NASA TECH BRIEF

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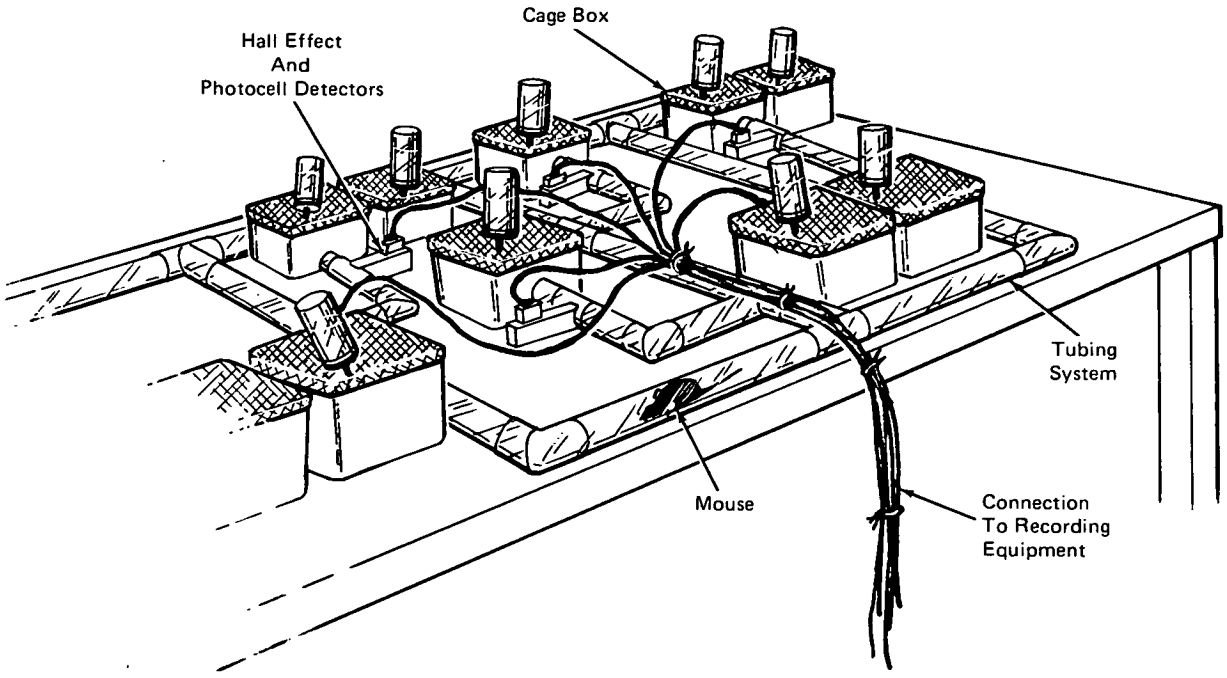
A Magnetic Mouse Activity Meter



The problem:

Presently there are numerous methods for detecting the total activity of mice in a single cage. No method for accurately identifying and measuring the activity of specific mice in a group as they pass between several cages has been perfected.

The solution:

A mouse activity meter has been developed using Hall effect devices that record the passage of selected groups of mice. This system has an advantage over the tagging, detecting, and identification methods presently used.

How it's done:

Two small permanent magnets are implanted in the belly and back of the selected mice. When these magnetically tagged mice pass electronic check points as they move between cages, the influence of the magnets on the Hall effect detector activates electronic circuits. The circuit outputs are then sent to analog recording equipment for visual observation. These circuits are not energized by the passage of non-tagged mice. However, the total activity of all mice is measured by the use of standard photocell circuits.

As shown in the figure, the mice pass between cages through a tubing system. The activity detector unit clips on to the tubing which is placed at the entry to a cage box. The unit consists of a photocell (to detect the passage of all mice) and two Hall effect detectors to monitor tagged animals. Long runways arranged in rectangular patterns allow free movement between box cages. Different cages are used by the mice for different activities such as nesting or as latrine facilities. A par-

(continued overleaf)

ticular mouse spends his time occupying various boxes. The number of changes in locations and the time of occupancy appear to be related to the role played by the individual within a group.

Note:

Requests for further information may be directed to:

Technology Utilization Officer
NASA Headquarters
Code: KT
Washington, D. C. 20546
Reference: TSP72-10482

Patent status:

No patent action is contemplated by NASA.

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