

COMPANY CONFIDENTIAL

PROJECT STRETCH

FILE MEMO # 25

SUBJECT: 727 Tape Unit for Stretch

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The Stretch machines ability to use 727 tape is mandated by the provision that Stretch machines should be able to communicate with the 700 series machines and use their equipment for auxiliary operation. The use of 727 tape implies a 727 Tape Unit, and use with Stretch directly should indicate transistorized electronics.

As long as the electronic circuits must be redesigned, consideration should be given to redesigning the logic and packaging. Any improvements suggested by present use should be considered and evaluated. The power supplies now in the control unit may be broken up economically. Then each tape unit could supply its own power, reducing the waste in using control units with less than 10 tape units and permitting the use of new 727's with old control units. The placing of the final amplifiers within each tape frame was suggested by many persons. The time now spent in testing and adjusting the gain of the amplifiers would be substantially lessened. Noise would be more of an individual tape unit problem and not a system problem. This would make the tape system more reliable. The cost of added equipment must be weighed against the added flexibility and ease of maintenance.

The 727 Tape Unit as it now exists requires the following inputs with plus 10 or minus 30 volt levels;

- (1) Write Bus (7 lines)
- (2) Write Check Char (reset Write Triggers)
- (3) Go (Moving Coil circuits - Tape Motion)
- (4) Backward (Forward reverse Magnet to reverse)
- (5) 10 Sel lines (1 manually selected by knob)
- (6) Start Rewind
- (7) Set Write Status
- (8) Set Read Status
- (9) Write Pulses
- (10) Turn on Tape Indicator
- (11) Turn off Tape Indicator

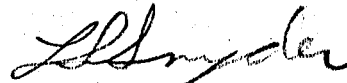
It puts out the following lines

- (1) Sel Ready & Read
- (2) Set Ready & Write
- (3) Sel & Tape Indicator off
- (4) Sel & Tape Indicator on
- (5) Sel & Rewind
- (6) Sel & at Load Point
- (7) Read Bus 7 lines (Bipolar pulses)
- (8) Write Echo Bus (7 lines)

which, with the exception of the Read Buses are again plus 10 and minus 30 volt

levels. The read pulses are plus 10 and minus 10 volt pulses. A pulse is a one whether it is positive or negative. Information is transmitted 7 pulses in parallel every 67 microseconds. The Load Point and Tape Indicator Triggers are set within the Tape Unit by photocell sensing of reflective spots.

Since the 727 Tape Unit contains nothing but basic motion controls and information handling units, it can easily be used by a Stretch machine in whatever way it may be desirable.



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