U.S. Department of Transportation
Research and Special Programs Administration

400 Seventh Street, S.W.
Washington, D.C. 20590

DOT-E 7546 (EXTENSION)
FOURTH REVISION March 31, 1989

In accordance with 49 CFR 107.105 of the Department of Transportation (DOT) Hazardous Materials Regulations DOT-E 7546 is hereby extended for the party(ies) listed below by changing the expiration date in paragraph 10 to December 31, 1997. This change is effective from the issue date of this extension. All other terms of the exemption remain unchanged.

This extension applies only to party(ies) listed below based on the application(s) received in accordance with 49 CFR 107.105. This extension constitutes a necessary part of this exemption and must be attached to it.

JAN 12 - 1996
(DATE)

for J. Suzanne Hedgepeth
Alan I. Roberts
Associate Administrator
for Hazardous Materials Safety

Dist: FHWA FRA FAA

EXEMPTION HOLDER	APPLICATION DATE
National Aeronautics & Space Administration (NASA) Washington, DC	November 1, 1995

No Renewal
Not Active

U.S. Department of Transportation
Research and Special Programs Administration

400 Seventh Street, S.W.
Washington, D.C. 20590

MAR 31 1989

DOT-E 7546
(FOURTH REVISION)

1. Grumman Aerospace Corporation (Grumman), Bethpage, New York, is hereby granted an exemption from certain provisions of this Department's Hazardous Materials Regulations to offer packages prescribed herein of the hazardous materials described in paragraph 3 below for transportation in commerce subject to the limitations and special requirements specified herein. This exemption authorizes the use of non-DOT specification containers described in paragraph 7, and provides no relief from any regulation other than as specifically stated.

2. BASIS. This exemption is based on the application from Grumman Aerospace Corporation dated September 20, 1988, submitted in accordance with 49 CFR 107.105 and 107.103 and the public proceeding thereon.

3. HAZARDOUS MATERIALS (Descriptor and class).

a. Anhydrous ammonia; argon; Freons 13, 14, 21, 113, 114 and MF; helium; neon; nitrogen; and oxygen classed as nonflammable gases;

b. Butane, ethane, hydrogen, methane and propane classed as flammable gases;

c. A mixture of a flammable liquid with an inert gas not exceeding a ratio of 10 parts liquid to 1 part inert gas classed as flammable gases.

4. PROPER SHIPPING NAME (49 CFR 172.10). The specific commodity name, or generic description as appropriate.

5. REGULATION AFFECTED. 49 CFR 173.34(d), 173.119, 173.302(a), 173.304(a), 173.305(a), 175.3.

6. MODES OF TRANSPORTATION AUTHORIZED. Motor vehicle, rail freight and cargo-aircraft only.

7. SAFETY CONTROL MEASURES. Packaging prescribed is a radiator-evaporator assembly consisting of axial groove or monogroove heat pipes which constitute the pressure vessel segment. The heat pipes are extruded tubes made of 6061 aluminum alloy and T-6 temper with ends pinched-off, welded then hermetically sealed. The heat pipes are without valves or pressure relief devices. Design pressure for the tubes is 380 psig at 140 F. Maximum volume for heat pipes is 1,500 cubic inches. The assemblies must be designed and fabricated in accordance with Grumman drawings on file with the Office of Hazardous Materials Transportation (OHMT) as follows:

Drawings - Heat pipe	AD1411-1308	AD2141B14	AD2141B154	AD2141B101
- Box	NASA21356C	NASA21356C	NASA21356C	P100289
Volume - Heat pipe	350 c.i.	1500 c.i.	126.7 c.i.	600 c.i.
Burst pressure, min.	2200 psi	2200 psi	3950 psi	2200 psi

8. SPECIAL PROVISIONS.

a. A copy of this exemption must be carried aboard each aircraft used to transport packages covered by this exemption.

b. Persons who receive packages covered by this exemption may reship them pursuant to the provisions of 49 CFR 173.22a.

c. The pressure vessel assembly is designated as a single-trip container and is subject to the requirements of 49 CFR 173.28(h).

d. The maximum filling density must be 51 percent for liquids and nonflammable liquefied gases or 21 percent for flammable liquefied gases, provided that the pressure in the heat pipe does not exceed 150 psig at 70°F., and that the container is not liquid full at 130°F.

e. The complete radiator assembly must be packed in a DOT Specification 19A or 19B wooden box, the packaging identified in National Aeronautics and Space Administration drawing 21356C, or Grumman drawing P100289 on file with the OHMT.

9. REPORTING REQUIREMENTS. Any incident involving loss of contents of the package must be reported to the OHMT as soon as practicable.

10. EXPIRATION DATE. March 31, 1991.

Issued at Washington, D.C.:

MAR 31 1989

Alan I. Roberts (DATE)
Director
Office of Hazardous Materials Transportation

Address all inquiries to: Director, Office of Hazardous Materials Transportation, Research and Special Programs Administration, U.S. Department of Transportation, Washington, D.C. 20590. Attention: Exemptions Branch.

Dist: FAA, FHWA, FRA.