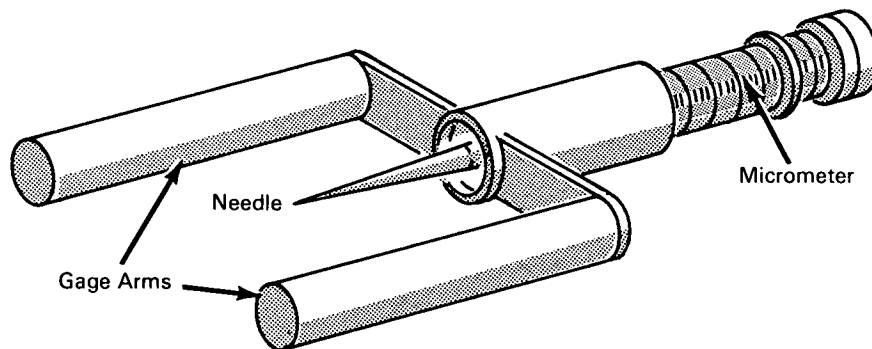


NASA TECH BRIEF



NASA Tech Briefs are issued to summarize specific innovations derived from the U.S. space program, to encourage their commercial application. Copies are available to the public at 15 cents each from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Virginia 22151.

Modified Algesimeter Provides Accurate Depth Measurements



The problem:

There is evidence that tolerance to a high g environment is related to pain tolerance, and it is presumed that this relationship may apply to the zero g environment. Retention of pain sensitivity and sensitivity of other cutaneous senses have been shown to influence the total sensory input of man in space. Consequently, adaptation or deprivation of sensory inputs could alter central nervous system (CNS) functioning and have far reaching implications in all areas of behavior. Previously, the amount of pressure/depth of penetration was arbitrarily selected by the experimenter solely in terms of the previous threshold in which the subject was able to detect pain.

The solution:

An algesimeter which incorporates a standard sensory needle with a sensitive micrometer.

How it's done:

After the needle point is applied to the skin and the pain is detected, the unit is removed and the depth of penetration is noted. The gage arms assure

that the surface area to be tested (arm, leg, etc.) is always a fixed distance from the zero setting of the micrometer. Thus, the only difference in the recorded depth is that of the subject's sensory perception.

Notes:

1. This algesimeter provides an inexpensive, precise instrument with assured validity of recordings in those biomedical areas with a requirement for repeated pain detection or ascertaining pain sensitivity.
2. This development is in conceptual stage only, and as of date of publication of this Tech Brief, neither a model nor prototype has been constructed.

Patent status:

No patent action is contemplated by NASA.

Source: D. P. Turner
of North American Aviation, Inc.
under contract to
Manned Spacecraft Center
(MSC-616)
Category 04