

VLBA ACQUISITION MEMO #267

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

HAYSTACK OBSERVATORY

WESTFORD, MASSACHUSETTS 01886

27 September 1991

Telephone: 508-692-4764

Fax: 617-981-0590

To: VLBA Data Acquisition Group
From: Alan E.E. Rogers and Hans F. Hinteregger
Subject: Tape (thin) and transport handling procedures

Shipping and Receiving

- 1] Use only self-packing glass reels with outer plastic band and twist lock canister. (Non self-packing reels result in edge damage, during shipment, of scatter wound turns.)
- 2] Use "zebra" tape to fasten down tape end. (Other tapes can leave sticky deposits which can get on the tape path.)
- 3] Allow a few hours in the control room after shipment before opening and using tapes. (Moisture will condense on a cold tape, make it sticky, and increase friction.)

Tape Mounting and Loading

- 1] Be sure to mount the reel firmly against the motor flange so that there is no wobble when rotating. (A misalignment can cause excessive dragging of the tape against the reel flange and/or fold-over at the I/O rollers.) Also check for tightness and tighten the hub latch if necessary.
- 2] Fasten the tape to the glass take-up reel using static-cling (or moisten the end if absolutely necessary). (A bump on the take-up reel produced by a folded end propagates up through the pack.)
- 3] Be careful not to fold over the tape edge when threading.
- 4] Be careful to thread the correct path without catching the tape on the triangular piece near the idler, or inadvertently bypassing either I/O roller.
- 5] If there is any strange noise when the tape runs stop operation immediately. Check tape path. If problem persists, seek advice from recorder engineer.

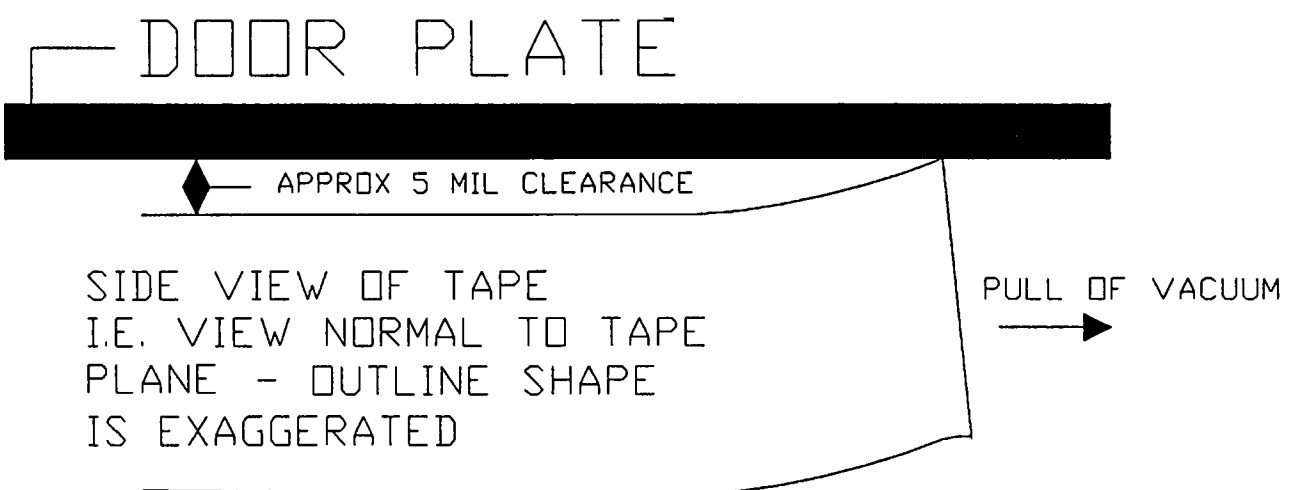
Cleaning the Tape Path

- 1] Before mounting a new tape, clean the tape path. Be sure to clean the headstack and especially the places where the edge of the tape contacts the precision plate and the front door (see attached Figure). Use isopropyl or ethyl alcohol and Q-tips. Use a separate clean Q-tip for the headstack. Use a wiping motion perpendicular to the direction of tape motion for head cleaning. (Be careful to clean the tip plate and not the sides of the headstack, as the connections on the side can be broken with too much cleaning.)
- 2] Clean the optical vacuum loop sensor windows, capstan, and idler for every tape change. (Whenever tape slips on capstan or idler the surface tends to become glazed and unprocessable off-speed recordings may result. Alcohol restores the grip of the polyurethane-impregnated surface.)

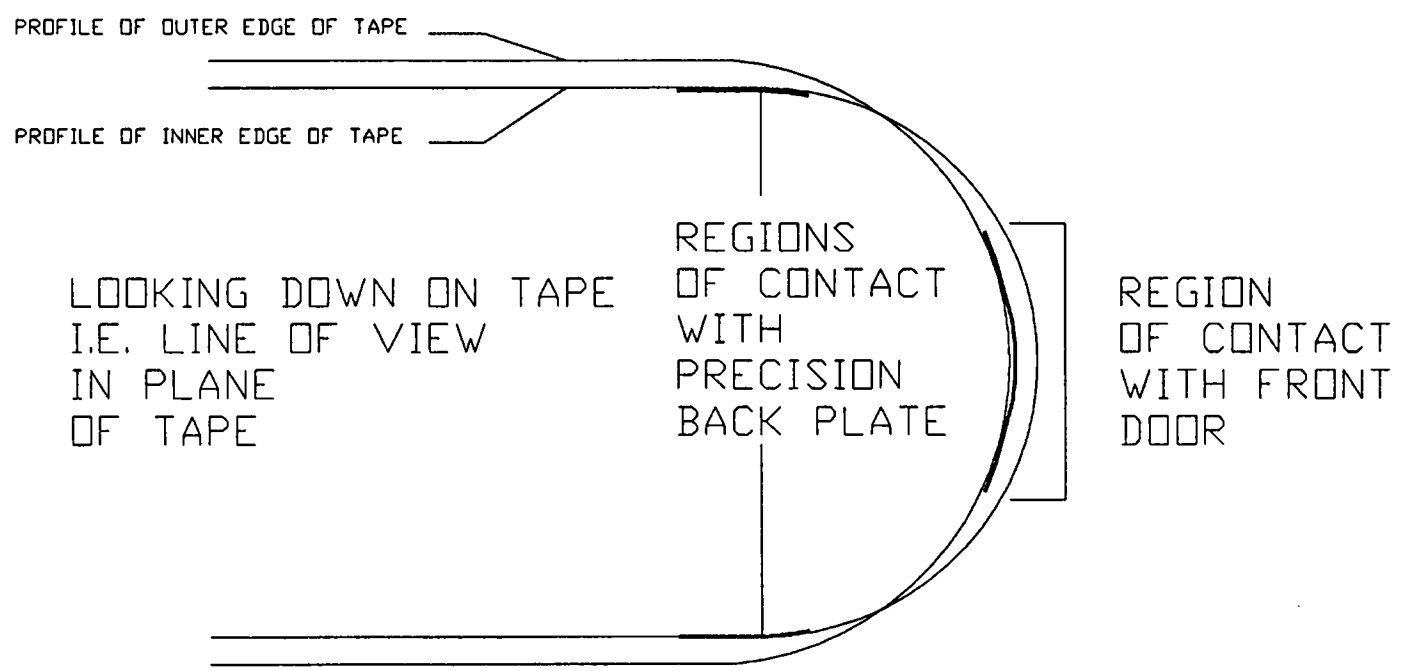
- 3] Prepass tapes ahead of time. The addition of a prepass improves performance and allows rejection of problem tapes. Clean the tape path (especially the headstack) at the end of the forward pass of the prepass. (Most loose debris is deposited during this first physical pass of a tape. If the tape direction is reversed before cleaning - the scrapings collected on the leading edge of the headstep tend to be redistributed on the tape.)
- 4] Whenever a tape is loaded make a careful inspection, preferably with a magnifier and flashlight, of the edge contact regions for build-up of hard deposits that can increase the heating of the tape edge and damage the tapes. Do not run the tape until hard deposits are removed, normally by persistent scrubbing with a Q-tip and alcohol.

The regions of tape edge contact with the precision plate (93° corners between precision plate and the "E"-casting) can be difficult to clean adequately. The use of a safety razor can speed this essential job, but care must be taken not to damage the soft aluminum surface-bearing walls of the "E"-casting.

Engineering efforts are underway to make edge bearing deposits less likely to occur, more readily noticed, and more easily removed. Successful improvements should be incorporated in the "hard-point" modification.



PRECISION BACK PLATE



TAPE EDGE CONTACT REGIONS