



## **RAM DOCUMENTATION REVIEW PROJECT**

**Rob van Uffelen**

*World Nuclear Transport Institute, Remo House, 310-312 Regent Street, London, W1B 3AX,  
United Kingdom*

### **ABSTRACT**

This paper will examine in detail shipping documents that are required to be completed for an international maritime shipment of radioactive material. The paper will provide a summary of the required fields within the documentation, and it will further explain why these are required by the competent authority; shipping company; freight forwarder; port authority; customs, and others. This summary will provide an understanding to those not familiar with shipping documents. The study also will highlight where duplication of information appears in the documentation, and any lack of harmonisation in presentation where the same information is required between different organisations, authorities and countries. It will highlight the difference in time for preparation of the documents for a Class 7 radioactive cargo compared with other cargoes.

The study will compare the typical documentation required for a successful unhindered international maritime transport of Class 7 radioactive materials with those required for other dangerous goods, and non-dangerous goods.

Importantly, the study will suggest where harmonisation between the shipping documents could be made, and recommend reductions of the documentation burden.

### **1. INTRODUCTION**

The documents required to facilitate a smooth maritime shipment of radioactive materials are of concern due to their possible contribution to denials and delays in transports.

This paper examines the shipping documents for Dangerous Goods (other than Class 7) compared with those required for a class 7 shipments.

The paper will also examine in detail those documents required for class 7 shipments, seeking to reduce duplication, harmonise the information and format of the documents.

For this paper a sample shipment of radioactive materials between Australia to Canada is used.

### **2. WHAT WOULD THE BENEFIT BE?**

The benefit would be:

- Fewer documents;



- One format can easily be integrated in company software;
- A standard format allows for EDI messages;
- Reduction in (time consuming and different) paperwork;
- Side effect: less confusing terms.

### **3. COMPARISON OF DOCUMENTATION REQUIREMENTS BETWEEN “NORMAL” IMDG CARGO AND RAM.**

The International Maritime Dangerous Goods Code (IMDG) applies to maritime transports of all classes of dangerous goods,. Radioactive materials are designated as Class 7.

#### **“NORMAL” DANGEROUS GOODS (DG):**

If one wants to ship a drum with Epichlorohydrin (UN 2023 Class 6.1/3) and a drum with Resin solution (UN 1866 Class 3) in a 40’-container, a document called the “Multi Modal Dangerous Goods Declaration (MMDGD)” would need to be completed.

When shipping RAM cargo one would expect to be able to use the same document. The information would differ slightly due to the nature of the cargo (packing, radiation, etc.) .

Reviewing the forms used/received by members of the World Nuclear Transport Institute, we find:

- A lot of information is duplicated in different forms;
- Much information is basically the same but differently worded;
- The extra information in all different forms may be necessary but can probably be added to the commonly used MMDGD.

#### **Form “NZ export of Strategic Goods”:**

The purpose of this document seems to clear the RAM with Customs (or any other similar body) as RAM is considered restricted in movement around the globe. Such clearance is not required for the shipment of Pesticides and Resin. But again, does it require a different form?

In order to get this answered, a “normal IMDG-cargo MMDGD form” has been developed (*see 2MMDGform-normal IMO cargo*), by copying the information of the “NZ export of Strategic Goods” form into a “Multi Modal DGD form” (*see 3MMDGform-RAM cargo*) and compared the two MMDGD’s.

**Blue** is the information entered by a shipper for all IMDG cargo.

**Green** is information related to the RAM cargo (similar to “normal” DG).

**Red** on the 3<sup>rd</sup> page is information not normally covered on a MMDGD.

It can be noticed that some specific information is required in addition to “normal” DG. Most of this extra information relates to:

- Radiation (item specific for RAM);
- Permits (this partly does exist for some explosives, dual use goods and class 6.2);



- Route information (including ETA transshipment port).

**Blue** is the information used in other forms before (**duplicated**).

**Green** is information related to the RAM cargo (**similar to normal DG**).

**Red** is information on a MMDGD **not normally covered**.

### **1 NZ EXPORT OF STRATEGIC GOODS**

See above.

### **2 AUS APPLICATION TO TRANSFER Uranium Ore Concentrates INTERNATIONALLY**

**Name of permit holder:**

**Permit:**

**Name of receiver:**

**Facility of receipt**

**Material details:**

**UOC Owner: (same as exporter?)**

**Proposed movements through third countries (if known):**

**Processing operations in third countries (if known):**

**Proposed date of departure from Australia:**

**Port of departure from Australia**

**Nationality of the Captain:**

**Nationality of the Crew**

**Other vessel(s) (if applicable)**

**Name of other carrier:**

**Trans-shipment port(s) (if any):**

**Route:**

### **3 INITIAL RADIOACTIVE CARGO MARITIME CARRIAGE REQUEST**

**1<sup>st</sup> Vessel Name; Voyage No.; Flag**

**2<sup>nd</sup> Vessel Name; Voyage No.; Flag**

**3<sup>rd</sup> Vessel Name; Voyage No.; Flag**

**1<sup>st</sup> Port and Country of Loading**

**2<sup>nd</sup> Port and Country of Loading**

**3<sup>rd</sup> Port and Country of Loading**

**1<sup>st</sup> Port and Country of Discharge**

**2<sup>nd</sup> Port and Country of Discharge**

**3<sup>rd</sup> Port and Country of Discharge**

**Shipper: (full name and address)**

**Consignee: (full name and address)**

**Full Technical Name:**

**Intended Use: Power Generation**



Transport License No.:  
Export License No.  
Country of Origin:

Import License No.  
Country of Destination:

**Packaging identification:**

**Date of expiry of packaging certificate**

**Number and Type of packages:**

**Cargo Gross (Kg)**

**UN no.:**

**IAEA Schedule: 5 LSA-1**

**Name of Radionuclide: Natural Uranium (LSA) Low Specific Activity, (less than 1% U235)**

**Weight of Radionuclide (Kg):**

**Enrichment [%]: nil**

**Maximum Activity in Becquerel during Transport [Bq]:**

**Transport Index:**

**Radiation at Surface (in  $\mu\text{Sv/h}$ ):**

**Radiation at 1 Metre (in  $\mu\text{Sv/h}$ ):**

**Fissile status: Non Fissile**

**Category of package: III-YELLOW**

**Cargo Net (kg)**

**IMDG-Class: Class 7**

**Proper Shipping Name:**

**Physical Form: Dry Powder**

**0.06 (mSv/h) per ISO shipping container**

**0.02 (mSv/h) per ISO**

**Radioactive Material in finished form: No**

**IMDG Code 5.4.1.5.7.2:**

The transport document shall include a statement regarding actions, if any, that are required to be taken by the carrier. The statement shall be in the languages deemed necessary by the carrier or the authorities concerned, and shall include at least the following points:

Supplementary requirements for loading, stowage, transport, handling and unloading of the package, over pack or freight container including any special stowage provisions for the safe dissipation of heat (see 7.1.14.4), or a statement that no such requirements are necessary are included;

Restrictions on the mode of transport or conveyance and any necessary routing instructions

Emergency arrangements appropriate to the consignment are included

Completed by the shipper:

Signature

Date

Delivery

**4 FINAL RADIOACTIVE CARGO MARITIME CARRIAGE REQUEST**

Same as nr.3 – initial request (but some data may have changed).

**5 CERTIFICATE OF ORIGIN (GENERALISED SYSTEM OF PREFERENCES)**

a. Form A (combined declaration and certificate) 3 pages.

Goods consigned from (Exporter's business name, address, country)

Delivery reference number:



**Goods consigned to (Consignee's name, address, country)**

**Means of transport and route (as far as known)**

**Seafreight**

**Port of Loading:**

**Bill of Lading:**

**Port of Discharge: Item number**

**Number of packages**

**Origin criterion (see notes overleaf)**

**Gross weight (kg) of UOC**

**Number and date of invoices**

**6 NOTIFICATION CONFIRMATION OF UOC DISCHARGE & ARRIVAL DETAILS (FORM ASO203)**

*This looks complicated in relation to normal MMDGD information. However, it actually is a confirmation that nobody interfered with the cargo (Seals intact) and all containers arrived safely at the destination.*

**7 THE SAFE PORT ACT OF 2006 – US CUSTOMS IMPORTER SECURITY FILING - ISF5**

**8 REQUEST FOR AUTHORISATION TO DELIVER/COLLECT RAM AND RELATED EQUIPMENT**

**9 EXPORT LICENSE ISSUED BY THE CANADIAN NUCLEAR SAFETY COMMISSION**

**10 CERTIFICATE OF GOODS DELIVERED**

**One could use a MMDGD for this purpose but that will contain much more data.**

**11 BOOKING REQUEST CLASS 7 MATERIAL (USED FOR SHIPPING LINES)**

*Attachment 3 covers the information not included in a “normal” MMDGD.*

*This could well be attached to a DGD as a separate page but also as new form.*

ALTHOUGH ALL DATA IN THIS ATTACHMENT IS COMPRESSED ONTO ONE SHEET, IT IS MOST PROBABLE THAT IT WILL EVENTUALLY RESULT INTO AN A 2 PAGE DOCUMENT. PLUS A GUIDELINE: HOW TO ENTER THE DATA CORRECTLY.

**MULTIMODAL DANGEROUS GOODS FORM**

This form may be used as a dangerous goods declaration as it meets the requirements of SOLAS 74, chapter VII, regulation 4; MARPOL 73/78, Annex III, regulation 4

1 Shipper/Consignor/Sender <b>John Export</b>	2 Transport document number
3 Page 1 of 1 pages	4 Shipper's reference – <b>Normal IMO cargo</b>



<b>100 Pitt street, Sydney, NSW, Australia</b>		5 Freight Forwarder's reference		
6 Consignee <b>John Import 100 E Lancashire Rd, Liverpool UK</b>		7 Carrier (to be completed by the carrier) <b>SHIPPER'S DECLARATION</b> I hereby declare that the contents of this consignment are fully and accurately described below by the Proper Shipping Name, and are classified, packaged, marked and labelled/placarded and are in all respects in proper condition for transport according to the applicable international and national governmental regulations.		
8 This shipment is within the limitations prescribed for: (Delete non-applicable) <b>PASSENGER AND CARGO AIRCRAFT</b>		9 Additional handling information		
10 Vessel/flight no. and date <b>m.v. BOTANY 25-12-2010</b>		11 Port/place of loading <b>AUSYD</b>		
12 Port/place of discharge <b>GBSOU</b>		13 Destination <b>GBLVP</b>		
14 Shipping marks (kg)      *Number and kind of packages; description of goods Cube (m <sup>3</sup> )		Gross mass (kg)		Net mass
<b>UN 2023, EPICHLOROHYDRIN, Class 6.1(3), PG II, EmS F-E / S-D, Fl.Pt.+32C, MARINE POLLUTANT 1 drum GW/NW: 120 kg / 110 kg</b>				
<b>UN 1866, RESIN SOLUTION, Class 3, PG 3, EmS F-E / S-E, Fl.Pt. 24C 1 drum GW/NW 225 kg / 212 kg</b>				
15 Container identification No./ vehicle registration No. <b>NORU 1212334</b>	16 Seal number(s) <b>12123456</b>	17 Container/vehicle size & type <b>40'DC</b>	18 Tare mass (kg) <b>3200</b>	19 Total gross mass (including tare) (kg) <b>18300</b>
<b>CONTAINER/VEHICLE PACKING CERTIFICATE</b> I hereby declare that the goods described above <b>have been packed/ loaded into the container/vehicle identified above in accordance with the applicable provisions.</b> † <b>MUST BE COMPLETED AND SIGNED FOR ALL CONTAINER/VEHICLE LOADS BY PERSON RESPONSIBLE FOR PACKING/LOADING.</b>		21 RECEIVING ORGANISATION RECEIPT Received the above number of packages/containers/trailers in apparent good order and condition unless stated hereon: RECEIVING ORGANISATION REMARKS:		
20 Name of company <b>The packer specialist</b>		Haulier's name		22 Name of company (OF SHIPPER PREPARING THIS NOTE) <b>The shipper specialist</b>
Name/Status of declarant <b>HARRY SMITH – CHIEF PACKER</b>		Vehicle reg. no.		Name/status of declarant <b>TOM SMITH – HEAD EXPORT</b>
Place and date <b>Sydney 05-12-2010</b>		Signature and date		Place and date <b>Sydney 04-12-2010</b>
Signature of declarant		DRIVER'S SIGNATURE		Signature of declarant

## MULTIMODAL DANGEROUS GOODS FORM

This form may be used as a dangerous goods declaration as it meets the requirements of SOLAS 74, chapter VII, regulation 4; MARPOL 73/78, Annex III, regulation 4

1 Shipper/Consignor/Sender <b>John Export 100 Pitt street, Sydney, NSW, Australia</b>	2 Transport document number	
	3 Page 1 of <b>2</b> pages	4 Shipper's reference – <b>RAM-UOC cargo</b>
6 Consignee <b>John Import</b>	5 Freight Forwarder's reference	
7 Carrier (to be completed by the carrier)		<b>SHIPPER'S DECLARATION</b>

<b>100 E Lancashire Rd, Liverpool UK</b>		I hereby declare that the contents of this consignment are fully and accurately described below by the Proper Shipping Name, and are classified, packaged, marked and labelled/placarded and are in all respects in proper condition for transport according to the applicable international and national governmental regulations.		
8 This shipment is within the limitations prescribed for: (Delete non-applicable) <b>PASSENGER AND CARGO AIRCRAFT</b>		9 Additional handling information  <b>See page 2/2 for strategic and custom information</b>		
10 Vessel/flight no. and date <b>m.v. BOTANY 25-12-2010</b>		11 Port/place of loading <b>AUSYD</b>		
12 Port/place of discharge <b>GBSOU</b>		13 Destination <b>GBLVP</b>		
14 Shipping marks (kg)                      Cube (m <sup>3</sup> )	*Number and kind of packages; description of goods	Gross mass (kg)	Net mass	
<b>UN 2912, RADIOACTIVE MATERIAL LOW SPECIFIC ACTIVITY (LSA 1 – non fissile or fissile excepted), EmS F-I / S-S</b> <b>Category III Yellow with a max activity of 4.5 per container</b> <b>48 drum GW/NW: ??? kg / 400 kg each</b> <i>Original information from form “NZ Export of Strategic Goods”</i> <i>Twenty foot general purpose FCL shipping containers each having a GCW of around 20122 kg each packed with 48 steel drums containing approximately 400 kg of uranium oxide concentrate. Natural uranium UN2912 - Class 7 radioactive material Low Specific Activity (LSA-1 non fissile or fissile excepted) Category III Yellow with max activity of 4.5 per shipping container. Country of Origin - Australia</i>				
15 Container identification No./ vehicle registration No. <b>RAMU 1212334</b>	16 Seal number(s) <b>12123457</b>	17 Container/vehicle size & type <b>20'DC</b>	18 Tare mass (kg) <b>3200</b>	19 Total gross mass (including tare) (kg) <b>20122</b>
<b>CONTAINER/VEHICLE PACKING CERTIFICATE</b> I hereby declare that the goods described above have been packed/ loaded into the container/vehicle identified above in accordance with the applicable provisions. † <b>MUST BE COMPLETED AND SIGNED FOR ALL CONTAINER/VEHICLE LOADS BY PERSON RESPONSIBLE FOR PACKING/LOADING.</b>		21 RECEIVING ORGANISATION RECEIPT  Received the above number of packages/containers/trailers in apparent good order and condition unless stated hereon: RECEIVING ORGANISATION REMARKS:		
20 Name of company <b>The packer specialist</b>	Haulier's name		22 Name of company (OF SHIPPER PREPARING THIS NOTE) <b>The shipper specialist</b>	
Name/Status of declarant <b>HARRY SMITH – CHIEF PACKER</b>	Vehicle reg. no.		Name/status of declarant <b>TOM SMITH – HEAD EXPORT</b>	
Place and date <b>Sydney 05-12-2010</b>	Signature and date		Place and date <b>Sydney 04-12-2010</b>	
Signature of declarant	DRIVER'S SIGNATURE		Signature of declarant	

\*

**Additional items for RAM shipments**  
*(Sorted in groups based on their purpose)*

**Shipping agent details:**

**ROUTING**

Facility of receipt  
 Route



	Vessel name	Carrier	Voyage No.	Flag.	Nationality	Master	Crew
1 <sup>st</sup>							
2 <sup>nd</sup>							
3 <sup>rd</sup>							

	Port and Country of Loading	Port and Country of Discharge
1 <sup>st</sup>		
2 <sup>nd</sup>		
3 <sup>rd</sup>		

Intended Use:	Transport License No.:
Country of Origin:	Country of Destination:

**RAM ADDITIONAL INFORMATION**

Date of expiry of packaging certificate	Weight of Radionuclide (Kg):
Name of Radionuclide:	
Physical Form:	Enrichment [%]:
Maximum Activity in Becquerel	during Transport [Bq]
Transport Index:	
Radiation at Surface (in $\mu\text{Sv/h}$ ):	per ISO shipping container
Radiation at 1 Metre (in $\mu\text{Sv/h}$ ):	per ISO shipping container
Fissile status:	Y/N Fissile
Radioactive Material in finished form:	Y/N

**FINANCIAL/CUSTOM INFORMATION**

Delivery	Delivery reference number:
Sea freight	Bill of Lading:
Origin criterion	Number and date of invoices
Total FOB value in e.g. \$AUS	

**SECURITY**

Seal numbers/weights	Verified by	Port / Location
	Date	
Agent Reference:	Booking Party:	
Commodity / HTS Number	Importer of Record Number:	
Consignee Number		

**PERMITS**

Export	Application received
Application number:	Permit type:
Permit number:	Permit to expire:
Permit dated	





Permit authorised by:  
Import  
Permit number:  
Permit dated  
Permit authorised by:

Permit to expire:

Transshipment  
Permit dated  
Permit authorised by:

Permit to expire:

#### **4. CONCLUSION**

It should be noted that some documents, although taken into account, are not presented in the paper.

This paper has shown that all the relevant information required may be provided on an extended MMDGD, thus reducing the lead time, duplication, reducing possible human error.

If there is support from the transport industry and other interested parties the proposed form could be submitted to the International Maritime Organisation, Facilitation Committee for their consideration.