

Report on 1401 Sessions at SHARE Meeting
Washington, D. C.

August 21, 22, 1961

IBM Attendees:	DFD Marketing	- W. C. Bethke
	GP Applied Programming	- J. H. Palmer
	DS Applied Programming	- E. F. Wheeler
		- H. Nagler
		- S. C. Nicholson
	1401 Engineering	- J. Petter
		- J. J. Ingram
		- F. O. Underwood

Summary:

The SHARE meeting is an excellent place to meet large numbers of customers with 1401's in large IBM installations. The information transfer in both directions at these meetings is very important and can be quite helpful to IBM from both a long and short term point of view. Most SHARE members attending the 1401 sessions are very familiar with the 1401 and 1401 programming. It is very important that problems they have, and those they think they have, be understood and proper corrective action be taken. It is also very important that they understand all changes which affect programming or timing at as early a point in time as possible.

While we were able to furnish in a general manner the Engineering information desired by the SHARE members, I feel that a more detailed knowledge of the Engineering Changes and field problems than we possessed was needed. To fill this need, I feel that Product Engineering should send, to each future SHARE meeting, a man whose job requires an intimate knowledge of EC's and field problems. Field Bill numbers and dates should be available where possible. This man's attendance would be in addition to that of a Development Engineering representative.

This report does not attempt to cover Applied Programming participation. However, it should be noted that there was considerable interest in the "I" language being developed by DS Applied Programming.

Engineering Changes:

The Engineering Changes listed below were described at a peripheral equipment committee open session attended by approximately 150 persons.

1. Accomplish single item eject.
2. Provide 55 milliseconds compute time with Punch Feed Read Release.
3. Improve stop/key operation with Read-Punch Release.
4. Continue processing on overextension of Read-Punch Release with I/O Stop Switch off.
5. Permit processing to continue on Reader Validity Error with I/O Stop Switch off.
6. Prevent stopping of Punch motor when a tape error is encountered.
7. Address Validity Checking

None of these changes appeared controversial with the exception of Address Validity Checking. The range of feeling of the SHARE members on Address Validity Checking varied from, in favor of, to violently against. Some members seemed to feel that the "suggested" SHARE machine configuration should include the RPQ to disable Address Validity Checking. However, it appeared that the group as a whole would not take this action despite the fact that several of the members were going to have this RPQ installed on their machines. Later, in his presentation on the "I" language, Mr. Nagler stated that the "I" language would be made available in two versions, for machines with and without Address Validity Checking. He stated that the Address Validity Checking version was 10% slower and would prohibit 600 lpm printer operation where the number of characters printed per line is large. Following his presentation, it appeared possible that the question of including the Address Validity Check crippling RPQ in the suggested SHARE machine configuration might be reopened.

No Field Bill of Material numbers or dates were given for these changes although the general statement was made that some of these changes are available in the field now and others will be available within the next very few weeks. It was also stated that the Address Validity Check Field Bills would be somewhat later, possibly around the first of October. At other times, in closed sessions of the same committee, attended by approximately 25 persons, numbers of Field Bills of Material were given for some bills already published in CEM's.

Problems:

Several of the items discussed which relate to customer satisfaction are listed below:

1. Undetected Read and Punch errors

While there was some feeling that the frequency of occurrence of both Read and Punch errors was too high, it developed that many customers are confident that undetected Read and Punch errors are a rather common occurrence. It was felt that the undetected errors occur primarily with column binary cards where the validity check is not used. The errors do not show up in the 1401 but are detected some time later in the 704/9/90. As an example, Phillips Petroleum feels that they have at least one undetected error whenever they Read or Punch 10,000 cards. They specifically requested that consideration be given to a change in the checking approach from the columnar method now being used. They also stated that in one read pass of 2,000 cards, no detected errors occurred but actually there were 33 cards in which two, four, six or eight holes in one or more columns had not been read. This very important point is being investigated by Product Engineering.

2. 1402 Stacking

Many felt that stacking was not as reliable as it should be.

3. 1402 File Feed

There were complaints that cards would get turned over in 1402 operation. In some cases it was felt that the problem was in stacking and that it was a combination operator-hardware problem which should not occur in a properly engineered device. However, more than one customer stated that they were confident that a card occasionally turned over in dropping from the file feed into the read hopper.

4. Tape Diagnostics

Dissatisfaction was expressed because IBM had introduced new diagnostics which made use of operation card modifiers that were not made available to customer's programmers. In checking this point, it appears that they had reference to the Inter-record Gap (IRG) test where records are read off tape but not entered into 1401 memory.

5. 1403 Chains

Some customers print zeros much more frequently than any other characters and in these cases the zeros wear and flatten out while the rest of the chain is still quite good. Several customers mentioned chain

breakage has occurred rather frequently; at Phillips Petroleum three chains on two machines broke in less than six months after initial 1401 installation.

6. Short Addresses

There was some dissatisfaction expressed on this point; CEIR, in particular, expressed dissatisfaction with not being able to install the parallel Star reset, which prevents use of short addresses, on Stage I. They pointed out that our actions here were not compatible with those on Address Validity Checking. Mr. K. A. Belt has investigated and it appears that parallel Star reset on Stage I will not be as difficult to accomplish as originally expected. By copy, Market Planning's comments on the necessity of providing this, and quantities involved, are requested.

7. Operation of No-Op Instruction

Several customers expressed concern over the restrictions which apply to this operation. Consideration is being given to a change here and the final resolution should be achieved soon.

8. Distribution of Engineering Change Information to Customer

Several customers expressed dissatisfaction with IBM's distribution and installation of Engineering Changes. They felt that many times important changes, particularly those that affect timing and programming, are not installed when they should be and the customer is not informed of the availability of the change.

9. 1011 Operation

When End characters are not punched in Paper Tape, a character will be lost for each paper tape read instruction. While this can be programmed around in many cases, it was felt that it would still be a significant restriction in others. It might be pointed out that this problem can be overcome with the program translate paper tape reader.

SHARE Requests:

Two items were requested by SHARE members.

1. Column Binary-Lock Ahead feature. There is a RPQ which permits determining if the card contains column binary information prior to the card information being read into memory. This RPQ is included in

the suggested SHARE machine configuration. It was felt that the RPQ should be made part of the Column Binary feature at a corresponding rental increase.

2. Punch metallic paper tape. Boeing indicated that the lack of the ability of the paper tape punch (RPQ) to punch metallic tape may lead to them ordering several RCA 301's instead of 1401's.

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Senior Engineer
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JJI/ka

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R. F. Ellsworth - 299
J. H. Frame - 302
T. S. Gambill - 299
C. E. Lorensen - 634
J. A. McDonnell - 631
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W. R. Murray - 631
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J. H. Palmer - New York
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