

for member libraries and will demonstrate their system in mid-1981. OCLC data has been successfully transferred to many local circulation systems.

RLG/RLIN

RLIN does not anticipate offering local circulation services for member libraries. RLIN data has been successfully transferred to several local circulation systems.

WLN

WLN does not anticipate offering local circulation systems on their computer for member libraries. WLN data has been successfully transferred to local circulation systems and an agreement has been reached with DATAPHASE, a computerized circulation system vendor, to discount purchase of their system by WLN member libraries.

Public Online Catalogs

Again, none of the bibliographic utilities under consideration currently support public online catalogs of an individual library's collection. A public online catalog requires further programming in order to make it easy for the public to locate materials of interest without extensive training; the bibliographic utility's searching procedures are too esoteric to be used by the general public. As in circulation, issues of data transferability and full retrospective conversion of the UO Library's catalog are paramount.

OCLC

OCLC does not currently encourage public access to their database and does not support use of local online catalogs on their computer due to the tremendous demand for computer resources exerted by 2400 member libraries. OCLC and RLG/RLIN are participating in a study of user requirements for a public online catalog. OCLC data has been successfully transferred to several local online catalogs, including Eugene Public Library's circulation and online catalog system, ULISYS.

RLG/RLIN

RLIN anticipates being able to offer public access to their database. They are participating in a study with OCLC of user requirements for such a system, but no date

has been announced for the development of this capability in RLIN. RLIN data has been successfully transferred to a local public online catalog at Northwestern University.

WLN

WLN does not believe that a local online patron accessed catalog should be provided through the WLN computer, even though they anticipate having such a capability within one year. Instead, they encourage libraries to develop local systems for public access to the online computerized catalog and to obtain data from the WLN cataloging system. The University of Illinois is adapting the WLN computer search and database management software to provide a local online catalog and computer-assisted instruction in its use for the public.

Checklist for Cassette Recorders Connected to CRTs

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INTRODUCTION

A data cassette recorder connected to a printer port is an effective, low-cost method of collecting data in machine-readable form from display terminals such as the OCLC 100/105.

It is important that a *data* recorder be used rather than an audio recorder although the cassette itself can be a good-quality audio tape. It is also important to note that the data recorded on the tape are *not* the same as the data originally transmitted to the display terminal, but are simply a line-by-line image of what appears on the screen. A typical installation will have a minimum of two devices: one attached to the display terminal to collect data, and one attached to a printer or an input device to another computer for playback of the data.

There are more than 150 various data re-

coding devices on the market. This checklist is prescriptive in nature, outlining and describing those features that are necessary or desirable for a typical application. In addition to features, environmental considerations are briefly mentioned along with information for the purchase, lease, or rental of data equipment.

FEATURES

In general, features must be compatible between all devices used for recording and playback in a given application. Some features that are desirable for certain applications are unnecessary or inappropriate for others.

1. *Recording Media*

The *Phillips cassette* is most widely used and may be interchanged between the recorders of different manufacturers that utilize it. The *cartridge* (either 3M or a vendor proprietary cartridge) is gaining popularity because of its greater storage and transfer rates, but as yet is not widely used.

2. *Code*

Most print ports on display terminals use ASCII (American Standard Code for Information Exchange) data code. The recorder selected should use the same.

3. *Interfaces*

The cassette recorder has an "in" plug to accept data. This must be compatible with the print port on the terminal—usually RS232C. The "out" plug on the recorder sends the recorded data to a printer or to a computer. This interface should also be RS232C.

4. *Recording Characteristics*

- a. The *number of tracks* can vary from one to four. This is one of the factors that determine the amount of data that can be recorded on a single cassette. Four tracks are recommended.
- b. *Density* also affects the amount of data that can be recorded. Usual densities are 800 or 1,600 bits per inch (bpi).
- c. *Recording mode*. There are several

modes available. *Phase Encoded* (PE) is the best mode for data applications. *Non-Return to Zero* (NRZ) is a popular mode, but has poor error recovery. IBM has a version called NRZI, which improves on NRZ but still is less reliable than Phase Encoded. Other commonly found modes are *Complementary NRZ* and *Ratio Recording*.

- d. *Recording format*. There is a variety of recording formats. To be assured compatibility with the terminal and playback device the format should be either ANSI (American National Standards Institute) or ECMA (European Computer Manufacturers Association) compatible.

5. *Transmission*

- a. *Duplex*. The recorder should have both full and half duplex available.
- b. *Data transfer rate (baud rate)*. Baud rate is usually switch-selectable from 110 to 9600. The recorder must be set at the same speed as the printer port on the terminal. The OCLC 100 and 105 terminals have a printer port baud rate selection switch that may be set at 100, 150, 300, 600, 1200, and a meaningless 1800 baud. Select a recorder that has the fastest compatible setting; 1200 baud is best. Data must be played back at a rate compatible with the receiving device.

6. *Tape Transport Characteristics*

- a. *Read/write speed* is usually a function of the baud rate.
- b. *Nonrecording speeds*. This feature is important for convenience. Fast forward and rewind should be available. One hundred twenty inches per second will rewind a cassette in about thirty seconds.
- c. *Drive mechanism*. Four options are available: capstan, pinch roller, servomechanism, or reel-to-reel. Pinch roller is the most precise but reduces the life of the tape.

7. *Packaging*

This feature can affect the price of the final configuration. If any item is listed as "separate," increase the total price accordingly. Components that can be either internal or separate are: controller, interface, or power supply.

8. *Remote Operation*

Some devices use ASCII control codes to trigger controls automatically. This is a useful feature, but the device *must* have a transparent mode switch, otherwise codes embedded in the data being recorded or sent may trigger undesired operations such as rewind.

9. *Operating Characteristics*

a. *Rewind, fast forward, initialize, send and receive* are all necessary operations and should be switch-controlled.

b. *Edit, auto program search, string search, skip, etc.*, are useful for word-processing operations but are of little use in simple data collection and transmission.

c. *Read backward* is desirable for sort operations.

d. *Character mode, line mode, and string mode* are useful for printing operations but of little use in data transmission.

e. *Online/offline* should be switch-selectable.

f. *Simultaneous read/write* is useful for editing operations.

g. *Direct block accessing* is useful if there is a need to search for recorded data but is not used in sequential processing.

h. *Auto reverse* is a useful feature for recording or transmitting more data than can be recorded on one side of a cassette.

ENVIRONMENTAL REQUIREMENTS

1. *Humidity Range*

Humidity range should be 20 percent to 80 percent without condensation. Lower humidity will cause excessive static electricity.

2. *Temperature*

Temperature range should be between ten degrees and forty degrees centigrade.

3. *Power Requirements*

Most recorders require a standard 115-volt alternating current at 47 to 63 Hz. and draw about 60 watts. The circuit should be free from interference such as that caused by florescent lights. A transformer may be required in the outlet to guarantee even power.

4. *Space Requirements*

The recorder usually can be stored on a desk top. It is important that the indicator lights be visible to the terminal operator to monitor its operation.

PURCHASE

1. *Maintenance and Availability*

Ask how many drives the manufacturer has installed to date. This may vary from a few hundred to one hundred thousand or more. Establish a maintenance contract with the company or a local service bureau. It may be necessary to acquire a spare recorder to use as backup.

2. *Price*

Determine ahead of time what features you are actually going to use. Bells and whistles all cost money. A simple reliable recorder can be purchased for around \$700. Multiple drive units and other features can run as high as \$3,600.