



**Committee of Experts on the Transport of Dangerous Goods
and on the Globally Harmonized System of Classification
and Labelling of Chemicals****Sub-Committee of Experts on the Transport of Dangerous Goods****Forty-second session**

Geneva, 3 – 11 December 2012

Item 2 (b) of the provisional agenda

**Recommendations made by the Sub-Committee on its thirty-ninth,
fortieth and forty-first sessions and pending issues: listing, classification and packing****Fuels in machinery and equipment****Transmitted by the Dangerous Goods Advisory Council¹****Introduction and background**

1. The implementation of special provision 363, introduced in the seventeenth edition of the Model Regulations, has brought to light the potential for introducing uncertainty with respect to the proper classification of machinery/engines fitted with an integral fuel tank (means of containment) and containing fuel. In particular, in certain instances, it is unclear whether machinery/engines should be transported under the proper shipping name of the fuel (e.g., gasoline or diesel fuel) contained in machinery/engine or under UN 3166. The Subcommittee's immediate attention to this matter is needed to avoid confusion when the new requirements in SP 363 are implemented beginning in January 2013. DGAC offers this document to provide a basis for the Subcommittee discussion.

SP 363

2. Special provision 363 was developed out of concern for large freight container size generator and heating and air conditioning units that are fully fueled so that they can be used in situations, such as national emergencies, where these units could be delivered and made operational without first fuelling the units. As indicated in the initial paper by the United Kingdom (informal document INF.10, 35th session) the tanks in these units could hold

¹ In accordance with the programme of work of the Sub-Committee for 2009-2010 approved by the Committee at its fourth session (refer to ST/SG/AC.10/C.3/68, para. 118 (d) and ST/SG/AC.10/36, para. 14).

up to 3000 L. A primary motivation for introducing new requirements was that such machinery is not otherwise subject to the ADR/RID since UN 3166, covering vehicles, machinery and engines containing flammable liquid fuels, is not subject to those requirements.

3. Under SP 363 machinery or equipment with an integral fuel tank containing more than a limited quantity of fuel (1L for a PG II fuel, 5L for a PG III fuel) is subject to its requirements. As written, depending on the amount of fuel present, SP 363 could be applicable to small portable machinery such as portable generators as well as the fully fuelled large generators originally of concern. Under SP 363, such units would be transported under the shipping name of the fuel contained (e.g., UN 1202 Diesel Fuel, UN 1203 Motor Spirit/Gasoline/Petrol). Fuel tanks are required to bear a flammable liquid label(s) or placards depending on the capacity of the integral fuel tank. This would apply independent of the amount of fuel actually being transported in an integral fuel tank, provided that amount exceeds the limited quantity amount. In addition, a transport document is required. Presumably, under SP 363, an example basic description for a piece of machinery with an integral fuel tank would be:

UN 1203, gasoline, 3, PG II

No special transport document provisions were introduced to acknowledge the unique nature of the means of containment being employed or to provide a means of estimating the amount of fuel present in order to comply with 5.4.1.5.1. It appears that other dangerous goods that are integral to a particular piece of machinery (e.g., a wet battery) would need to be consigned separately. Requirements such as protecting batteries against short circuiting appear to not apply.

4. When SP 363 was subsequently considered for implementation in the ADR/RID, its scope was significantly limited (see ECE/TRANS/WP.15/124, paras 23–24):

- Units with means of containment of 60 L or less were exempted;
- When the means of containment (i.e., the integral fuel tank) has a capacity between 60 and 450 L, the required label may be shown on the machinery;
- A transport document is only required when the means of containment has a capacity exceeding 1500 L.

In essence, it appears that the applicability of SP 363 was limited under new ADR/RID requirements to apply only to the large fuel tanks originally of concern.

5. SP 363 has not been adopted for inclusion in the 2013-2014 edition of the ICAO Technical Instructions. It has been incorporated, in full, in amendment 36-12 of the IMDG Code. In addition, it is being considered for adoption in some national regulations.

UN 3166 applicable to flammable liquid powered vehicles or engines

6. As evidenced by the possible proper shipping names available under UN 3166, its use is appropriate for vehicles and engines. From special provision 312 (referring to machinery), ICAO packing instructions 950 and 951 (referring to machines or equipment), IMDG Code special provisions 961 and 962 (referring to equipment), it is evident the term “engine” as used in UN 3166 is consistently taken as including machinery and equipment powered by flammable liquids. No provision in the Model Regulations limits the amount of fuel that may be transported under this entry (the entry was originally limited to air transport, see SP123). But limits are included in some of the regulations which regulate

UN 3166 as dangerous goods (e.g., the ICAO Technical Instructions, the IMDG Code, US DOT regulations in 49 CFR). Unlike SP 363, other dangerous goods that are integral to vehicles, engines and machinery are generally authorized under UN 3166 and their safety is addressed (although not by the Model Regulations).

Confusion over the applicable proper shipping name for machinery/engines

7. While SP 363 explicitly excludes vehicles, it is not clear how machinery or engines are to be consigned in the case of regulations that also regulate machinery and engines under UN 3166. This ambiguity creates uncertainty on whether machinery or engines with more than a limited quantity of fuel in an integral fuel tank should be consigned under the proper shipping name of the fuel or consigned under UN 3166.

8. Paragraph 2.0.2.2 of the Model Regulations states:

“Where an article or substance is specifically listed by name, it shall be identified in transport by the proper shipping name in the Dangerous Goods List.”

Clearly, from the shipping name and applicable special provisions and packing instructions, as described above, machinery and engines are “listed by name” under UN 3166. With this in mind, UN 3166 appears to be the appropriate entry for all machinery and engines subject to the regulations. While it would also seem to apply to the fully fueled freight container sized units which prompted the development of SP 363, limitations on the amount of fuel (e.g., limit of one quarter full in the IMDG Code SP 962) in the applicable regulations would generally preclude use of UN 3166 for these applications.

9. In spite of the clear direction on the use of UN 3166, inclusion of SP 363 in regulations already covering UN 3166 introduces confusion and will likely lead to frustration of shipments based on disagreements over the appropriate proper shipping name.

Additional considerations

10. In considering the appropriate classification for machinery and engines with an integral fuel tank containing in excess of a limited quantity of fuel the following should be noted:

(a) Existing provisions for UN 3166 already provide for other dangerous goods that are integral to machinery and engines. Such dangerous goods are not accounted for under SP 363. It would appear that UN 3166 provides for greater safety in respect of these other dangerous goods;

(b) Other than for unique circumstances, such as national emergencies, it is not customary to transport machinery or engines with fully loaded integral fuel tanks. In fact, as noted applicable regulations typically limit the amount of fuel in the case of machinery and engines transported under UN 3166. It is unclear what additional safety benefit SP 363 provides over UN 3166.

(c) Under SP 363 the integral fuel tank (means of containment) must be approved by the competent authority. While it appears that an ECE directive covers approval of integral fuel tanks in Europe (most likely for use purposes and not transport conditions), such approvals are not customary in other parts of the world. On what basis should a competent authority approve these integral tanks? How would acceptance personnel ensure that such tanks are approved? In addition, it is

not clear what competent authority must grant this approval under SP 363. It is noted that under the ADR/RID this was clarified as being the competent authority of the country of manufacture and specific reference is made to the ECE directive.

(d) Under SP 363, a transport document must be provided when more than a limited quantity of fuel is contained in the integral fuel tank of machinery or equipment. A basic description of “UN1203, Gasoline, 3, PGII” in the case of machinery or engines offered for transport is likely to raise questions by carrier acceptance personnel resulting in frustration of shipments. Under ADR/RID this problem was noted and was accounted for by a special transport document notation (i.e., “carriage in accordance with 1.1.3.3(c)”).

(e) There is potential for multimodal disharmony. For example, a machine or engine powered by diesel fuel may be transported under UN 3166 under ICAO without first draining the tank. Depending on the machinery or engine, it is possible that such a tank could contain more than a limited quantity of diesel fuel. Since SP 363 was not adopted for incorporation in the ICAO TI, air transport of such machinery/engines must be in accordance with UN 3166 and not SP 363. Similar confusion is likely under the IMDG Code where equipment is covered by UN 3166 (Note that additional relief is currently being considered for diesel fueled vehicles and equipment under the IMDG Code (see DSC 17/3/12)).

Recommendation

11. DGAC offers this paper as a basis for discussion at the 42nd session of the Subcommittee. While new amendments adopting SP 363 are scheduled to take effect on at least a voluntary basis on 1 January 2013, implementation of the new special provision would benefit from additional guidance from the Subcommittee in order to avoid confusion. In this respect, DGAC recommends that the Subcommittee include a statement in its report as follows:

“In relation to the applicability of UN 3166 or SP 363 to machinery or engines, the applicability of UN 3166 should first be considered (i.e., in accordance with 2.0.2.2 of the Model Regulations) provided UN 3166 is subject to the applicable regulations. Only when UN3166 does not apply or if all of the applicable requirements in the respective modal regulations for UN 3166 cannot be met should transport under SP 363 be considered.”

12. In doing so, machinery and equipment would continue to be transported under UN 3166 and applicability of SP 363 would only be considered when the conditions for UN 3166 could not be met (e.g., when the amount of fuel exceeded the amounts permitted under the applicable regulations). DGAC also recommends that further clarification with respect to the applicability of UN 3166 and SP 363 be considered in the next biennium.