VLBA ACQUISITION MEMO #172

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2 October 1989

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TO: VLBA Data Acquisition Group

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SUBJECT: Some quick tests of S-VHS tape

S-VHS is reported to be very similar to D-1 (see VLBA Acquisition Memo #157, 163, 169, and 170) (except that it is only available in 20 micron thickness) and so some quick tests were made to test this assumption:

1] Resolution

Relative to Sony D1K the response at 1 micron wavelength (relative to long wavelength limit)

Tape	Response at 1 micron
3M S-VHS	-1 dB
JVC S-VHS	0 dB
MAXELL XR S-VHS	+1 dB
FUJI PRO S-VHS	+1 dB

2] Output

Relative to Sony D1K

Tape	Total power (equalized signal 56Kfci)
3M S-VHS	0 dB
JVC S-VHS	+2 dB
MAXELL XR S-VHS	+3 dB
FUJI PRO S-VHS	+3 dB

3] Abrasivity (Made by interchange between VHS and 13 μm D1.)

Tape	Head wear	Comments
3M S-VHS	<0.002 μm/hour	at 30% relative humidity
MAXELL XR S-VHS	<0.002 μm/hour	at 30% relative humidity
FUJI PRO S-VHS	≈0.006 μm/hour	at 30% relative humidity

4] Summary

S-VHS looks very similar to D1. The resolution is about the same (i.e. magnetic particle size is about the same) and the output if anything is somewhat higher. The lack of abrasivity of 3M S-VHS should be good for head life - but may make the heads susceptible to clogging. [The abrasivity measurements for 20 micron tape are more dependent on the computed profile than measurements of 13 micron tape because of the smaller thickness ratio and I regard the abrasivity measurements as very tentative.]

5] Notes

3M S-VHS and MAXELL S-VHS appear to have a normal looking back coat while the JVC and FUJI tapes have little or no back coating. 3M mentions head cleaning in their instructions while FUJI and JVC do not. MAXELL instructions are in Japanese.