

ENGINEERING PROPOSAL

JANUARY 1987

WRSU-FM, NEW BRUNSWICK 88.7

SUBJECT: STEREO AUDIO CARTRIDGE DECKS

RECOMMENDATIONS: FIDELIPAC CTR-100 SERIES

After reading the available sales literature on new Stereo Cart Decks readily available on the Professional Market place, Engineering is recommending the *Fidelipac CTR-100 Series*.

This Series of Cart Decks used the new Standard of Matrix recording system. This new Matrix system has several advantages over the NAB standard:

- Matrix stereo decks are 100% Mono on the air compatible because there are no phase problems to deal with. Also this make the head alignment less critical than in the NAB Stereo Standard.
- The CTR-100 Have a special MONO mode in which carts can be recorded in mono form a mono source, with no phase problems.
- In Mono Mode the CTR-100 can play back all existing Mono carts from the station's past with no head problems. (Translation: WRSU can use all the old carts recording in NAB Mono and play them back on the new cart decks. The station does not have to erase all the old carts. We can continue to used the MONO recorders in Studio B and News Production.)
- The Matrix Mode Stereo Carts can be played back (in mono) with no problems in the Mono cart decks with no adjustments.
- Any cart either recorded in Mono or Stereo can be played back on any Cart deck in the station.
- In the future, if needed the CTR-100 decks can playback and record NAB Stereo.

It should be pointed out that NAB MONO and NAB Stereo are incompatible. This means that if we are to go to the NAB Stereo standard, all the cart decks in the station would be to be either replaced or modified to operate. All OLD carts would be to be erased. Alignment of the NAB Stereo Standard is more critical and **must** be more aligned often.

The draw back of the Matrix Stereo/Mono System is that the cart must be labeled to which type of cart they are. The Stereo cart deck will be set in the default mode (no label) of MONO. Following is a chart detailing the Label problem and default conditions:

	GATES MONO	Fidelipac Matrix Stereo
OLD MONO CARTs NO LABELS	old cart old deck NO PROBLEM	cart will play in mono and cart deck will be in MONO mode-NO PROBLEM
Stereo CART with label	L+R top mono NO PROBLEM	Stereo Play back GREAT
CART RECORDED in MONO DECK(ex:news pro) with STEREO LABEL	Mono recording MONO Playback	Stereo deck with read the stereo label, and believe that it is a Stereo cart: Cart deck will go into stereo mode Top track: L+R(mono recording) Middle Track: L-R(blank) Bottom track:cue tone <i>Result:</i> Right output: $L+R - (L-R) = 2R$ mono - blank= mono Left output: $L+R + (L-R) = 2L$ mono+ blank= mono Tape will play on the stereo mode deck with a decrease in S/N Ratio of about 3 dB. No Problems
Cart recorded in Matrix stereo and Label is removed	MONO PLAYBACK NO PROBLEM	MONO Playback in stereo deck No Problem (except loss of stereo)

RECOMMENDATIONS

Location

A.

1 Stereo record/play back Unit	Production
1 Stereo Playback	FM

Note: Minimum Purchase

B.

1 Stereo Record/Play back	Production	
2 Stereo Playback	FM	Side by side mounting

C.

1 Stereo Record/Play back	Production
3 Stereo Playback	1 Production
	2 FM

All new cart decks would be rack mounted to directly replace the present decks. As many operational decks would be left available in each room as board space and physical space permits.

At the present time, these are the possible combinations. I see little use for more than 2 Stereo cart decks in any stereo control room unless there is a radical format change in the near future. Even if this were to occur, the problem could be solved simply by the purchase of additional decks.

Engineering recommendation: Plan B

1 Playback/Record Deck

2 Playback only Decks