



Preserving Perishables

A new commercial product that can preserve perishable commodities for weeks without freezing, so that they can be shipped fresh without the cost of air freight, has been developed by Grumman Corporation, Bethpage, Long Island, New York. The development benefited from the company's experience in developing the environmental control system for the Lunar Module, which delivered Apollo astronauts to the surface of the moon.

Called Dormavac, the system provides a commodity-preserving environment within an aluminum container (shown above and at left) that can be transported by truck, rail or ship. Dormavac creates a cold—but above freezing—environment with high relative humidity and very low air pressure. The saturated air minimizes commodity weight loss and the air is automatically changed several times

an hour to flush away odors and harmful gases released by the commodities. According to company literature, Dormovac significantly extends the transportation life of perishables. For example, pork has a normal cold storage life of about seven days, beef two weeks and tomatoes three weeks; with Dormovac, pork remains fresh for three weeks, beef more than six weeks and tomatoes seven weeks or more.

Dormovac is manufactured and marketed by Grumman Allied Industries, Woodbury, New York. In developing the system, Grumman Allied drew upon the technological resources of another company subsidiary, Grumman Aerospace. Engineers who had earlier worked on Lunar Module environmental control brought their know-how and experience to the Dormovac development.

Auto Emissions Testing

The photos at right show automobile engines being tested for nitrous oxide emissions, as required by the Environmental Protection Agency (EPA), at the Research and Engineering Division of Ford Motor Company, Dearborn, Michigan. NASA technical information helped the company develop a means of calculating emissions test results.

Nitrous oxide emission readings vary with relative humidity in the test facility. EPA uses a standard humidity measurement, but the agency allows manufacturers to test under different humidity conditions, then apply a correction factor to adjust the results to the EPA standard. NASA's Dryden Flight Research Center developed analytic equations which provide a simple, computer-programmable method of correcting for humidity variations. A Ford engineer read a NASA Tech Brief describing the Dryden development and requested more detailed information in the form of a technical support package, which NASA routinely supplies to industry on request. Ford's Emissions Test Laboratory now uses the Dryden equations for humidity-adjusted emissions data reported to EPA.

