

**VLBA ACQUISITION MEMO #158
(REVISED)**

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To: VLBA Data Acquisition Group
From: Alan E.E. Rogers
Subject: Playback of Pie Town data at the MKIII correlator - Corrected Version

We now have considerable experience with data recorded at Pie Town in the MKIIIA format (33,000 bpi, 17 μ m guard bands on Fuji H621 tape). Initially the error rates were high and some tracks had parity error rates of 1%. The primary cause of the high error rates was eventually traced to a cross-talk problem - see Acquisition Memo #152. After reducing the record current to reduce the record cross-talk to a negligible level the byte parity error rates at the correlator have been reduced to between 1.0E-5 to 1.0E-4. That is for the worst track one in 10^4 bytes have a parity error. Typical sync loss is 1.0E-4, that is one frame in 10,000 frames has a loss of sync. Further, we expect sync loss performance with the AT&T bit synchronizer which will be used in the VLBA playback electronics to be a factor of 10 better (see Acquisition Memo #145).

If the strategy for frame editing in the VLBA FX correlator is similar to that suggested in Acquisition Memo #91, it is reasonable to expect a data loss (due to data being flagged invalid) of less than 0.25% for the worst track with a byte parity error rate of 1.0E-4.