

May 06, 2020



U.S. Department
of Transportation

East Building, PHH-30
1200 New Jersey Avenue S.E.
Washington, D.C. 20590

**Pipeline and Hazardous
Materials Safety Administration**

DOT-SP 20324
(FOURTH REVISION)

EXPIRATION DATE: 2022-09-30

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: General Dynamics Mission Systems, Inc.
Quincy, MA
2. PURPOSE AND LIMITATION:
 - a. This special permit authorizes the transportation in commerce of prototype lithium ion and lithium metal batteries contained in equipment exceeding the 35 kg maximum weight authorized for transportation aboard cargo aircraft. This special permit provides no relief from the Hazardous Materials Regulations (HMR) or the International Civil Aviation Organization's Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO TI) other than as specifically stated herein. The most recent revision supersedes all previous revisions.
 - b. The safety analyses performed in the development of this special permit only considered the hazards and risks associated with the transportation in commerce.
 - c. No party status will be granted to this special permit.
 - d. This special permit serves as an approval under Special Provision A88 of the ICAO TI and as a "Competent Authority Approval" as defined under 49 CFR § 107.1.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.

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4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 172.101 Hazardous Materials Table Column (9B) in that a lithium battery may not exceed 35 kg when transported aboard cargo aircraft; and § 173.185(a)(1) in that a lithium battery must be tested in accordance with the UN Manual of Tests and Criteria, except as provided herein.
5. BASIS: This special permit is based on the application of General Dynamics Mission Systems, Inc. dated January 14, 2020 submitted in accordance with § 107.105 and the public proceeding thereon.
6. HAZARDOUS MATERIALS (49 CFR 172.101):

Hazardous Materials Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Lithium ion batteries contained in equipment*	9	UN3481	N/A
Lithium metal batteries contained in equipment*	9	UN3091	N/A

*Prototype lithium batteries are limited to those identified as Disk/Battery Pack 1 and Disk/Battery Pack 2 as described in Bluefin Robotics Corporation's application dated August 24, 2016 and Disk/Battery Pack 2 as described in General Dynamics Mission Systems, Inc.'s application dated January 14, 2020.

7. SAFETY CONTROL MEASURES:

a. OPERATIONAL CONTROLS:

(1) Disk/Battery Pack 1 with a maximum energy content of 3 kWh and a nominal voltage of 30 V are composed of 264 lithium ion cells.

(2) Disk Battery Pack 2 with a maximum energy content of 2.8 kWh and a nominal voltage of 33 V are composed of 132 lithium metal cells.

(3) The batteries power a controller within a pressure vessel described in paragraphs 7.c.(1) and (2).

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(4) Each of the battery packs is equipped with a battery management system to prevent overcharge, external short circuiting, and over-discharge.

(5) The batteries must be equipped with an effective means to prevent dangerous reverse current flow when connected in parallel.

(6) Cells and batteries must be protected against short-circuiting.

(7) Lithium ion batteries contained in equipment must be offered for transportation at a state of charge not greater than 30%

b. TESTING REQUIREMENTS: Each battery contained in equipment must be comprised of cells that are a type that has passed the required tests in accordance with the UN Manual of Tests and Criteria, 5th Revised Edition.

c. Packaging:

(1) Batteries of Disk/Battery Pack 1 must be contained in vessels constructed of 0.5 inch-thick PVC pipe with 0.5 inch titanium end caps. Each vessel must contain no more than six Disk/Battery Packs per pressure vessel.

(2) Batteries of Disk/Battery Pack 2 must be contained in vessels constructed of 0.5 inch-thick PVC pipe with 0.5 inch titanium end caps. Each vessel must contain no more than eight Disk/Battery Packs per pressure vessel.

(3) Vessels must be crated and palletized, or put into an aluminum Zarges box prior to transportation

(4) The net weight of batteries within each package must not exceed 180 kg.

d. MARKING: Each package covered under the terms of this special permit must be durably and legibly marked and displayed on a background of contrasting color with "DOT-SP 20324".

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8. SPECIAL PROVISIONS:

a. Under the terms of this special permit, the grantee may only offer hazardous materials (i.e., the grantee is not authorized as a carrier).

b. A person who is not a holder of this special permit who receives a package covered by this special permit may reoffer it for transportation provided no modification or change is made to the package and it is reoffered for transportation in conformance with this special permit and the HMR.

c. A current copy of this special permit must be maintained and made available for examination at each facility where the materials are package and offered or reoffered for transportation.

d. This special permit in no way affects the need to obtain any required authorizations from other agencies of the United States Government or from the competent authorities of countries of origin, transit, and destination.

e. The grantee must maintain the following record and upon request make this record available to DOT representatives or enforcement officials. The record must contain a listing and number of shipments made to include:

(1) Dates of Shipment.

(2) Description of each type of shipment (to include origination/destination).

f. A battery, battery assembly or monitoring system that is determined to be defective, may not be shipped under this special permit.

9. MODES OF TRANSPORTATION AUTHORIZED: Cargo-only aircraft.

10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each aircraft used to transport packages covered by this special permit. The shipper must furnish a copy of this special permit to the air carrier before or at the time the shipment is tendered.

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11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this special permit and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:
- o All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
 - o Persons operating under the terms of this special permit must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
 - o Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this special permit must receive training on the requirements and conditions of this special permit in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this special permit, including display of its number, when this special permit has expired or is otherwise no longer in effect.

Under Title VII of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)—"The Hazardous Materials Safety and Security Reauthorization Act of 2005" (Pub. L. 109-59), 119 Stat. 1144 (August 10, 2005), amended the Federal hazardous materials transportation law by changing the term "exemption" to "special permit" and authorizes a special permit to be granted up to two years for new special permits and up to four years for renewals.

12. REPORTING REQUIREMENTS: Shipments or operations conducted under this special permit are subject to the Hazardous Materials Incident Reporting requirements specified in 49 CFR §§ 171.15 - Immediate notice of certain hazardous materials incidents, and 171.16 - Detailed hazardous materials incident reports. In addition, the grantee(s) of this special permit must notify the Associate Administrator

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for Hazardous Materials Safety, in writing, of any incident involving a package, shipment or operation conducted under terms of this special permit.

Issued in Washington, D.C.:

A handwritten signature in blue ink, appearing to read "William Schoonover".

for William Schoonover
Associate Administrator for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Material Safety Administration, U.S. Department of Transportation, East Building PHH-30, 1200 New Jersey Avenue, Southeast, Washington, D.C. 20590.

Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm. Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: HWANG