

Mediterranean container hubs of the future

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Motorways of the Sea

- 2 in the Med
- How will they relate to container transport development in the area?



The top 10 (2007)

RANK	PORT	2007 TEU	2006 TEU	CHANGE
1	Gioia Tauro	3.45m	2.94m	+17.3%
2	Algeciras	3.41m	3.24m	+4.8%
3	Valencia	3.01m	2.61m	+16.5%
4	Barcelona	2.60m	2.32m	+12.6%
5	Ambarli	1.94m	1.45m	+34%
6	Malta Freeport	1.90m	1.49m	+21.5%
7	Genoa	1.86m	1.66m	+12%
8	Port Said East (SCCT)	1.78m	1.60m	+5.6%
9	Piraeus	1.37m	1.39m	-2.0%
10	La Spezia	1.19m	1.14m	+4.4%

Source: Lloyds List

The top 10 (2017)

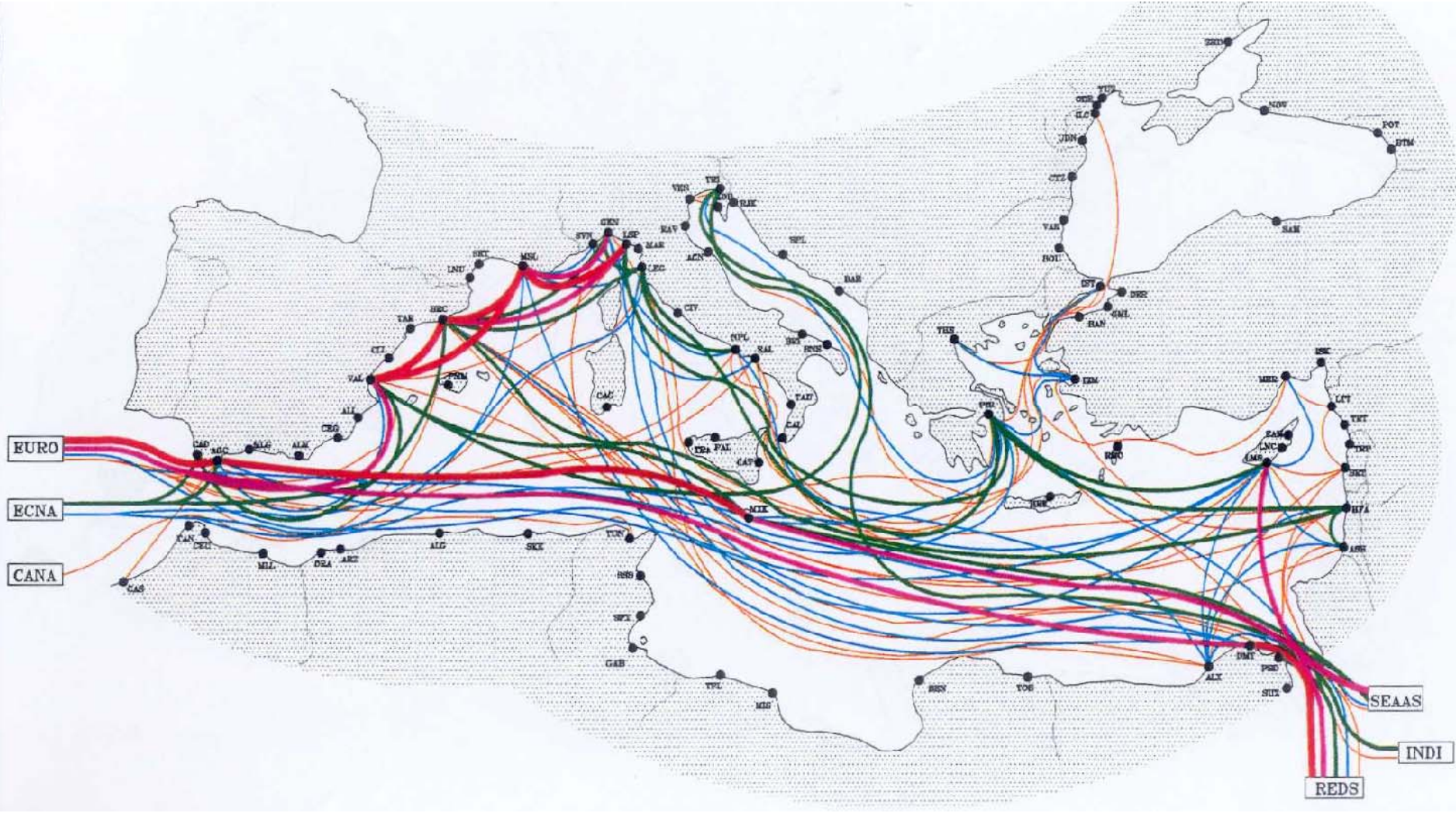
- ???





Factors for the future

- Economic
- Social
- Technological
- Political
- Environmental
- Legislative

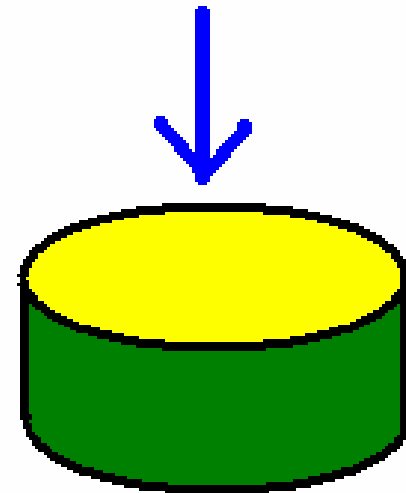


Crude remarks

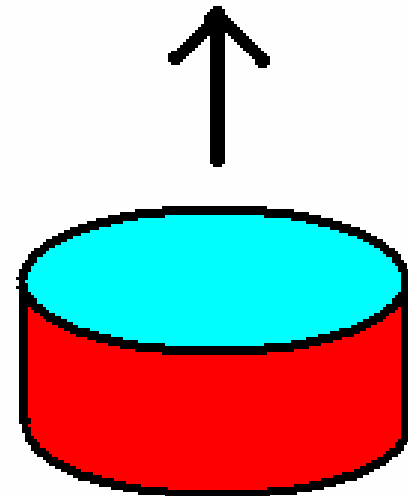
- General increase of traffic
 - Much of traffic is transshipment
 - Increase of private port operator role
 - Investment growth
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- Some of container traffic (Far East – Europe) completely bypasses the Med
 - Port infrastructure and hinterland connections are lacking vis-à-vis Northern Europe

Global issues and the 'push-down, pop-up' principle

- If you push one button down,



- At least another one will pop up



Button no. 1: speed reduction

- Savings in fuel costs
 - Means to reduce emissions
 - Pick up slack in containership overcapacity
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- Killing 3 birds with one stone?

GL: “An efficient ship is a **green ship**”

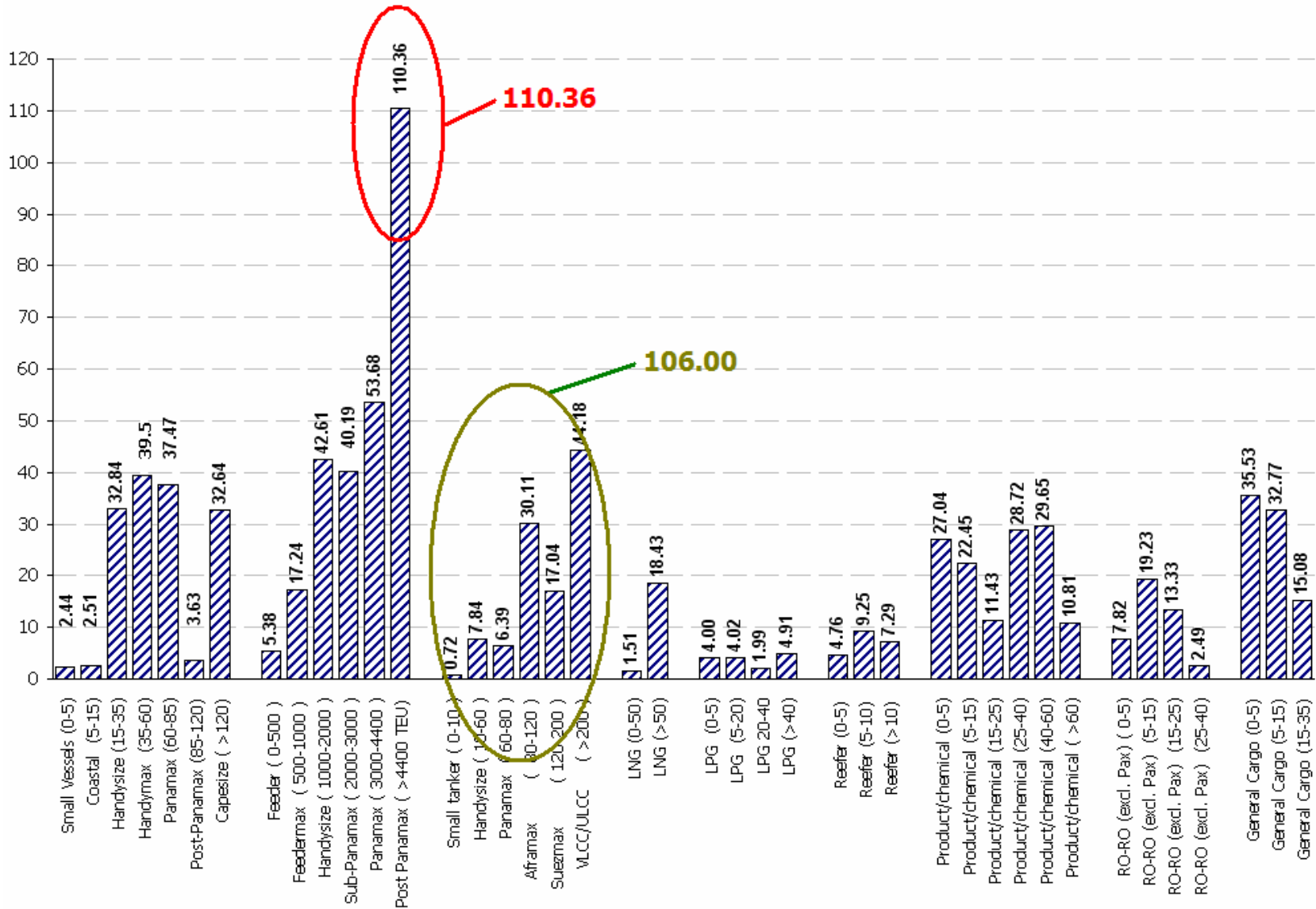
Lloyds List, 30 July 2008

- GL first suggested slowing down some three years ago – and today, the idea has been accepted by most shipping lines in the container trade, said a GL spokesman.
- “We recommend that shipowners consider installing less powerful engines in their newbuildings and to operate those container vessels at slower speeds,” he said.

How much slower?

- From 20-25 knots, go down to 15-18
- Fuel consumption: grows as the cube of speed

CO2 emissions per vessel category (million tonnes)



'Pop-up' effects of speed reduction

Will need:

- Either more ships
- Or bigger ships
- Or both

To maintain same level of throughput

Hypothetical example

- String of 20 (identical) container ships
- Payload $W = 50,000$ tonnes
- Base speed $V = 21$ knots
- Fuel Consumption at 21 knots = 115 tonnes/day
- Assume fuel price $p = \$600/\text{tonne}$
- Fuel bill = $\$69,000/\text{day}/\text{ship}$

- Reduced speed $v = 20$ knots
- FC at 20 knots = 100 tonnes/day (cube law vs. 21 knots)
- Fuel bill = $\$60,500/\text{day}/\text{ship}$

2 scenarios

- 20 ships at 21 knots (scenario A)
 - Total fuel burned/year/ship = 41,975 tonnes
 - Total fuel cost = **\$503,700,000**.
-
- 21 ships at 20 knots (scenario B)
 - Total fuel burned/year/ship: 36,500 tonnes
 - Total fuel cost = **\$459,900,000, REDUCED.**
-
- NET REDUCTION IN CO2 EMISSIONS: 231,410 TONNES/YR

Potential impact

- Fuel costs will go down
- Other ship operational costs: + or -
- Cargo in-transit inventory costs will increase
- Net effect on total costs: unclear

Impact on network design and ports

- Unclear, but:
- Expect 'hub and spoke' to become more prevalent
- Speculate that role of big Med hubs will increase
- Environmental side-effects: unknown
 - (expect 'cold ironing' to be used extensively)

Button no. 2: make ships bigger

- Economies of scale
- EMMA MAERSK: ~11,000 TEU
- STX designs 22,000 TEU monster boxship
- Claims will reduce per container shipping costs by 40 percent.
- 460-meter long, 60-meter-wide
- Will be available in one- or two-propeller configurations and be capable of speeds of between 24 to 26 knots.

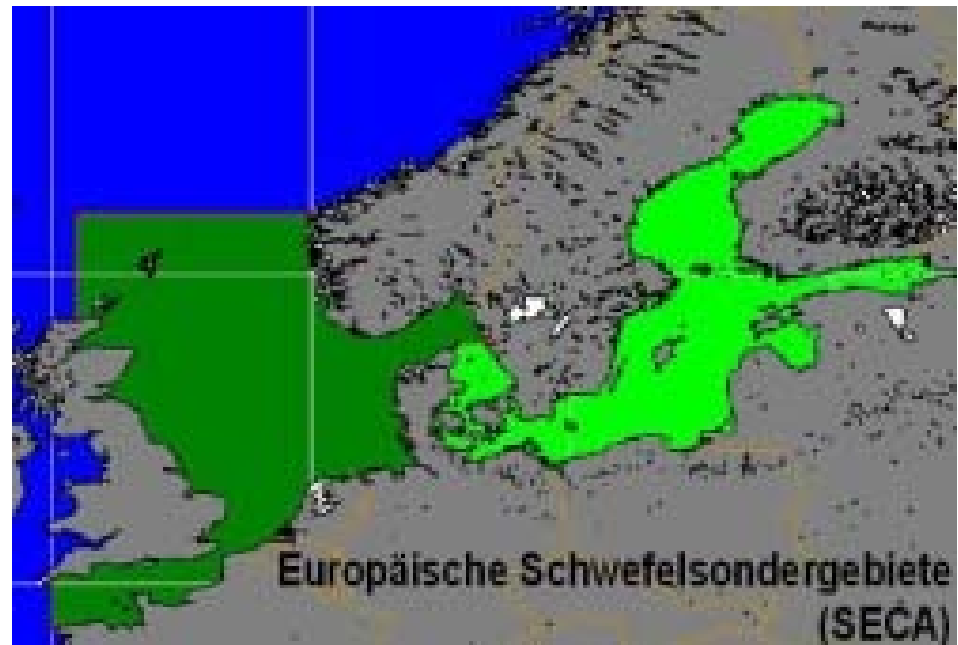
Questions (naïve):

- Which, among Med ports, will be able to accommodate such ships?
- At what cost? (infrastructure and other)

- Answer: ???
 - (will more ships completely bypass the Med?)

Button no. 3: use cleaner fuels

- Important for Sulphur Emissions Control Areas (SECAs)
- The Med is not currently a SECA (the Baltic and North Seas are)
- But environmental considerations may make it one in the future



'Pop up' effects of cleaner fuels

- Ship operational costs: will increase
- Freight rates: will go up
- Shippers in the Med may be more prone to use land alternatives
- Goal to shift cargo from land to sea: down the drain
- CO2 total emissions: up!



Button no. 4: container security

- ISPS code (2002)
- EC regulation 725/2004
- EC directive 2005/65
- SAFE port act (USA)
- C-TPAT
- etc



'Pop up' effects of increased security

- Delays in container screening
- Increased costs
- Penalization of maritime mode versus land ones, especially road



Conclusion

- Prospects for container Med port development are currently positive, BUT:
- A holistic approach is needed to formulate best alternatives for the future
- The current fragmented approach will further increase 'push-down, pop-up' situations

Thank you!



Coordinates

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