

VLBA ACQUISITION MEMO #382
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
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To: VLBA Data Acquisition Group

From: Alan E.E. Rogers

Subject: Minutes of VLBA Recorder Telecon held 15 June 1994 at 1300 EDT

Attendees: AOC Haystack
Barry Clark Hans Hinteregger
George Peck Alan Rogers
George Romney

Slipping Capstans

George Peck arranged for all the older style capstans (mostly -009) to be put on the correlator at the AOC. It was then quite clear that older style capstans tend to slip with the thin tape at 7" vacuum. The experience with the older capstans at Haystack has been good but probably only because they have mostly had their air relief grooves machined out to a larger cross-section. Experience and theory both show that the air relief groove design (see VLBA Acquisition Memo #268) is marginal. There are two options for fixing the problem with the older capstans:

- a) return them to Metrum for replacement of the roller with the newer design (which has a rougher surface),
- b) modify the rollers in the shop by clamping the motor in a lathe and using a 20 mil wide cut-off tool to increase the depth of the grooves to about 30 mils. Rather than running the lathe, it is best to use a power supply to run the capstan for the machining operation.

Wearing front door plates

There is evidence that the aluminum plates on the front vacuum door of the 96 are wearing quite fast. It is suggested that the door margin test be used in the field to verify the tracking performance and that the plate be rotated when it becomes excessively worn. Some statistics and quantitative measure of the wear rate is desirable. There is also some concern that the aluminum plates are getting grooved and clogged with deposits which could increase friction and damage the edge of the tape - more investigation is needed to clarify this concern.

Broken reels

FedEx managed to break a glass reel. It appears likely that the tape canister fell from a conveyor belt at a height of 15'. There is some question as to whether the foam inserts were correctly in place on both sides of the reel. George plans to investigate the incident and carefully remove all the glass fragments from the tape which should be recoverable.

Recorder firmware

There are still two outstanding questions about the recorder firmware that came from Steve Blockman, as follows:

- a) Why does the mini-decoder take so long to respond? and is the sync word detection status bit reliable?
- b) Is it possible to keep the ramping bit true as the tape speed goes through zero on a tape direction change?

A more rapid and reliable response from the mini-decoder would be nice and keeping the ramping bit true until the slew is complete would help prevent the high level software from thinking that it is done prematurely. Steve will contact Roger on these questions.