FILE MEMO

SUBJECT: Slow-Down Signal

BY: W. Buchholz

Reference: My memo of October 13 on "Proposal for an Interlock Signal".

The above memo proposed a mode of operation in the Exchange which allowed the Exchange to request a unit to stop but still permitted more information to be transmitted while the unit comes to a gradual stop. A special "interlock" line to each unit was proposed. Mr. R. P. Fletcher points out that the addition of new lines, one for each unit, would be a major undertaking, but the present Disconnect line can provide the desired action with a relatively small change in the existing Exchange hardware.

Specifically, when the Multiple Flag (MF) and the Chain Flag (CF) are both 1 and when the word count goes to zero, the Exchange would be required to fetch a new Control Word and also send a Disconnect signal to the unit. On receipt of the Disconnect signal, the unit would prepare to stop. If it cannot stop immediately, it would continue to transfer information until it reaches the proper end whereupon it would give an end of block (End of Message) signal in the usual way. The Exchange would handle the information with the new Control Word as if nothing had happened.

If the new Control Word has MF = 0, the end of block signal from the unit causes the operation to terminate. If the new Control Word has MF = 1, then a Restart signal is sent to the unit to continue operation. Thus the present mode of handling multiple blocks can be retained. The only difference is that it is no longer possible to read the first part of each of several blocks with only one Control Word per block; a second Control Word with the Skip Flag on is then needed for each block. Otherwise, the conventional units may be operated as before.

A second case arises when CF = 0 and MF has either value. When the count goes to zero, the Exchange must send a Disconnect signal, but it cannot fetch a new Control Word. If the unit cannot stop immediately, it will continue to send service requests and attempt to transfer information which the Exchange will have to ignore.

The new conditions are summarized in the attached table.

It is proposed to include this feature in the current manual revision.

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                                                Manager
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WB/pkb

Attach.

cc: Mr. R. P. Fletcher
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Revised Table for Section 6.6 of Manual

MF	CF	Count 0=Zero 1=Not Zero	End of Block 0=Yes 1=No	Action
0	0	0	0	End
0	0	0	1	Disconnect(→ 0000)
0	0	1	0	End
0	0	1	1	Continue
0	1	0	0	End
0	1	0	1	Chain
0	1	1	0	End
0	1	1	1	Continue
1	0	0	0	End
1	0	0	1	Disconnect (→ 1000)
1	0	1	0	Restart
1	0	1	1	Continue
1	1	0	0	Restart and Chain
1	1	0	1	Disconnect and Chain
1	1	1	0	Restart
1	1	1	1	Continue

Rules for Exchange

Rule	MF	CF	Count	Block	Operation
1.	0	X	X	0	End
2.	X	0	0	0	End
3.	X	1	0	X	Chain (following any other operation)
4.	(0 — 1)		0	1	Disconnect and continue
5.	1	(0 — 0)		0	Restart