Mr. W. Buchholz

February 14, 1957

Subject: Inadequacies of "Proposal #1 - Phone
Line Operation of a Single Inquiry Station."

Reference: My letter of 2/13/57 entitled "Desirable
Characteristics of Remote Inquiry Station."

      Items 4, 7 and 9 in the referenced letter deal with the problems of sending data over the phone line with a reasonable assurance that such transmissions will be 100% accurate. Transmission errors do occur and we must be concerned for sometime with troublesome operation of simple inquiries. In Proposal #1, although the Transmission Check Request key was provided, and both End of Message or Carriage return would automatically check to see if an error had occured, the burden of retransmitting the whole message rests upon the operator.

      Proposal #0, which never got written, called for a character by character check of transmission, with go-no go responses from both ends of the line, before the next character would be transmitted. The intent here was to automatically re-transmit say to a maximum of 4 times each character as an error occurred. Unfortunately, due to a "turn around" time of 300 milliseconds, such a technique would cause typing to occur at one-third its normal speed and thus prove an operator hindrance.

      If a cheap technique of complete message storage could be provided at the Inquiry Station, the following benefits could be obtained.

      1. Operator could compare complete message before depressing Action button.

      2. Operator errors could be individually corrected as they occur, or whenever operator so desires.

      3. The Action button would automatically request selection without further operator intervention.

      4. Computer Breakin would occur only once since the entire message would be transmitted at phone line speed (93 char a second) rather than at the rather random speed of a human being.

      5. Retransmission of the message until correct transmission occurs is accomplished without further operator intervention.

6. Multiplexing at the remote end of the line, with up to 9 Inquiry Stations per line is enhanced, leading to more efficient and therefore cheaper, use of the phone line.

Proposal #2 will hopefully describe the "cheap" technique of complete message store proposed to enable the benefits above to be reaped.

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