

# CARGO SYSTEM AWARENESS

# AGENDA

1. LASHMATE STORY
2. VALUE
3. LASHING PROCESS

# LASHMATE STORY

- MacGregor provides its customers with approximately 100 documentation updates annually, ensuring compliance with the latest rules and regulations.
- Lashmate software is currently installed on approximately 300 container vessels and in back offices, making it a trusted solution for secure and efficient container transport.
- Lashmate software supports all major classification societies and includes the latest features such as route and weather-specific rules, providing an all-encompassing solution for container vessel operators.

# LASHMATE VALUE

- Firstly, using Lashmate software to determine lashing forces on cargo systems will ensure no forces are unknowingly exceeded, while also enabling operators to maximize the potential and flexibility of the cargo system, optimizing cargo intake.
- Secondly, in suitable weather conditions, Lashmate software can reduce the number of lashings required to a minimum, potentially enabling operators to sail with twistlock securing only.
- Thirdly, Lashmate software helps to optimize labor requirements for cargo securing, streamlining the process and reducing the time and effort required from the crew.

# LASHING PROCESS

**current way of work: no lashing calculation done, containers are secured with full set of lashing**

planner creates a stowage plan



containers are loaded onto vessel



stevedores secure the containers



lashing forces not available



vessel sails towards next port



**new way of work: lashing calculation done from planning phase, possible to use alternative lashing**

planner creates a stowage plan



containers are loaded onto vessel



stevedores secure the containers



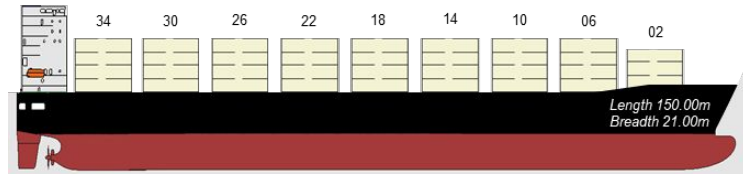
lashing forces are checked



vessel sails towards next port



# FEEDER VESSEL EXAMPLE



## Example cases

Following examples have been calculated with 1.50m GM value and latest DNV class rules.

Tier No. 88:	HQ	HQ	HQ	HQ	HQ	HQ	HQ	HQ	HQ
Tier No. 86:	8.8	14.6	7.0	16.0	11.0	11.7	11.2	7.3	
Tier No. 84:	HQ	HQ	HQ	HQ	HQ	HQ	HQ	HQ	HQ
Tier No. 82:	10.5	23.8	24.7	28.1	18.7	16.0	26.3	11.7	
Forces (in %)	18.7	30.5	28.3	30.5	30.2	30.5	28.6	25.7	
in Lashings:	44	79	63	88	64	62	74	47	
on Containers:	36	59	45	66	53	55	52	40	
on Twistlocks:	36	49	38	54	41	41	46	37	
on Deck Sockets:	36	49	38	54	41	41	46	37	
Stack Weight:	38.0	68.9	60.0	74.6	59.9	58.2	66.1	44.7	

### Latest DNV class rules

Lashing forces and container forces up to date

### Unrestricted service

Lashing calculation for all sea areas

### Internal lashing system

Containers secured with twistlocks and lashings

Tier No. 88:	HQ	HQ	HQ	HQ	HQ	HQ	HQ	HQ	HQ
Tier No. 86:	8.8	14.6	7.0	16.0	11.0	11.7	11.2	7.3	
Tier No. 84:	HQ	HQ	HQ	HQ	HQ	HQ	HQ	HQ	HQ
Tier No. 82:	10.5	23.8	24.7	28.1	18.7	16.0	26.3	11.7	
Forces (in %)	18.7	30.5	28.3	30.2	30.5	28.6	25.7		
on Containers:	121	114	87	133	86	82	101	116	
on Twistlocks:	121	114	72	133	81	78	101	116	
on Deck Sockets:	121	114	72	133	81	78	101	116	
Stack Weight:	38.0	68.9	60.0	74.6	59.9	58.2	66.1	44.7	

### Latest DNV class rules

Lashing forces and container forces up to date

### Unrestricted service

Lashing calculation for all sea areas

### Twistlocks only

Containers secured only with twistlocks

Tier No. 88:	HQ	HQ	HQ	HQ	HQ	HQ	HQ	HQ	HQ
Tier No. 86:	8.8	14.6	7.0	16.0	11.0	11.7	11.2	7.3	
Tier No. 84:	HQ	HQ	HQ	HQ	HQ	HQ	HQ	HQ	HQ
Tier No. 82:	10.5	23.8	24.7	28.1	18.7	16.0	26.3	11.7	
Forces (in %)	18.7	30.5	28.3	30.9	30.2	30.5	28.6	25.7	
on Containers:	108	92	77	102	76	72	88	103	
on Twistlocks:	108	84	48	99	56	54	72	103	
on Deck Sockets:	108	84	48	99	56	54	72	103	
Stack Weight:	38.0	68.9	60.0	74.6	59.9	58.2	66.1	44.7	

### Latest DNV class rules

Lashing forces and container forces up to date

### Asia to Europe route

Reduced factor for Asia to Europe sea areas

### Twistlocks only

Containers secured only with twistlocks

Tier No. 88:	HQ	HQ	HQ	HQ	HQ	HQ	HQ	HQ	HQ
Tier No. 86:	8.8	14.6	7.0	16.0	11.0	11.7	11.2	7.3	
Tier No. 84:	HQ	HQ	HQ	HQ	HQ	HQ	HQ	HQ	HQ
Tier No. 82:	10.5	23.8	24.7	28.1	18.7	16.0	26.3	11.7	
Forces (in %)	18.7	30.5	28.3	30.5	30.2	30.5	28.6	25.7	
on Containers:	90	74	62	82	61	58	71	78	
on Twistlocks:	90	44	34	49	35	34	40	78	
on Deck Sockets:	90	44	34	49	35	34	40	78	
Stack Weight:	38.0	68.9	60.0	74.6	59.9	58.2	66.1	44.7	

### Latest DNV class rules

Lashing forces and container forces up to date

### Short voyage

Reduced factor for short voyages up to three days

### Twistlocks only

Containers secured only with twistlocks

# RECAP

## Key Elements of the Update Package:

- Update of the Container Securing Arrangement (CSA) and Cargo Securing Manual (CSM) according to the latest rules and calculations, including new alternative lashing setups.
- Delivery of Lashmate software on board and to the back office, as an everyday operations tool to determine lashing forces in the cargo system. Lashmate software reflects the updated manual and provides increased visibility into the efficiency and safety of cargo stowage.



**DESIGNED TO PERFORM  
WITH THE SEA**