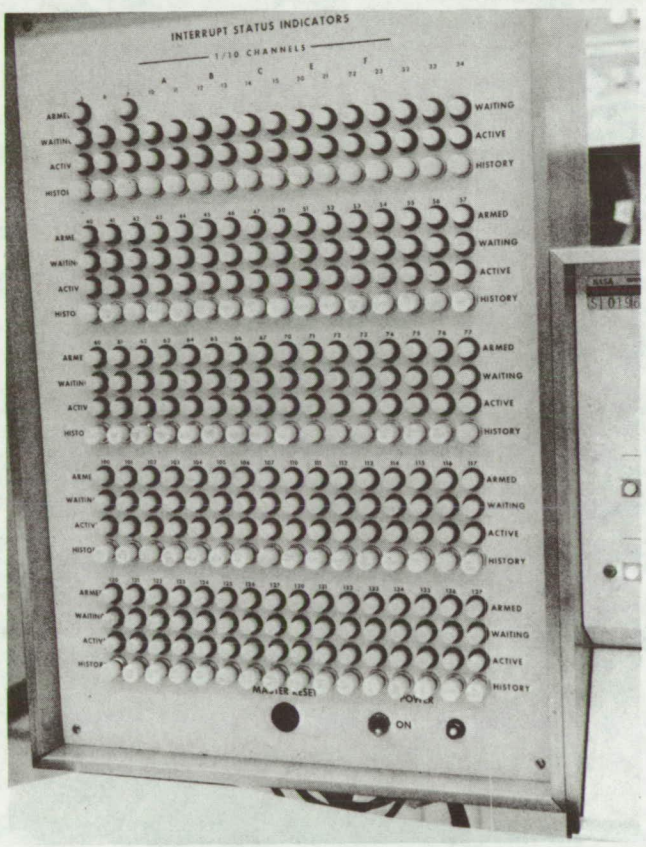
# NASA TECH BRIEF



## Visual Device to Assist Computer Program Debugging




This digital computer programming aid provides a means of visual information which enables an operator to debug computer programs during program checkout. Previously, an operator often had to dump core, and trace the program until the error was found, consuming a good deal of time and increasing the probability of human error. By means of interrupt status indicators, the operator can debug his program during checkout, observe the status of his program at any time, and during real-time simulation, provide a quick-look analysis for updating and related purposes.

The device consists of computer-coupled indicator lamps and lamp driver circuitry which register program malfunctions in priority interrupt controlled programs. The interrupt indicator may be a useful addition to the system status console of medium-to-large computers, and should be of interest to programmers, and designers and manufacturers of digital computers and related hardware.

The interrupt status indicators must be used by operating personnel and therefore should be near the computer control console. The panel is designed according to the number of interrupts contained by the system. The driving amplifiers consist of a transistor and several resistors and capacitors. The only constraint associated with the device is that the cable length between the interrupt chassis and driving amplifier must be less than six feet. As shown in the figure, indicators display the four states of interrupt: armed, waiting, active and history.

### Note:

Requests for further information may be directed to:

Technology Utilization Officer
Manned Spacecraft Center, Code BM7
Houston, Texas 77058
Reference: B70-10308

### Patent status:

No patent action is contemplated by NASA.

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