and excerpts from a Ft Monmouth Signal Corps show titled "Bottlenecks of 1941". The first commercial was a spot for which the Bulova Watch Company paid a handsome fee of four dollars. But before television really had a chance to get under way, geopolitics exploded into an even more spectacular production, which opened to theaters all over the globe. Government and military restrictions all but halted the development of commercial TV. Their message was simple: "We interrupt this program to bring you World War Two." When the conflict was finally settled, punctuated by the two terrifying exclamation points which rose up over Nagasaki and Hiroshima, the nation was desperately in need of some good escapist entertainment. The television industry, moreover, was ready to provide it, and 1946 proved

a vintage year. Suddenly the boom was underway, and rapidly assumed proportions that outreached the predictions of even the medium's most ardent supporters. The very face of America began to change, and the log periodic antenna became a permanent part of the National skyline. Since then, the television industry has alternately received praise and damnation from its viewers. It came under virulent attack in the fifties when its critics, weary of stale programming and intellectually degrading salespitches, accused the medium of polluting the airwaves. Battle lines were quickly drawn, and the industry sprang rapidly to its own defense. In actual fact, it had very little defense to offer. Some hesitant steps had been taken toward putting the tube to constructive use, but these had been spotty, ill-funded and generally unpopular. The military took a more hopeful view, and was among the first to back it up with a substantial material commitment. Cable and closed circuit television systems began to emerge at various training installations all over the continental United States. The calculated gamble paid off.

It was discovered that students learned more, retained more, and found the educational experience more stimulating when ETV was incorporated in their curriculum. Instructors were likewise enthusiastic, their job made less complicated by television's ability to bring any desired situation into the full view of the students.

Educational and instructional videotape aids were so successful, in fact, that in 1967, C.O.N.A.R.C. bestowed its official blessing upon the medium.

ETV, proclaimed the edict, had passed out of its infancy and experimental stages. From this point forward, it is capable of telling its own story, and of making its own promises for the future...

NOTE:

At this point in the program a highly visual, imaginative, 17:22 minute video tape depicting the highly futuristic learning of a year 2001 student was shown. Dialogue is at a minimum and the success of the program is in the visuals. No verbatim transcript is therefore provided. ●

CONARC TRAINING SPECIALTY WORKSHOP  
Audio-Visuals in the DA Future  
CONARC Tape 9-10-90

Dr. Joseph Kanner  
OCCE-DA, Wash DC

My presentation is on video tape, naturally, but I thought I would say a few words because one of the dangers when you pre-record to video tape, the assumptions you made when you recorded may not be entirely accurate. Now I recorded with the assumption that this entire two or three day meeting would be devoted to educational innovations which of course it is not. So I would like to make a few comments. One of the developments of great interest to our office, to put it mildly, is the development of a modern Volunteer Army and all that it implies and very frankly, not only in this session, but in many other sessions I have attended, I was surprised to see how little this event impinged upon the discussions I heard. Occasionally, I have heard questions about how will I get certain materials, he goes into the modern Volunteer Army, it is fully implemented, how will I conduct my unit training, etc. because it has very little impact as far as I can see upon this conference. Let me bring up one or two things within the short time that I have I think we have to face up to. First of all, as soon as the draft ends, and I think this is fairly certain, it will not only affect the Army, it will affect the other armed forces with respect to enlistments, etc. They say coming events cast their shadows before them. The past three or four months when the draft was in limbo because of certain congressional activities, and the Army got plenty of volunteers but according to Secretary Laird most of them fell into the Category 4 classification. What are the implications of this going to be for military training, not that we haven't had experience in training Category 4 people, but what are the implications when large numbers of these people come in with respect to such things as systems engineering, what types of decisions are you going to make. Another description of Stanford University on the basis of surveys has determined with the average 18 year old person by the time he has reached the age 18 has seen about 15,000 hours of television. God knows what effect this has had upon the way he learns, it must have some effect. With this type of information, what type of decisions are they going to make when your systems engineer accosts. One of the things that staggered me yesterday was one consultant who said, describing systems engineering techniques, you could put an entire course on TV and motion picture, but it strikes me as illogical. Frankly, the logic of this statement strikes me. We have done this as far back as 1955; we put the entire week of basic electricity on television, tested the students and found out they did just as badly as the other group. They both didn't do too well, but that is not the point. We have had extensive experience with putting entire courses on television, combinations of television, and motion

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Audio-Visuals in the DA Future

Dr. Joseph Kanner  
OCCE-DA, Wash DC

picture, I am not saying this was the complete way of doing things, I am suggesting that perhaps there is a lag between some of the events or experiments in the audio visual area and the knowledge by educators. I refer to this as the Billy Mitchell problem - in 1923, as some of you may remember, Billy Mitchell sank three surplus German battleships off Sandy Hook right in full view of the Admirals, and I don't want to pick on the Navy because they have no monopoly on obstinacy or lack of resiliency, sank these ships right in front of them in 1923. From 1923 until Pearl Harbor we had one of the greatest battleship building programs in the history of this country. I hope we don't need Pearl Harbor type of events to create a change. What I am trying to suggest is the modern Volunteer Army and the implications should be more fully spelled out than it is, it is going to affect all of us. I mention this, this is some of the background which preceded or governed my thinking when I made this tape.

Script of Video Tape: (Audio portion only)

Thank you, Murray Tesser, for an interesting and provocative presentation. Colonel Weaver, ladies and gentlemen, I welcome this opportunity to participate with you in this conference on educational innovations. I recall vividly the first time I appeared at a similar conference at Camp Gordon in 1953, it was called by the then Commandant, General Terrence Telly, and the subject was focused upon the potential use of television for Army training, which was then a very exciting field. We had just finished a major study at Camp Gordon to evaluate the use of television in training and I still recall one sentence from General Telly's presentation in introducing it and talking about TV, and he said, "If you could foresee the day when the trainee would report to his television set instead of to an Army installation when inducted;" of course, this got a number of laughs, and I am not sure that General Telly was entirely serious. Well here it is 18 years later and a number of events have occurred and the experience has been developed which made General Telly's prediction more realistic than it appeared in 1953. In 1953 we had no video tape, we had live television which was a handicap in the sense that you could not do as I am doing now, record and playback at various times. We also had different concepts of training, I recall the major emphasis in those days was mass training, the use of television to reach large bodies of matter, times of emergency, scattered mass instruction; that emphasis is now changing and will change even more with the concept, with the development of the concept of the modern Volunteer Army as well as the results of recent studies by the Army of the educational and training problems. These factors are developing in the modern Volunteer Army and the reports and



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difficulties described in training of Army officers all point to the concept of individualized instruction. For example, with the modern Volunteer Army concept we won't know, as far as I can see, we won't know how many will be coming in at one time; scheduling problems will be of such a nature that you will no longer be able to insure that X number of troops will arrive at Fort Bliss or Fort Gordon or any other place to go through their training and be ready in a certain amount of time. I think the focus will be on small groups of individuals reporting at different times, finishing at different times, and we have the concept of the unit training the individual; with respect to the training of Army officers, the recent Norris report, the report by General Norris and General Westmoreland on his findings concerning officer education; for example, the fact that during the Vietnam crisis a great many OS training personnel were commissioned with little more than high school education at the same time the academy as well as other sources of officers are introducing college trained officers into the system, so we have the problem of senior high school trained officers in charge of junior college trained officers with all the friction that might induce and the need for some system whereby these officers, the ones with high school education, can obtain a bachelors degree or any other form of advanced civilian education. The present system does not quite lend itself easily to the individual needs of these officers as described by General Norris. So it is within this environment of the need for the future anticipated expectation that individual instruction rather than mass instruction will be the prevalent mode within the US Army and it was within this context that audio-visual media can play a very critical role, and I give you some examples. Recently the Radio Corporation of America described to us the ways in which they are using television in this case, the use of television, small portable television devices to provide their engineering personnel of Morristown, New Jersey, there are about 3,000 such personnel, with an opportunity to obtain a Masters degree in Electrical Engineering and similar fields. What they have done through appropriate arrangements with Farley Dixon, Florida State University, and other civilian institutions, is to arrange for the instruction in these courses to be presented by television almost entirely. They still use text books which are tied in with the television lectures, but the main medium of presentation was a small portable TV playback system. These are integrated with textbooks and homework assignment but the major basis is television; there is little or no need for a live instructor. Under these conditions, there is

CONARC TRAINING SPECIALTY WORKSHOP  
Audio-Visuals in the DA Future

Dr. Joseph Kanner  
OCCE-DA, Wash DC

little or no need for a formal educational setting, as in a classroom, it is done at various places at the RCA plant. Having taken most of their instruction by TV, the next step is to fulfill a very brief on-campus residential requirement for the purpose of attempting to pass the examinations relevant to the field in which they are studying. Once having done this, they are now granted a degree by the appropriate university. I think this one example is most important in getting some emphasis with provoking your imagination as to how this might be applied to Army needs. And I am not only talking about the Army need to provide to the modern Volunteer Army or the present members, the need is to provide outside civilian education, whether high school or college, but within the Army environment, or this formal military instruction in our MOS courses. If this concept works, and I mean works from a teaching viewpoint, the student learns as well, at least as well, as he does in the classroom. You can see the implications we are beginning to spell out in our office for the future use of visual media as a means of implementing the concept of individual instruction. If the burden of the old instructions can be carried by visual media, can be television, can be some form of motion picture, Super-8 projection, it doesn't matter, I frankly find it difficult to keep up with the ingenuity of industry and the rapidity with which they are turning out these devices. I am sure you have seen most of these table top television sets, Super 8, I am sure most of you have seen, it doesn't matter, but with this concept of being able to present the burden and bulk of your information through these media you start asking questions, do we need a formal training center, do we actually need a classroom, the physical plant and what have you that is characteristic of the present-day system of training? There are many ways of answering this question, one is the student or the potential trainee may take a lot of his instruction at home, it may be perfectly feasible and, in fact, from an economic viewpoint worthwhile to the Army to arrange for the potential trainee to receive much of his instruction at home prior to entering the Army, but once within the Army environment it is also perfectly feasible to arrange informal training sites whereby the individual can, under an organized system, check out these devices, obtain a credit whether it be for high school or college, all within a particular MOS skill. So, this then in this very brief time allotted to me, is the concept I would like to add to this meeting on educational television. You will hear about computer systems instruction, you will hear about program learning, but that does not rule out any combinations of these approaches with the use of audio-visual media. But I think the future is quite clear, the emphasis as opposed

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OCCE-DA, Wash DC

to 1953 were not beyond mass communication, mass movement of troops and mass movement from class to class, what some educators call the lox step approach, the emphasis will be on individual instruction, instruction tailored to the needs of the individual outside the present formal environment of a classroom or a post and based on almost complete elimination of the live instruction and the use of visual media as the main vehicle for presentation. Thank you.

CONARC TRAINING SPECIALTY WORKSHOP  
Summary

Mr. Thomas J. Dolan, Jr.  
CONARC ETV/Training Film Unit

During the ETV/Training Film Specialty Workshop much information was exchanged between presenters and participants pointing up many changing requirements in the area of CONARC training. In order for television and training films to be effective in the future we must get to the trainee wherever he may be training--be it classroom or field. The state-of-the-art is such that new, small television and film cassettes are available in an extremely portable format which can serve any training location. The major problem is standardization of equipment to provide interchangeability of video tapes and films.

The workshop began with a presentation by Mr Carrigy of the Missile and Munitions School presenting examples on video tape of how the 23" giant can help in training. The highlight of this presentation was the use of television to give a closeup view of small items of equipment.

The major problem in the production of Army-wide training films during FY71 in CONARC was in the area of scripting. The presentation of "Script Writing Made Easy" showed the CONARC philosophy for in-house script writing with encouragement to schools to write their own scripts and not look for Broadway or Hollywood type writers who do not really understand their training requirement.

The DA Motion Picture/Television Production Program commonly referred to as Army-wide training films was changed in FY71 with CONARC charged by DA with the responsibility for management of the program. By video tape the history of these Army-wide Training Films was traced highlighting the importance of these films in support of unit training and the mission of schools in the production of these films being emphasized. Colonel Weaver, CONARC, had workshop participants determine the applicability of examples of these films to Army-wide unit training.

The Air Force television and film program was presented by Mr. Hemphill, HQ USAF. He reflected that the Army and Air Force approaches were quite similar in the area of television and training

films and coincidentally conversion of ETV to color by 1975, the CONARC goal, is also the established Air Force goal.

Although equipment displays were not extensive, it was appropriate to have the Sony and AVCO Corporations demonstrate the new video cassettes and cartridge machines. It provided the workshop participants an opportunity to see these highly publicized but rarely seen pieces of equipment.

Civilian consultant, Dr C. E. Cavert of the Great Plains National Instructional Library touched on academic credit by television but more appropriately devoted most of the time given him to the problem of instructional design of education. The CONARC Systems Engineering program is the CONARC counterpart. After much discussion with participants on Tuesday, Dr Cavert redirected his thinking and on Wednesday challenged the Armed Forces to get on with the program to provide, through systems engineering, better quality learning. He stressed more meaningful use of television and films.

Mr Joe Walsh, CONARC, presented examples of cost effective use of television in Army training. Following short excerpts of video tapes, participants in the workshop discussed the potential for these and similar examples to save on limited training resources.

Increased utilization of television in reserves and ROTC training was provided by BG Goers and the 100th Reserve Division by video tape. The 100th Division has a working agreement with the Kentucky State Educational Television Network to transmit training programs to reserves throughout the state on open circuit television in support of reserve training. General Goers pointed up the appropriateness of television in self-critique of summer ROTC training using portable television units and indicated increased use of video tapes for campus instruction of ROTC cadets.

Mr Long, representing ATC, Ft Dix, provided an overview of the changes in the upcoming BCT, AIT training in MVA as it will influence the use of television at Ft Dix. The requirement for mobile playback to follow the trainee wherever he is was the overall conclusion of this presentation.

The Infantry School Individual Learning Centers use a combination of film, slides, and television. Major Russell of the Infantry

School pointed up the appropriateness and responsiveness of television for individual-paced instruction in these Centers.

The Signal School, represented by Mr Tesser, provided a look at the past through use of slides followed by a tape showing the possible future direction of educational television and integration and use of multi-media in the year 2001.

The entire workshop was summed up by Dr Joseph Kanner, OCCE, DA as he provided the latest DA thinking and concern for Audio-Visuals to support the type and caliber of soldier that will make up the Modern Volunteer Army.

**SAMPLE  
OUTLINE SCRIPT  
(PARTIAL PROGRAM)**

**THE OUTLINE SCRIPT IS AN ORDERLY OUTLINE OF ALL TEACHING POINTS TO BE DISCUSSED WITH KEY OR CUE WORDS, CAMERA DIRECTIONS, AND VISUAL SEQUENCE. IT IS USED BY QUALIFIED INSTRUCTORS TO RETAIN NATURALNESS IN PRESENTATION.**

**VTR 58  
CALIBRATING ROTOR SPEED OF THE  
ELECTRICAL TURN AND SLIP INDICATOR**

**VIDEO**

**Medium close-up at flip chart**

**Close-up of strobe on workbench  
right**

**Close-up of each part as described**

**Follow with close-up of each item  
as instructor performs each step  
explains**

**AUDIO**

**Narrator:**

- 1. Introduction**
  - a. Purpose of demonstration**
  - b. Stroboscope definition**
  - c. Stroboscope use**
- 2. Describe stroboscope**
  - a. Housing**
  - b. Window**
  - c. Panels, front and rear**
  - d. Lens**
  - e. Operating controls**
- 3. Describe and illustrate operating steps.**
  - a. Power cable**
  - b. Power switch**
  - c. Reed switch**
  - d. Slo-direct switch**
  - e. Contactor switch**

SAMPLE  
SEMIScript  
(PARTIAL PROGRAM)

THE SEMIScript IS AN EXPANDED OUTLINE WITH SPECIFIC CUE SENTENCES OR  
VERBATIM NARRATION AS REQUIRED TO INSURE ACCURACY OF AUDIO AND PICTURE  
CONTENT.

VTR 58  
CALIBRATING ROTOR SPEED OF THE  
ELECTRICAL TURN AND SLIP INDICATOR

VIDEO

AUDIO

Medium close-up narrator

Narrator:

Close-up strobe

1. Introduction
2. Describe stroboscope

Close-up each part as described

- a. Housing
- b. Window
- c. Panels
- d. Lens
- e. Operating controls

Close-up cable

3. Describe and illustrate operating steps

Close-up switch

- a. Power cable
- b. Power switch

Close-up switch

- c. Reed switch

Close-up switch

- d. Slo-direct switch

Close-up switch

- e. Contactor switch

Close-up dial scale control being  
turned

- f. "Adjust the dial scale control for  
a reading of 3,600 RMP on the "hi-  
low" dial scale located at the top  
of the tester.

Close-up of tester, zoom in extreme  
close-up of hi-low dial



SAMPLE  
FULL SCRIPT  
(PARTIAL PROGRAM)

THE FULL SCRIPT IS USEFUL WHEN THE PROGRAM CALLS FOR PRECISE WORDING, DRAMATIC EFFECTS, NARRATION OVER FILMS, ACCURATE DESCRIPTION OF COMPLICATED MATERIAL, CAREFULLY TIMED DEMONSTRATION, OR WHEN THE INSTRUCTOR IS NOT COMFORTABLE IN AN AD LIB SITUATION.

VTR 58  
CALIBRATING ROTOR SPEED OF THE  
ELECTRICAL TURN AND SLIP INDICATOR

VIDEO

Fade up on shot of CH-47 on  
hard stand with rotor turning  
Dissolve thru to instructor  
wide shot to show strobe & turn  
and slip indicator

Cut to tight shot of strobe  
Key "Stroboscope"  
Key out  
Cut to waist shot of instructor

Cut to tight shot of turn &  
slip indicator  
Key "Turn & slip indicator"

Key out  
Incl 1-C

AUDIO

Music in full . . . and fade for  
Narrator:  
During this demonstration you will  
be shown the equipment, components,  
calibration procedures and techni-  
ques used in calibrating the strobo-  
scope . . . and its use in cali-  
brating the rotor speed of the electri-  
cally driven turn and slip indicator.  
(Pick up strobe) This demonstration  
will introduce the stroboscope, show  
its individual components, give a step-  
by-step procedure for calibrating this  
instrument . . . (Put strobe down, pick  
up T&S Indicator) and detailed instruc-  
tions for its use in the rotor speed  
calibration of the turn-and-slip  
indicator.

ETV/TF SPECIALTY WORKSHOP\*

<u>CONARC Tape #</u>	<u>Title</u>	<u>Speaker</u>	<u>RT</u>
9-10-78	Welcome to the ETV/TF Workshop	Mr. Dolan	3:50
9-10-79	Help from the 23" Giant	Mr. Carrigy	26:40
9-10-79A	Prepared Video Tape Segments only		
9-10-80	Script Writing Made Easy	Mr. Dolan	44:15
9-10-80A	Prepared Video Tape Segment only		
9-10-81	School's Role in Army-wide Training Films	COL E.J.Weaver	31:02
9-10-81A	Prepared Video Tape Segment only		
9-10-82	The Air Force Outlook for ETV	Mr. A.D.Hemphill	43:00
9-10-82A	Prepared Video Tape Segment only		
9-10-83	Air Force Plans for ETV	Mr. A.D.Hemphill	25:00
9-10-83A	Prepared Video Tape Segment only		
9-10-84	ETV Discussion Period	Mr. Dolan	25:00
9-10-85	Demonstration of Video Cartridge Cassette	Mr. Joseph Walsh	35:40
9-10-86	Academic Credit by Television	Dr. Edward Cavert	58:12
9-10-87	Cost Effectiveness through the Use of Television	Mr. Joseph Walsh	34:30
9-10-87A	Prepared Video Tape Segments only		
9-10-88	Television in Training for VOLAR, Reserves, ROTC and self-paced Instruction	MAJ Melvin Russell	
9-10-88	Television in Training-VOLAR	Mr. Douglas Long	11:30
9-10-88A	Television in Training-Reserves	CPT John Ratliff	8:00
9-10-88B	Television in Training-ROTC	MG Goers	7:00
9-10-88	Television in Training-Self Paced	MAJ Melvin Russell	11:00

<u>CONARC Tape #</u>	<u>Title</u>	<u>Speaker</u>	<u>RT</u>
9-10-89	2001 Television Odyssey	Mr. Murray Tesser	29:00
9-10-89A	Prepared Video Tape Segment only		
9-10-90	AudioVisuals in the Army's Future	Dr. Joseph Kanner	17:00

Tape # less A represents live recording of actual conference including prepared supporting tapes.

Tape # with A indicates prepared supporting tapes only.

\* Television tape copies of the entire ETV and Training Films Specialty Workshop or the pre-prepared TV tape segments are available to Defense Department and HEW agencies provided sufficient unspliced video tape raw stock is provided this headquarters.

Requests should be submitted to Commanding General, CONARC; ATTN: ATIT-SEF, Fort Monroe, Virginia 23351.

Incl 2-A