MOVINS version 3
features • rules • best practice

2nd Draft by Jost Müller
Issues around stowage instructions

• Business view

• Technical basics = parameters of stowage instructions
  – Bayplan – Vessel profile (below / above deck)
  – Cell grid of stowage locations (20’, 40’); stacks; lashing bridges
  – Equipment (length, height, width); high cubes; pallet wide
  – Cargo types (DG, OOG, breakbulk, reefer)

• Rules for processing of stowage instructions
## Aims of stowage planning

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<th>Terminal</th>
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</table>
Stowage planning process

VSA booking COPRAR → Container Operators → MOVINS Stowage instructions → Terminal

Vessel operator’s central planning office → terminal built up

Load / discharge COPRAR

Preliminary BAPLIE

Departure BAPLIE

Next port

Stowage locations blocked by loaded cargo important for subsequent port(s)
Bayplan

- **Bayplan used for load planning:**
  (after-discharge bayplan)
  - Departure previous port
    - remove discharged cargo
    - remove blocking caused by discharged cargo

- **Departure bayplan**
  After-discharge bayplan plus ...
  - loaded cargo
  - restowed cargo
  - blocking caused by loaded / restowed cargo

**EDI attributes of loaded cargo**
- Equipment type, ID, full/empty
- **POL/Discharge port**, opt. addl. routing
- Mass (VGM)
- Operator
- DG item attributes
- OOG measures
- Temperature / range settings
- Handling instructions
- Reference to blocked slots
- ...

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Stowage Locations

• 20’/40’ cell grid (bay row tier)
• on- /below deck
• resulting actual stack height
• blocked locations
• equipment restrictions
• multiple lashing options
• hatches other than 40’

• lashing bridges
• athwart stowage
• special setup of stack foundations
Standard Equipment (in standard workflow)

- **standard dimensions** 20’/40’ length, 8’6/9’6 height, 8’ width
  - equipment’s size type might define other than standard dimensions

- **different equipment types** defined by size type
  - general purpose
  - ventilated
  - temperature control
  - open top (*standard* only as long as no over-height)
  - platform / flats (end walls up/down)
  - tanks

- **max. transport stacking weight** ≥ 192t

- **potentially bundles of flats**
non-standard equipment (examples)

- equipment length 45’, 48’, 10’, 27’, 30’, etc
- equipment width other than 8’
  - Pallet wide 40’ HC: size type 4EG1 (≤ 2.5 m) ; 4NG1 (> 2.5m)
  - Pallet wide 45’ HC: size type LEG1 (≤ 2.5 m) ; LNG1 (> 2.5m)
  - Pallet wide 20’ (8’6): size type 2CG1 (≤ 2.5 m) ; 2LG1 (> 2.5m)
Cargo causing **special attention** (examples)

- out-of-gauge
- temperature controlled equipment with special requirements (e.g. reefer engine fwd/aft, ripening process vs. deep freeze)
- breakbulk and supporting equipment
- handling instructions calling for special care
- ventilation and other atmosphere control of equipment
- equipment which requires special monitoring
Loading Instruction Rules (1 - general)

- **Message sender is obliged to take care that all stowage locations mentioned for loading (resp. restow target) are accessible**
- Stowage locations marked as reserved in after-discharge bayplan must not be used
- POD must be observed as specified for equipment in stowage location
- Length of equipment must match stowage location size (20’/40’)
  - Special cases:
    - length > 40’ is to be stowed into indicated stowage location
    - extra handling instructions required for odd equipment length like 10’, 24’ 30’
    - with/without lashing gap; restrictions by lashing bridges
- in case of vertical mix of equipment height the total stack height is to be observed
- reduced max. stacking weight of equipment to be observed
- in case multiple equipment is to be loaded into one stowage location the sequence of equipment is to be observed
Loading Instruction Rules (2 - mandatory)

• Equipment with at least one of the following attributes must be stowed into the indicated stowage location

<table>
<thead>
<tr>
<th>Attribute</th>
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</thead>
<tbody>
<tr>
<td>DG - Dangerous Goods</td>
<td>OOG – Out-of-gauge</td>
</tr>
<tr>
<td>breakbulk and supporting equipment</td>
<td></td>
</tr>
<tr>
<td>temperature controlled equipment - reefers</td>
<td>on-shore power supply</td>
</tr>
<tr>
<td>if required by equipment’s handling instruction</td>
<td></td>
</tr>
</tbody>
</table>

Equipment may be swapped with other equipment with identical attributes but different identification.
... some non-obvious cases (still to be decided)

• usage of supplementary stowage locations not mentioned in loading instructions, especially on top of stacks
• cargo not arriving in time  
  – Which stowage locations to leave empty
• For optional extra loaders  
  – Which stowage locations to be used for which POD?
Stowage Instructions: some *background intentions* not explicitly transmitted by codes

- Prepare height of adjacent stacks for loading large breakbulk in subsequent port
- Limits for on-deck stack height (e.g. passage of canals, crane height in subsequent ports)
- Weight distribution for control of stability, stresses, drought, trim