CUSTOMER ENGINEERING TESTS
FOR THE 1401 DATA PROCESSING SYSTEM

Block No. 0360A

BRANCH OVERFLOW

Purpose of Test

To test the Branch Overflow circuitry by adding one field to another and testing for an overflow condition. Errors are detected by checking the overflow condition with a blank character and no overflow with the letter "H". For errors the machine either stops to permit console checking or prints the results depending upon the setting of Sense Switch E.

An overflow condition can occur as a result of a true arithmetic operation if the accumulator (B Field) is not large enough to accommodate the answer. An overflow condition sets an indicator, which can be tested by a BRANCH instruction. Testing resets the overflow indication. When alphabetic characters are added in the high-order position, the overflow will change the "AB" bit configurations as described in the Zone Add Test (Block No. 0350A).

Units Required

1401 Processing Unit
1402 Card Reader or 729 Tape Drive
1403 Printer (optional)

Operations Used	Code
Clear	(/)
Set Word Marks	(,)
Load	(L)
Add	(A)
Branch Overflow	(B---Z)
Print	(2)
Stop (error)	(.)

Method of Test

The complete test block consists of the following cards:

1. Title Card (0A)
2. Two Program Chaining Routine Cards (02-03)
3. Three Title and Headings Print Routine Cards (04-06)
4. Four special program cards to set up instructions that are effective only when tests are run from tape (07-10)
5. Program Instruction Cards (11-47)
6. Detail Cards (48-66)

Four Sense Switches may be brought into play as follows:

Sense Switch B ON - permits scoping of the Branch Overflow operations as often as desired.
Sense Switch C OFF - no printing for correct results.
ON - prints for correct results.
Sense Switch D ON - repeats the program for an individual card as often as desired.
Sense Switch E OFF - prints for error results.
ON - stops for error results.