

# Modifications to VTR equipment to provide an Improved Method of Editing 1/2-inch Videotape Recordings

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## Introduction

Editing with any 1/2-inch videotape recorder, such as the Sony AV 3650, was a tedious and time-consuming procedure.

Successful editing with clean picture cuts at precisely the right time was dependent, to some extent, upon guesswork and good luck! Even if the editor was fortunate enough occasionally to obtain a good picture cut, he was always faced with the problem of the sound cut being double recorded equal to the distance between the erase and the record heads.

It was after a considerable amount of frustration, trying to produce low-cost video programs within a reasonable amount of time, that Robert Forget conceived a method of eliminating the guesswork and achieving satisfactory results.

He discussed his idea with a group of NFB technicians who accepted the challenge and proceeded to convert the idea into reality.

## General Requirements

Devise a system for automatic editing of 1/2-inch videotape recordings.

It must be possible to select the first and last frames and the length of each scene, so that when they are assembled by transferring from one machine to another they produce a reasonable facsimile of the results obtainable with professional equipment.

## Specific Requirements

Modify the Sony AV 3650 videotape recorders and attach a push-button-operated control system to meet the general requirements.

When editing picture and sound, together or separately, the cut at the editing point must be technically and visually "clean".

The reasons why the 1/2-inch VTR equipment did not meet the general requirements were:

- 1 Difficulties existed in manually selecting and retaining in sync the exact picture cutting points on both the original videotape and the master assembly tape. Also, the procedure could not be repeated for rehearsal prior to the actual transferring process.
- 2 A perfect cut in the associated sound track was not obtainable due to a 1.7 seconds delay between the erase head and the record head. (Fig. 1)

## Phase 1

The difficulty in selecting and retaining the picture cutting points was largely overcome by:

- (a) Stopping and starting the machines from one common switch.
- (b) Providing a method of reversing both machines so that together they would run forward and backward.

An operating procedure was then established:

- 1 Locate the first frame of the shot to be transferred by adjusting the tape manually and viewing the still frame on a monitor.
- 2 In the same way, select the last frame of the previously recorded shot on the master tape.
- 3 Reverse both tapes "in sync" for a few feet so that when they are run forward again, they will be at normal operating speed and locked before the record button is pushed at the selected editing point.

Phase 1 modifications, therefore, consisted of extending the capstan motor connections to the exterior of each machine and connecting them to one common switching circuit. (Fig. 2)

In the forward mode, all the motor wiring connections of both machines are normaled through the common switching circuit.

