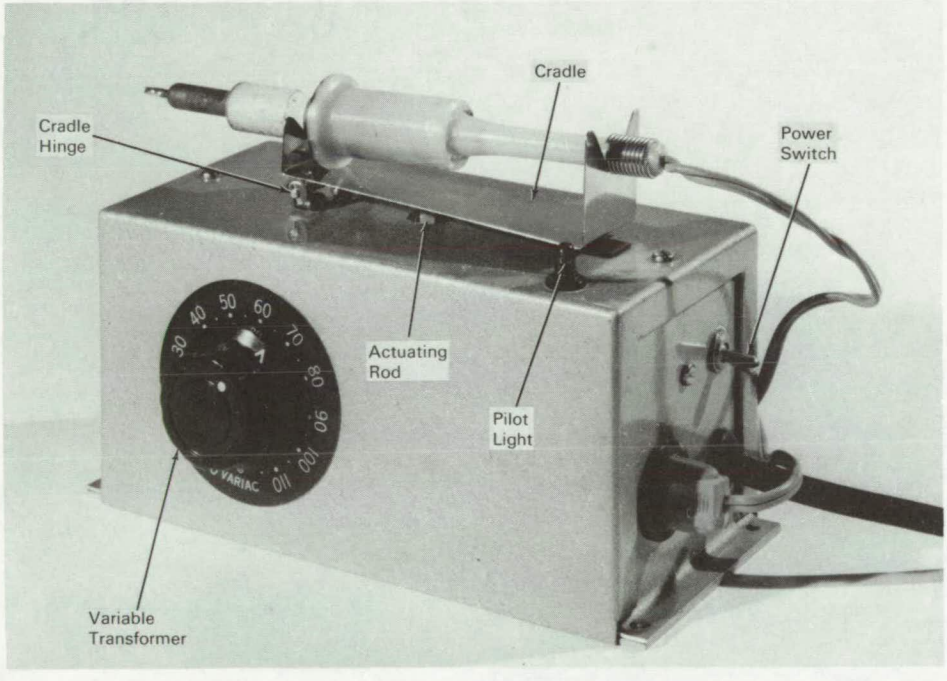
NASA TECH BRIEF

Soldering Iron Temperature Is Automatically Reduced



The problem:

To design an automatic, inexpensive, and reliable means of maintaining a soldering iron at less than peak temperature when not in use. The iron must be returned to operating temperature without undue delay.

The solution:

A hinged cradle–microswitch arrangement that introduces a voltage reducing element into the soldering iron power circuit when the iron is placed on the cradle.

How it's done:

The soldering iron cradle is hinged at one end, free at the other, and its center is poised on the actuating rod of a single-pole, double-throw microswitch. The cradle weight distribution is such that the microswitch spring tension supports the empty cradle with the switch connecting the soldering iron to the power source directly. When the soldering iron is placed on the cradle, the added weight overcomes the microswitch spring tension and moves the switch contact to connect the soldering iron to the power source

(continued overleaf)

through a variable transformer that can be set to reduce power to the iron by any desired amount. When the soldering iron is lifted from the cradle, spring tension moves the microswitch contact to again connect the iron to the power source directly.

Notes:

1. A less expensive variation would use a series of fixed resistors and a selector switch in place of the variable transformer.
2. Recovery time from standby temperature to operating temperature is on the order of 15 to 30 seconds.
3. Inquiries concerning this invention may be directed to:

   Technology Utilization Officer
   Ames Research Center
   Moffett Field, California, 94035
   Reference: B66-10203

Patent status:

Inquiries about obtaining rights for the commercial use of this invention may be made to NASA, Code GP, Washington, D.C., 20546.

Source: John Y. Lum
(ARC-57)