“Book it right & pack it tight”

New guidebooks to the IMDG Code operational rules for preparing dangerous goods for carriage by sea
Book 1: Shippers & Forwarders

Book 2: Shipping lines and freight booking agencies

Book 3: Consolidators – managers and supervisors

Book 4: Fork lift operators and cargo handlers
Subjects covered in this presentation

Part 1:
1.1 - Purpose & content of the Guidebooks
1.2 - Classification of dangerous goods
1.3 - Documentation: shipper’s declarations
1.4 - Packaging & package labelling

Part 2:
2.1 - Receiving dangerous goods
2.2 - Segregation within freight containers
2.3 - Container packing: load planning, drums, pallets & IBCs
2.4 - Bracing & securing cargo in containers
2.5 - Container placarding
2.6 - Limited quantities
2.7 - Fumigation
2.8 - The packing certificate
2.9 - Training
2.10 - Summary & source of further information
Part 1.1 – Purpose & content of the Guidebooks
What is in the Guidebooks?

- Clear guidance on what you must do to comply with shipping regulations when packing dangerous goods into containers
- Explanation of your legal duties
- Practical examples of stowing & securing cargo
- Sample documents
- Photographs & illustrations of cargo techniques and causes of damage
Format of the guidebooks

The Guidebooks all have a Part A & Part B:

**Part A** identifies the key **operational duties** – what you must do and how to do it

**Part B** is a **common reference section** explaining requirements of the **IMDG Code**
What is the purpose of the Guidebooks?

1. To provide practical operational guidance to packing dangerous goods into containers

2. To provide a quick reference to the relevant IMDG Code text
A fundamental question: What are dangerous goods?

Answer: Substances or articles that may:

- kill or injure people
- damage ships or transport equipment
- damage cargo
- damage the environment (marine pollutants)
Are there rules for shipping dangerous goods by sea?

YES – there are strict rules for shippers, container packers and shipping lines

The rules are contained in the International Maritime Dangerous Goods Code
Failure to comply with dangerous goods rules causes severe maritime incidents ......
.... and heavy losses
The International Maritime Dangerous Goods Code

Known as the **IMDG Code**

A complete instruction manual for documentation, packaging and carriage of dangerous goods by sea
What is the IMDG Code?

- Two volumes & a Supplement (over 800 pages)

- Rules for every stage of the carriage of dangerous goods by sea

- A UN system for the marking & labelling of packages and documentation

- Specific legal duties for container packers arising from the Safety of Life at Sea (SOLAS) Convention
Who has duties under the IMDG Code?

• Fork lift operators & cargo handlers
• Container packers (supervisors & managers)
• Shippers & forwarders
• Shipping line booking agents
• Ships and shipping lines
Book 4: Fork lift operators & cargo handlers

Practical operational guidance for fork lift operators & cargo handlers:

1. Package marks & labels
2. Making up unit loads
3. Packing & securing cargo
4. Pallets & drums
5. Container placards
6. Documents
7. Packing certificates
This presentation is aimed at:

- Fork lift operators and cargo handlers who:
  - Receive dangerous goods into a warehouse
  - Palletise packages to make unit loads
  - Pack dangerous goods into containers for transport by sea
The guidebook is your quick guide to packing containers

Your quick reference for how to pack dangerous goods into containers and.....
…… and the IMDG Code

…. if you need to check any details, the Guidebook’s references take you straight to the right page in the IMDG Code
References from the Guidebook to the IMDG Code

- References to sections in Guidebook 4 are shown in yellow e.g.

See Guidebook Part B section 4
Guidebook 4 identifies knowledge needed by container packers:

1. The classification system
2. Marks, labels and placards
3. Dangerous goods documents
4. Principles of segregation
5. Best methods of container packing
6. Bracing & securing packages in containers
7. What to do about leaking drums/packages
Part 1.2 – The classification system
What is the “classification system”? 

Classification is a name for the international system for identifying dangerous goods and the hazards on documents and packages according to the IMDG Code eg:

- UN Number
- Name of product
- Class and type of hazard(s)
- Degree of hazard
- Description in terms used in the IMDG Code
Where are classification details shown?

1. Classification details are shown on the document you get from the shipper

2. Classification details are shown on package marks & labels and container placards

Checkpoints

Marks and labels should be checked against the details in the shipper’s declaration on the transport document:

- Class label
- Sub-risk label (if applicable)
- UN Number
- Proper Shipping Name
- Marine pollutant mark (if applicable)
Classification factors: mandatory & conditional

There are a number of classification details shippers must provide for each dangerous substance:

1. UN Number
2. Proper Shipping Name
3. Class
4. Plus there are a number of “conditional” details such as Packing Group (degree of hazard), flashpoint, marine pollutant etc, depending upon the substance
There are 9 hazard Classes

Dangerous goods are put into one of 9 categories, depending upon the type of hazard. These are called ‘Classes’

Class 1 - Explosives
Class 2 - Gases
Class 3 - Flammable Liquids
Class 4 - Flammable Solids
Class 5 - Oxidising Substances
Class 6 - Toxic Substances
Class 7 - Radioactive Substances
Class 8 - Corrosives
Class 9 - Miscellaneous
Hazard classes are represented by symbols: examples

**CLASS 3**
Flammable liquids are liquids that have a flashpoint of below 61°C.

**CLASS 6.1**
Toxic substances cause injury or death to humans or animals by inhalation, swallowing or skin contact.

**CLASS 8**
Corrosive substances and their vapours destroy living tissue on contact and can damage many other materials.
Some classes are sub-divided into “divisions”

**Class 2.1** – Flammable gas

**Class 2.2** – Non-flammable non-toxic gas

**Class 2.3** – Toxic gas

See Guidebook 4
Part B Section 4
Sub-risks (Multiple hazards)

- Some substances have more than one hazard – They have a Class and a “sub-risk”

  e.g. a flammable liquid may also be toxic

  **CARBON DISULPHIDE**

  Class 3 + Sub-risk 6.1

See Guidebook 4
Part B section 5
UN Number

- Every dangerous substance has a UN Number
- This is a unique number allocated by the UN
- The UN Number is used to locate the dangerous substance entry in the IMDG Dangerous Goods List

eg UN 1170

See Guidebook Part B section 6
Review: All dangerous goods have a:

- UN Number
- Proper Shipping Name
- Class

Example: ETHANOL

- UN Number - UN 1170
- Proper Shipping Name - ETHANOL
- Class - 3
Proper shipping names
(Common substances & articles)

• The Proper Shipping Name is the name by which a dangerous substance is recorded in the IMDG Dangerous Goods List

• This is the one name internationally recognised by the United Nations dangerous goods system

• It is the only name allowed to be used on IMDG documentation and package labelling
Dangerous goods consist of substances & articles

E.g. Substance name: SULPHURIC ACID
E.g. Article name: ROCKET MOTORS

See Guidebook
Part B section 7
Proper Shipping Names
(Mixtures & uncommon substances)

- Mixtures of substances and uncommon substances are not listed in the Dangerous Goods List

- They are shipped under generic names called “Not Otherwise Specified” (N.O.S.) names
How N.O.S Proper Shipping Names are determined for mixtures

- A mixture is subjected to classification tests to determine if it should be assigned to a hazard class and sub-risk

- If so, the mixture is allocated a class and generic name that describes the hazard
  eg FLAMMABLE LIQUID N.O.S. Class 3

- Each generic name is assigned a UN Number
  eg UN 1993, FLAMMABLE LIQUID N.O.S. Class 3

See Guidebook Part B section 7
There are other classification details that are “conditional”

- “Conditional” classification details are those that depend upon the class of dangerous goods

- To find what details are required for a particular substance, refer to the substance entry in the Dangerous Goods List

See Guidebook 3 Part B sections 5, 8, 10, 11, 14, 15, 16, 17 & 19
The most common conditional classification details:

- Sub-risk
- Packing group
- Flashpoint (Class 3 substances only)
- Marine pollutant
Packing Groups: an indication of danger

- Some hazard classes require the documentation to show a Packing Group to indicate degree of hazard.
- “Packing Group” is usually shortened to “PG”

<table>
<thead>
<tr>
<th>Packing Group</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PG I</td>
<td>Great danger</td>
</tr>
<tr>
<td>PG II</td>
<td>Medium danger</td>
</tr>
<tr>
<td>PG III</td>
<td>Low danger</td>
</tr>
</tbody>
</table>

See Guidebook Part B section 8
Flashpoint

• The shipper must provide the flashpoint on documents for:
  - Class 3 substances (Flammable Liquids)
  - Or any substance with a class 3 sub-risk

CLASS 3 - flammable liquids are liquids that have a flashpoint of less than 60°C.

See Guidebook
Part B section 10
Flashpoint

- The flashpoint must be shown on documents provided for:
  - Class 3 substances (flammable liquids)
  - Or any substance with a class 3 sub-risk

**CLASS 3** - flammable liquids have a flashpoint of 60°C or below

See Guidebook 4 Part B section 10
Marine Pollutants

- Substances that bio-accumulate in the marine food chain, or are highly destructive to the marine environment

- Marine pollutants must be declared “Marine Pollutant” on documents and packages and containers must display the marine pollutant mark

See Guidebook Part B section 11
There are other less common “conditional” details

Be aware that there are other less common conditional classification details that may be required on documents

Examples:
- Solid or liquid form
- Control & emergency temperature
- Radioactivity details
- Explosives details
Part 1.3 – Documentation: Shipper’s declarations
Who has duties regarding documentation?

• The shipper:
  • Must provide the packer with a signed document fully describing the dangerous goods

• The Packer:
  • Must ensure he has received signed documents from the shipper
  • Must create a container packing certificate
  • Must submit the shipper’s document and packing certificate to the shipping line, and give the driver a copy
Detailed dangerous goods information arrives with the cargo on a declaration signed by the shipper.

See Guidebook 4 Part A page 14
Details required for the dangerous goods declaration

- Shipper’s address
- Consignee’s address
- Ship & voyage details
- Classification & identification
- Packaging description
- Quantity
- Leading marks
- Shipper’s signature
- Place & date of signature

See Guidebook 4
Part A sections 3.3
<table>
<thead>
<tr>
<th><strong>Shipper’s name &amp; address</strong></th>
<th>DVD Chemicals Ltd Commercial Street London, UK</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Consignee’s name &amp; address</strong></td>
<td>New Way Manufacturing Company Kuala Lumpur Malaysia</td>
</tr>
<tr>
<td><strong>Voyage details</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Number &amp; type of packaging</strong></td>
<td>80 drums UN 2023 EPICHLOROHYDRIN Class 6.1 (3) PG II (+32°C c.c.) MARINE POLLUTANT</td>
</tr>
<tr>
<td><strong>Leading marks</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Classification &amp; identification</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Container details</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Packing certificate details:</strong> To be completed &amp; signed by the container packer after the container is packed</td>
<td></td>
</tr>
</tbody>
</table>
The document: who provides the details?

• The shipper must provide full details of the packaging, identity and classification of the dangerous goods

• The packer may provide details about the container, voyage and quantity packed in the container

• The packer must always complete the packing certificate
**Classification details**

- Proper Shipping name: Mandatory
- Class: Mandatory
- UN Number: Mandatory
- Sub-risk: (conditional)
- Packing Group: (conditional)
- Marine Pollutant: (conditional)
- Flashpoint: (conditional)
- Control & emergency temperature: (conditional)
- Fumigation details: (conditional)
- Radiation details: (Mandatory for Class 7)
- Explosives details: (Mandatory for Class 1)
Shipper’s declaration: This text confirms that the shipper has accurately described his dangerous goods and they are correctly classified, packaged and labelled according to all national and international legislation.

This is a mandatory text from the IMDG Code.

Net & gross quantity of dangerous goods

This is where the document is signed and dated by the shipper.
Classification determines segregation, placarding & packing

The packaging, classification and substance identification dictate segregation, container packing and container placarding.

See Guidebook 4
Part A section 3
Part 1.4 – Packaging & package labelling
Packaging for dangerous goods

Three principles apply to packages:

1. They must be made to a UN approved design standard

2. The UN design type and size must be permitted by the IMDG Code

3. Each package must be marked and labelled with details of the dangerous goods
UN-approved packaging design

- Shippers must select packages for dangerous goods that are built to an approved UN design standard

- A corresponding UN code is stamped onto the package

- As the packer, it is your duty to ensure that you check packaging has the UN-approval stamp

See Guidebook
Part A section 5
Packaging codes

Example of a UN code marked on a drum head
Package marking & labelling

Each package must display warnings about the dangerous goods inside:

- Proper Shipping Name
- UN Number
- Class(es) diamond label(s)
- Marine Pollutant mark
  - (if applicable)

See Guidebook 4
Part A section 6
Marking & labelling unit loads and overpacks

Each individual package in a unit load must be marked and labelled.

Overpacks must be marked and labelled and an “OVERPACK” mark must be added.
When stacking packages on pallets ensure that:

1. Correct marks & label(s) are displayed on each package
2. Marks and labels are not obscured by shrink-wrapping or cladding
3. Packages are coded with the UN-approval mark
4. No damaged or leaking packages are loaded
Part 2:
Practical issues regarding container packing

The rest of this presentation covers the practical issues arising from container packing
Part 2.1 – Receiving dangerous goods
Good practice for receiving dangerous goods

When dangerous goods arrive at your premises check the following:

– Documentation (shipper’s declaration completed and signed)
– Marks and labels on the packages match the shipper’s declaration
– Packages are UN-approval coded
– Packages are not damaged or leaking

See Guidebook 3
Part A section 4
Spillages: Emergency response

- If dangerous goods escape from their packaging there may be a direct hazard of fire, serious injury to personnel or damage to your premises and cargo:
  
  - Ensure you understand the hazards of any dangerous goods you handle
  - Ensure your organisation has an emergency procedure
  - Ensure you can recognise a dangerous situation
  - Ensure you understand what to do to avoid injury
Part 2.2 – Segregation within freight containers
Segregation within a freight container

- Some dangerous goods react violently with other dangerous goods

- These must be segregated – **THIS MEANS NOT LOADED INTO THE SAME CONTAINER**

- It is one of the key duties of persons controlling the packing of containers to check segregation before loading commences

See Guidebook 3 Part A section 12
Loading mixed dangerous goods to a container

- The IMDG Code has strict rules prohibiting the packing of certain dangerous goods together in one container.
- If you are loading mixed (different types of) dangerous goods to a container always check with your supervisor that the segregation rules have been checked.
- The ship will reject any container that contains a prohibited combination of dangerous goods.
The procedures for segregation are complex and should only be done by a trained person.

Be aware that different types of dangerous goods may have to be packed into different containers.

See Guidebook 4 Part A section 6
Principles of segregation

1. Some classes of dangerous goods must never be packed in the same container.

2. When two different classes are permitted to be packed together, there may be prohibitions on particular UN Numbers of different Classes being packed together.

3. There may be prohibitions on particular UN Numbers of the same Class being loaded to the same container.
Responsibility for segregation

The supervisor or person in control of packing dangerous goods into a container is also responsible for ensuring that segregation rules are observed.
Part 2.3 – Container packing: load planning, drums, pallets & IBCs
Skills needed to pack containers

- It is the responsibility of the container packer to pack and secure dangerous goods in containers so that cargo:
  - Is not damaged during loading
  - Does not suffer damage during transit
  - Can be removed without damage at the destination
Container pre-loading assessment

Before beginning to load dangerous goods into a container the following factors should be checked:

- Shipper’s documentation is correct
- Marks & labels are correct
- Packages are not damaged
- Package weight, size and strength assessed
- Segregation has been checked
- Bracing & securing materials available
Empty container check

Empty containers should be checked for:

- Dangerous residue
- Structural damage/weakness
- Holes & leaks
- Nails in floor
- Old placards
- Out-of-date CSC container inspection plate

See Guidebook 4 Part A section 7.4
Obtain or create a container stow plan

The stow plan should contain details of:

- Package stowage positions
- Weight distribution (light over heavy and lateral distribution)
- Use of bracing & securing materials as necessary
Weight distribution

Unbalanced containers are dangerous to lift and prone to jam in ship cargo holds.

See Guidebook Part A section 7.3

- Weight spread evenly - container hangs level – no lateral stress on cargo during lifting.
- Weight at one end – container dangerously unbalanced.
Some container loading principles

- Check condition of empty containers
- Load with dangerous goods closest to the door
- Load with labels facing the doors
- Load with solids over liquids
- Load light over heavy
- Load with regard to the strength and weight of the packages
- Brace and secure packages so they cannot move

See Guidebook 4 Part A section 7
Leaking drums & packages

- Never load damaged or leaking drums or sifting packages, whatever the contents

- If dangerous goods are spilled follow an emergency procedure

See Guidebook 4 Part A section 8.1
Load with warning labels facing the door

When practicable packages should be packed with hazard labels facing the doors so that they can clearly be seen by persons opening the doors for the first time.
Load dangerous goods nearest the door

Where dangerous goods and non-hazardous goods are loaded into the same container the dangerous goods should be placed closest to the doors.

This helps those who respond to an emergency or devan damaged and leaking packages from the container.
Load solids over liquids

Whenever practicable, load solids above liquids, not liquids above solids.
Loading drums into containers

- Steel drums generally form a good base cargo and can be overstowed by pallets and casework.

- Plastic drums are not as strong and care needs to be taken when overstowing.

Drum-handling equipment reduces drum damage

Manually handling drums into containers is possible, but proper handling equipment reduces damage

See Guidebook 4 Part A section 9
Drums on pallets

- Drums stacked on pallets can be handled with standard fork lifts
- Drums should be securely banded or film-wrapped to the pallets to prevent movement

See Guidebook 4 Part A section 9.3
Drums on the roll

The IMDG Code prohibits the stow of dangerous goods drums “on the roll”

See Guidebook 4 Part A section 9.4
Using timber sheets to stack steel drums

Use timber sheets between tiers of steel drums to prevent metal to metal contact

See Guidebook 4 Part A section 9.5
Packing dangerous goods on pallets

Pallets will collapse if they are not strong enough for the weight placed on them.

Check pallets for strength of construction before use.

See Guidebook 4
Part A section 11.2
Heavy pallets can cause damage to packages

Goods can easily be damaged if overstowed by heavily-loaded pallets

Timber sheet placed between pallets can prevent such damage
Nails from broken pallets can puncture drums

Nails protruding from badly made or broken pallets can puncture drums and packages

See Guidebook 4 Part A section 11.3
Precautions when using pallets

- Check strength of pallets - broken pallets damage cargo
- Check for protruding nails - nails puncture drums
- Use timber sheet between tiers of pallets to protect overstowed cargo
Packing solid-frame IBCs

IBCs of the same design can be stacked easily.

When stacking IBCs of different designs, or when overstowing with other goods, timber sheet should be used between tiers.

See Guidebook 4 Part A section 10
Part 2.4 – Bracing & securing cargo in containers
Securing the cargo

Packages placed inside containers must be secured so that they cannot move.

Packages that can move in the container will be damaged during transport by sea.

See Guidebook 4 Part A section 12
Gap-filling using pallets

Pallets can be used to fill gaps

Pallets and timber used together can create “gates” to restrain cargo and secure it so that it does not move

See Guidebook 4 Part A section 12.1
Gap-filling using airbags

Gaps between packages may be filled using air bags
These are quick and easy to use, and effective but need air pumps to inflate them

See Guidebook 4
Part A section 12.2
Blocking & bracing using timber

The weight of the cargo is transferred to the corner posts by timber bearers.

Timber cross-struts

Timber upright nailed against container corner post to take the weight of the cargo

See Guidebook 4 Part A section 12.3
Blocking and bracing at both ends of the stow to secure cargo in place and achieve equal cargo weight distribution.

See Guidebook 4 Part A section 12.3 for other examples of securing methods.
Lashing cargo using strops, ropes and wires

Cargo can be secured by lashing with strops or ropes fixed to lashing points inside the container. These are often difficult to access and may not be as effective as using timber bracing and pallets.

See Guidebook 4 Part A section 12.4
Part 2.5 – Container placarding
Placards for dangerous goods containers

The packer is responsible for attaching placards to any containers in which dangerous goods have been packed.

See Guidebook 4 Part A section 15
Placarding for a single substance

Single hazardous substance – less than 4000 kgs
4 x Diamond placards

Single hazardous substance – more than 4000 kgs
4 x Diamond placards
4 x UN Numbers

See Guidebook 3 Part A section 21.1
Placarding for multi-hazard loads

Two hazardous substances in the container
8 x Diamond placards

Single hazardous substance with sub-risk – more than 4000 kgs
8 x Diamond placards
4 x UN Numbers

See Guidebook 3 Part A section 21.1
Placarding for multi-hazard loads

Two hazardous substances in the container

Single hazardous substance with sub-risk

See Guidebook 3 Part A section 21.1
Marine pollutant mark on containers

• When substances classed as marine pollutants are loaded to a container the marine pollutant mark must be added to both sides, front and rear.

See Guidebook 4 Part A section 15.2
Part 2.6 – Limited Quantities
Limited quantities

In principle limited quantities means shipping dangerous goods in very small receptacles protected by outer packaging.
Different rules for limited quantities

- Normal package and container labels and marks are substituted by the marine pollutant mark

- Limited quantities are exempted from the IMDG segregation rules, UN packaging, and many other road and sea transport restrictions

- The document must state “Limited Quantities”

See Guidebook 4
Part B section 9
Aerosols: special rules

• Aerosols are a commonly-shipped commodity that often cause problems

• Are usually shipped as limited quantities
  (Note limited quantity marks)

• Aerosols have special rules for classification, documentation and packaging

See Guidebook 4
Part B section 19
Part 2.7 – Fumigation
Fumigation & fumigated units

DANGER

THIS UNIT IS UNDER FUMIGATION
WITH [ fumigant name ]
APPLIED ON [ date ] [ time ]
VENTILATED ON [ date ]

DO NOT ENTER

Information for container packers who add fumigation chemicals to containers

See Guidebook 4
Part B section 17
About fumigation

- Fumigation chemicals added as tablets or plates slowly release highly toxic gas
- Tablets break down into powder residue
- The residue can be dangerous and should be easily removable at the destination BEFORE the container is devanned
Adding fumigation chemicals to containers

• Do NOT scatter tablets over cargo

• Place tablets inside envelopes or wrappings so that they can be easily found and removed at destination

• Always place fumigation warning sign on exterior of container doors
Part 2.8 – The Packing Certificate
The packing certificate

A packing certificate must be completed and signed by the person in charge of packing for all containers carrying dangerous goods after packing is complete.
What is a dangerous goods packing certificate?

• The packing certificate is the name for a legally binding certificate signed by the container packer stating that the container is:
  
  • Packed with dangerous goods
  • Complies in every way with the IMDG Code
  • Packed so that it is safe in every respect for sea

See Guidebook 3
Part A section 8
How to complete the packing certificate

1. Name of the company packing the container
   Gold Warehouse Services Ltd

2. Name and job title of the person in charge of the packing operation
   Peter Packer/ Load Supervisor

3. Place and date of signature
   Bristol 20.06.2005

4. Signature of person in charge
   Peter Packer

Packing Certificate:
To be completed by packer after container is packed. (See Section 8)
Who must sign the packing certificate?

- The packing certificate can only be completed and signed by the person in charge of packing dangerous goods into a container – THE MANAGER OR SUPERVISOR.
Does the packing certificate have legal liability?

YES

Any packer who packs dangerous goods into a container has responsibility under the terms of the IMDG Code to ensure that the load is safe for sea transport.
What is certified on the packing certificate?

1. Packer has received shipper’s declaration
2. Dangerous goods have been correctly identified & described
3. The container is in good condition
4. Segregation is checked and no incompatible dangerous goods loaded
5. No damaged or leaking packages loaded
6. All packages are secured and braced for sea transport
7. Drums are stowed in an upright position
8. Packages are correctly marked and labelled
9. Container is correctly placarded
The packer has a heavy responsibility

• As the packer you are the last person to see inside a container before it is loaded to a ship

• You must not allow containers to be despatched with unsafe or unsecured cargo

• A ship cannot correct packing errors

• You MUST get your job right or the ship will be at risk
Does the packing certificate have legal liability?

YES

Any packer who packs dangerous goods into a container enters an agreement with the shipping line that:

- the terms of the IMDG Code have been observed and
- the load is safe for sea transport
Your guidebook includes a checklist that can be used to check any aspect of loading a container with dangerous goods.
100% of dangerous goods in a container must be declared

All dangerous goods in a container must be declared

Undeclared dangerous goods are prohibited and create unacceptable risk to ships

See Guidebook 4 Part A section 17
Ship stowage depends on correct identification

- It is vital to the safety of the ship that all dangerous goods are declared.

- Only correctly declared dangerous goods can be stowed safe from heat and a safe distance away from other dangerous goods and accommodation.

- Undeclared dangerous goods may be stowed in unsafe positions.
Some stowage positions can expose containers to intense heat. These are prohibited for stowing heat-sensitive dangerous goods.

Danger area
Containers subject to direct heat from the sun.

Danger area
Containers subject to heating from ship's machinery.

Danger area
Containers subject to heating from hot fuel tanks.
Massive fire and explosions on the new container ship Hanjin Pennsylvania 11th November 2002

It is suspected that undeclared dangerous goods stowed in unsafe stowage positions were involved
Part 2.9 – IMDG Code Training
Have you received dangerous goods training?

The IMDG Code requires that employers provide training to any employee handling dangerous goods at two levels:

- general dangerous goods awareness
- job-specific functions

Refer to the IMDG training schedule in section 1.3 of the IMDG Code to check the functions in which you are expected to be competent.
Key training areas for forklift operators and cargo handlers

- The IMDG Code requires that all persons handling dangerous goods must be trained
- Forklift operators and cargo handlers should be able to understand:
  - Basic classification & documentation
  - Package marking & labelling
  - Basic segregation principles
  - How to stow packages in containers
  - Cargo bracing & securing
  - Container placarding
  - Packing certificates

See Guidebook 4 Part A section 2
Use the training checklist to identify the jobs you do.

If you have not been trained to do those jobs you must obtain training from your employer.

Consolidator's dangerous goods training and procedure checklist

This is a checklist to confirm that you have the following information.
Tick ✔ as appropriate:

☐ Do you know who receives dangerous goods into your site?
☐ Are they trained to check documentation and package marking?
☐ Does anyone keep a record of DG on your facility?
☐ Is it up to date?
☐ Do they record the location?
☐ Do your personnel palletise/re-package/shrink-wrap dangerous goods packages?
☐ Does anyone make up unit loads (overpacks)?
☐ Have they been trained to mark and label them to IMDG rules?
☐ Are cargo transport unit load plans prepared?
☐ Do you know who plans loading of dangerous goods into cargo transport units?
☐ Do they have access to the IMDG Code rules?
☐ Have they been trained to understand IMDG Code segregation?
☐ Do you know who supervises the loading of dangerous goods into cargo transport units?
☐ Do they have access to the IMDG Code rules?
☐ Have they been trained to understand the IMDG Code?
☐ Is anyone responsible for checking cargo transport units before loading starts?
☐ Have they been trained in what to check for?
☐ Have fork lift drivers been trained in IMDG Code segregation?
☐ Have fork lift drivers received training in loading dangerous goods and non-hazardous cargo into freight containers?
☐ Is anyone responsible for ensuring that packages have been secured inside the cargo transport unit?
☐ Have they been trained to secure cargo?
☐ Are packing, securing and sheet materials available?
☐ Are tools available for cutting timber and sheets?
☐ Are people trained to use them?
☐ Are container manifests prepared?
☐ Are they checked to include all the dangerous goods?
☐ Do you know who is responsible for applying appropriate placards?
☐ Have they been trained?
☐ Do they check each cargo transport unit before despatch?
☐ Is the stock of placards adequate?
☐ Are packing certificates completed and signed?
☐ Do you know who does this?
☐ Have they been trained and do they understand the legal significance of packing certificates?
Dangerous goods security awareness

- Dangerous goods have been used by terrorists to create explosions, fires and toxic releases
- Be aware of potential hazards
- Follow your company security system and keep dangerous goods information confidential
- Report any unusual activity

See Guidebook 3 Part A section 3
Part 2.10 – Summary & source of further information
Subjects covered in this presentation

Part 1:
1.1 - Purpose & content of the Guidebooks
1.2 - Classification of dangerous goods
1.3 - Documentation: shipper’s declarations
1.4 - Packaging & package labelling

Part 2:
2.1 - Receiving dangerous goods
2.2 - Segregation within freight containers
2.3 – Container packing: load planning, drums, pallets & IBCs
2.4 – Bracing & securing cargo in containers
2.5 - Container placarding
2.6 - Limited quantities
2.7 - Fumigation
2.8 - The packing certificate
2.9 - Training
2.10 - Summary & source of further information
What has been covered in this presentation

• This presentation has looked briefly at the main requirements of the IMDG Code, and the key duties of fork lift operators and cargo handlers who pack containers

• More detailed advice on how to pack dangerous goods in containers will be found in Guidebook 4.
Important Notice

The Guidebooks are a practical operational aid and should be used alongside the IMDG Code.

They are not a substitute for IMDG Code training – employees should be trained as appropriate for their job and responsibility.

Technical issues should always be checked against the legal text of the IMDG Code.
The end

This presentation is to introduce the “Book it Right and Pack it Tight” guidebooks to a wide audience and to promote understanding and use of the IMDG Code. Please modify to your own requirements.