TRAINING

OPPORTUNITIES AND GUIDELINES FOR VIDEO TAPING IMAGERY FROM SWIS*

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1. INTRODUCTION

The arrival of SWIS, coupled with increased videotape capability at NWS offices provides an unparalleled opportunity to undertake local research studies and to prepare training aids. This fact sheet, and the attached synopsis, should help you make the most out of your efforts at video taping.

With SWIS's storage capabilities, video taping need not interfere with operations during significant weather events. Often video taping can be done AFTER the event (or AFTER a forecast issuance) without serious loss of information. Of course, taping during an event shouldn't typically interfere with viewing SWIS either.

Significant weather events can emphasize severe and winter storms, tropical cyclones, and heavy rainfall events. They can also include mountain waves, basic imagery interpretation, convective processes, moisture channel examples, and evaluating numerical model initialization. Whatever is of interest locally or emphasized by Regional Headquarters is fair game.

Your regional Scientific Services Divisions, Regional SWIS focal points, NWS Headquarters Satellite and Training Focal Points, and NESDIS' Satellite Applications Laboratory are among the groups that you can turn to for advice and for sharing your findings and examples.

2. VIDEO TAPING TECHNIQUES AND GUIDELINES

When video taping SWIS images you should keep in mind that they may eventually have to be reproduced for either training and/or research purposes. By following the guidelines presented here, you will be assured of producing the best possible image. Remember that the original SWIS image is produced on a high resolution monitor, and the imagery is transmitted from the computer in the RGB (red, green, blue) encoded format. All video taping must be accomplished in the NTSC composite video format, which mixes the separate colors along with the luminance (brightness). This is the standard for all video recorders, TV sets, and normal broadcasting. The resolution, therefore, will not be as great as what is seen on the original SWIS monitor. In addition, the VHS playback also reduces the quality. Each step degrades the image from the crisp, clear one you see on SWIS.

Generally, all taping should originate from one of the NTSC BNC video out connectors on the lower rear panel of the SWIS unit. These are the standard video ports used to interconnect video components. This is preferred to shooting the screen with a video camera. Taping in this way eliminates resolution and color degeneration, and focus/alignment problems introduced by the camera. It also ensures full screen imagery and a continuous registration/aspect ratio (i.e. no change in camera position).

One characteristic that is inherent to most NTSC composite monitors (what the recorder will connect to) is a feature called "overscanning." This means that the transmitted area will be less than what is observed on the SWIS unit itself. To make matters worse, very few monitors will reproduce this area the same way; some may cut off more of the left edge while others more of the right. The same holds true of headers or bottom legends. Therefore, all pertinent data must be within a "picture or title safe" area of the original image. To be safe, do not allow any data, graphics, or titles, which *must* be seen in the final result to be nearer than 1 inch from any edge of the original SWIS image. In some cases you may have no control over this.

Probably the toughest problem to eliminate is color inconsistencies. *Black and white* images will always reproduce cleaner than color. This is especially true with grid lines and graphics. Experience has shown that white will almost always prove to be best. When color is used for enhancements or graphics, try to use colors that are video compatible. There are no specific rules for this and at times the results may seem to be in the abstract. Basically try to choose bright, clear colors, and avoid tenuous variations. Some colors, particularly the reds, will pose stability problems, especially for thin graphics and symbols. This means they will appear to "jump" or "jitter" as the electron beam scans across the face of the TV screen. Blues and yellows usually produce sharper and cleaner results, and pastels often prove pleasing. Therefore, when composing the image; (1) keep the enhancement as simple as possible; (2) keep it as much monochromatic as possible; (3) choose bright, clear, colors, with good saturation, avoiding deep subtle variations.

When recording segments or loops for distribution with the possible intent of inclusion in a training or case study package, you should consider the following:

—Always use the fastest tape speed recording ratio. In VHS this will be the SP (standard play) mode. This will provide 2 hours of play time on a standard 120 tape. This will provide the highest playback resolution possible and is required for any quality reproduction.

—Record loops and segments long enough so that any narration or instructional voice over can be added at a

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Satellite Weather Information System.

later date. It is always easier to cut time from a segment than have to lengthen it by a series of assemble edits. If you have imagery or a case that is really good or of particular interest than let it cycle while recording for several minutes. Then add appropriate AFOS overlays or data sets in effective colors and tape each overlay or overlay composite for at least 2 minutes. Remember the tape has 2 hours of recording time, and seldom will you fill it on any particular event.

—Identify each segment with some type of title. This is because what is fresh in your mind while recording, may not be several months later, and certainly not for personnel at another site. If available, you can use a graphic tablet to insert information over a static image. Information that should be conveyed would include date, time (preferably GMT), sector, event classification (thunderstorm, tornado, fog, etc.), site where recorded, and any other information that could prove useful. These should be recorded for a minute or two preceeding each event segment. They do not have to be neat, as they are for identification purposes only. If the material is later included in a formal training program or presentation then the information can be inserted via a character generator. Titles will also prove useful when fast forwarding in search of a particular segment. In addition, a written index on the cassette itself, or its case will be very convenient. Logging tape counter information is an excellent bookkeeping vehicle.

Video tapes themselves are inexpensive, so it might be desirable to have separate video tapes prepared for specific weather event categories. A tape for severe weather, another for general convection and one for mountain waves might be sufficient for your forecast area. On the other hand, a dozen categories, some with multiple tapes addressing seasonal phenomena, may be in order. This will be a function of interest and regional emphasis.

3. SUMMARY

Sharing your examples with nearby offices, Regional and National Headquarters, and NESDIS's Satellite Applications Laboratory, will both edify and enhance your recorded selections. As appropriate, your cases may find their way into techniques development and training programs. Local use, for training and research, is assumed to be ongoing.

SWIS VIDEO TAPING TECHNIQUES SYNOPSIS

1. Connect video recorder directly to a BNC video-out port on rear of panel of SWIS.
2. Use fastest tape speed available on recorder (i.e. the SP or standard play mode for VHS recorders).
3. For highest resolution and clarity, record in Black & White whenever appropriate.
4. When recording color enhanced material, try to choose colors that are video compatible. Examples are colors like blues and yellows.
5. Try to keep all pertinent data at least one inch from edges of the screen.

6. Precede each segment with a description, dates, times, etc. As appropriate, use a graphic tablet for direct recording onto video tape. Annotate tape and tape box label, as well.
7. Record data loops for a minimum of 2–3 minutes each, longer when applicable.
8. Record imagery both with and without AFOS overlays.
9. Record imagery both with and without color enhancements.
10. Capture and record the information in a timely fashion. *After it has passed from SWIS's memory banks it is too late!*

FOLKLORE

"SHEEP IN A HUDDLE, TOMORROW'S A PUDDLE"

Sue Mroz

Sheep, cattle and buffalo all have a behavioral tendency to bunch together prior to a storm. Unfortunately many cattle do this under a tree or against a metal fence during a thunderstorm and are killed in large numbers by lightning.