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FILE MEMO

SUBJECT: Exchange Channel Addressing

The suggestion has been made that Exchange Channel Address designation be specified from both ends of the address scale. The purpose of such a practice would be to provide some sort of consistent addressing while permitting addition of Exchange Channels.

An illustration of the use of such addressing is given by the following example for an 8 Channel Exchange.

<u>Unit (Adapter)</u>	<u>Channel Address</u>
729-IV	32
729-IV	33
729-IV	34
729-II	35
Printer	60
Card Reader	61
Card Punch	62
Console	63

Then, if more tapes were added (another 8 channels) the addresses could be assigned as 36, etc.

The implementation of such a scheme seems simple and its usefulness apparent, at first glance. However, it is worthwhile to look at the usage more closely. This scheme assumes two specific points.

- (a) Particular standard I/O devices attached.
- (b) Specific addresses appearing in the program.

It is already realized that to permit any I/O analysis the particular operation (instruction) being executed by a given channel must be "remembered". This assumes at least semi-interpretive I/O handling.

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The use of semi-interpretive I/O handling emphasizes the desirability of symbolic I/O references which can be given channel assignments dynamically, i. e. , at the time of instruction execution. Advantages of this type of operation are:

- (a) Units can be moved to different channels, if necessary, with no alteration of the program.
- (b) No standardization of I/O arrangements is required and devices may be located optimally with respect to the requirements of a given installation.

Therefore, it is recommended that this hardware not be added to the system.

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