



*Council on Safe Transportation of Hazardous Articles*

## **International Maritime Dangerous Goods (IMDG)** **Special Provision 961 and 962**

### **SP961 and SP962**

Since 2010 when the International Maritime Organization decided to re-regulate vehicles, the applicability and requirements of IMDG Special Provisions SP961 and SP962 have been discussed within the vessel and shipping industries. The Special Provisions were introduced as a way to limit the amount of dangerous goods contained within vehicles when hazard communication is not provided. Further, the provisions identified exceptions to hazard communication when dangerous goods are present in certain quantities.

### **UN 3166 or UN 3171**

When shipping vehicles or equipment under the IMDG Code, it is important to recognize a number of special provisions apply and can help determine which proper shipping name and UN number is appropriate for example, UN 3166 includes the entries engine, internal combustion or vehicle, flammable gas powered or vehicle, flammable liquid powered or engine, fuel cell, flammable gas powered or engine, fuel cell, flammable liquid powered or vehicle, fuel cell, flammable gas powered or vehicle, fuel cell, flammable liquid powered. Special provision 312 details which entry should be used depending on whether the vehicle is powered by a fuel cell or plant internal combustion engine.

Similarly, UN 3171 includes the entries battery – powered vehicle or battery – powered equipment. Special provision 240 indicates this entry only applies to vehicles powered by wet batteries, sodium batteries, lithium metal batteries or lithium ion batteries and equipment powered by wet batteries or sodium batteries transported with these batteries installed. Equipment containing lithium batteries must be consigned under the entries UN 3091 or UN 3481.

### **SP961**

SP961 was written to except from the IMDG Code vehicles which are being transported on a transport vessel in an area specifically designed to contain vehicles. Specifically, this includes Roll on, Roll off vessels, although there are other vessels which have designated areas approved by the flag State for the storage of vehicles. These areas do not, however, include storage areas for container transport units. The paragraph addressing the transport of these vehicles is as follows:

*Vehicles and equipment are not subject to the provisions of this code if they are stowed on a roll-on/roll-off ship or in another cargo space designated by the Administration (flag State) as specifically designed and approved for the carriage of vehicles and equipment and there are no signs of leakage from the battery, engine, fuel cell, compressed gas cylinder or accumulator, or fuel tank when applicable.*

Special provision 961 provides additional exceptions for vehicles and equipment when transported in cargo transport units which do not contain dangerous goods, fuel tanks are empty, or have batteries installed which are protected from short-circuit. These provisions are not applicable for lithium batteries installed and equipment. The paragraph addressing the transport of these vehicles is as follows:

*In addition, vehicles and equipment are not subject to the provisions of this code if any of the following conditions are met:*

*.1 The fuel tank(s) of the vehicle or equipment powered by a flammable liquid fuel is empty and installed batteries are protected from short-circuit;*

*.2 The fuel tank(s) of the vehicle or equipment powered by flammable gas is emptied of liquefied or compressed gas, the positive pressure in the tank does not exceed two bar, the fuel shut-off or isolation valve is closed and secured, and installed batteries are protected from short-circuit; or*

*.3 The vehicle or equipment is solely powered by a wet or dry electric storage battery or a sodium battery, and the battery is protected from short-circuit.*

The second part of special provision 961 conditions .1 3.3 can be used to transport vehicles contained in cargo transport units. Vehicles and equipment which do not contain any liquid flammable fuel, liquid flammable gas or compressed gas, or battery-powered vehicles containing only a wet or dry electric storage battery or sodium battery are exempt from all conditions in the Code. If a vehicle or equipment contains flammable liquid fuel or the tank is pressurized by flammable or compressed gas, the conditions of special provision 961 have not been met, and the shipment must be offered in compliance with special provision 962.

Batteries installed in the vehicle or equipment do not require additional hazard communication provided the batteries are limited to wet or dry electric storage batteries or sodium batteries, and are protected from short-circuit. Lithium batteries are not described as wet or dry electric storage batteries but instead are

consigned as UN 3480 lithium ion batteries and UN 3090 for lithium metal batteries. Vehicles containing lithium batteries are subject to the conditions of Special Provision 962. Equipment containing lithium batteries and not powered by flammable liquid or flammable gas would instead be identified as UN 3481 lithium ion batteries contained in equipment, and be subject to packing provisions found in P903 and special provision 188. Vehicles powered solely by a lithium battery must be consigned as UN 3171 battery-powered vehicle as per special provision 360.

Paragraph .1 of this provision does not require the fuel tank to be completely free of fuel residue. However no free liquid is permitted in the fuel tank. Paragraph .2 requires that the positive pressure of the tank not exceed 2 bar, and that no flammable gas remain in the tank.

Special provision 961 does permit the transport of vehicles containing fuel cells as long as the conditions detailed in paragraph .1 .2 and .3 of special provision 961 are met.

Special provision 961 requires no marking, no labeling, no placarding, no documentation, and no special handling conditions other than those detailed in special provision 961. Therefore vehicles and equipment stowed on roll – on/roll – off ships designated by the flag state or do not contain flammable liquid flammable gas or are powered solely by a wet or dry electric storage battery or sodium battery are not subject to the provisions of the IMDG code.

## **SP 962**

If the conditions of special provision 961 are not met (the vehicle is not stowed aboard a roll – on/roll – off ship or in another cargo space designated by the flag state, and contains flammable liquid or flammable or compressed gas), then the conditions of special provision 962 apply. The text of special provision 962 reads:

*Vehicles or equipment powered by internal combustion engines, fuel cells or batteries not meeting the conditions of special provision 961 shall be assigned to Class 9 and shall meet the following requirements:*

*.1 Vehicles and equipment shall not show signs of leakage from batteries, engines, fuel cells, compressed gas cylinders or accumulators, or fuel tank(s) when applicable;*

*.2 For flammable liquid powered vehicles and equipment, the fuel tank(s) containing the flammable liquids shall not be more than one fourth full and in any case the flammable liquids shall not exceed 250L;*

*.3 For flammable gas powered vehicles and equipment, the fuel shut-off valve for the fuel tank(s) shall be securely closed;*

*.4 Installed batteries shall be protected from damage, short circuit, and accidental activation during transport. Lithium ion or lithium metal batteries shall meet the requirements of the United Nations Manual of Tests and Criteria, part III, subsection 38.3, unless otherwise approved by the competent authority; and*

*.5 dangerous goods required for the operation of the vehicle or equipment such as fire extinguishers, compressed gas accumulators, airbag inflators, etc., shall be securely mounted in the vehicle or equipment.*

*The marking, labeling and placating provisions of this code shall not apply.*

Paragraphs 1 through 5 detailed the conditions which must be met in order to ship vehicles under special provision 962. This includes that vehicles and equipment shall not show any signs of leakage from the batteries, the engine, the fuel cells, the compressed gas cylinders accumulators, or fuel tanks. Paragraph 2 indicates that flammable liquid may remain in the tank. If the vehicle or equipment is powered by a flammable liquid, the fuel tank may be up to one fourth full, or up to 250 L, whichever is less. Paragraph 3 does not provide any limitation on the amount of flammable gas contained in a fuel tank for a flammable gas powered vehicle or equipment, but does require the fuel shutoff valve to be securely closed. Paragraph 4 addresses lithium batteries, and requires that all installed lithium batteries be of a design type which successfully passed the United Nations *Manual of Tests and Criteria*, part III, subsection 38.3, or be approved by competent authority. Paragraph 5 addresses additional dangerous goods which may be installed on the equipment such as fire extinguishers gas, compressed accumulators and airbag inflators. These dangerous goods are permitted as long as they are securely mounted in the vehicle or equipment

If all conditions of these five paragraphs are met, then the marking, labeling, and placarding provisions of the IMDG Code do not apply. Only documentation, and if applicable, segregation requirements apply.

### **Future Changes – 37<sup>th</sup> Amendment to IMDG**

Due to the confusion of the existing text of SP961 and SP962, the IMO Editorial and Technical Committee drafted revisions to each of the special provisions. The proposed text will be reviewed by the IMO Sub-Committee on the Carriage of Cargoes and Containers for incorporation into the 37<sup>th</sup> Amendment to the IMDG Code. While the language is still draft, the following clarifications are made:

- SP961 will still provide exceptions from the Code for:
  1. Vehicles and engines loaded in RO/RO spaces. The exception will clarify that vehicles and engines loaded in containers and loaded on RO/RO spaces are still subject to SP962. Further, lithium batteries installed in vehicles must meet the testing criteria of UN38.3;
  2. Vehicles and engines fueled by combustible liquids (>38°C) with as much as 450L of fuel in the tank;
  3. Vehicles and engines fueled by flammable liquids provided the tank is empty. Empty does not require all fuel lines to be purged;
  4. Vehicles and engines fueled by flammable gas provide the tanks are empty and the positive pressure in the tank doesn't exceed 2 bar;
  5. Electric vehicles (other than those powered by lithium batteries);
  6. Engines powered by flammable liquid or gas provided the fuel has been purged and the engine sealed to prevent leakage;
  7. Fuel Cell engines provided the supply lines have been closed and the fuel supply reservoir has been drained and sealed.
- When the conditions of SP961 are not met, SP962 will apply and provide exceptions from marking, labeling, placarding and marine pollutants under the following conditions:
  1. Vehicles and engines must not show signs of leakage;
  2. Vehicles and engines fueled by flammable liquids must not have their fuel tanks more than ¼ full or 250L maximum, whichever is smaller;
  3. Vehicles and engines fueled by flammable gas must have their shut off valves closed;
  4. Lithium batteries must meet UN38.3 testing criteria;
- Both entries will still permit other dangerous goods installed on the vehicle or engine.