



# Challenges in International Seaborne Transport

Presented by:

Harilaos N. Psaraftis

Professor

Laboratory for Maritime Transport

National Technical University of Athens (Greece)



# Move straight to main conclusion

Challenges and Trends in Shipping:

Markets Investments and Policies

ANNUAL

CONFERENCE

**...** 2007  THERE ARE MANY SERIOUS CHALLENGES IN INTERNATIONAL SHIPPING

- CHALLENGE NUMBER ONE:
- Being a keynote speaker in IAME 2007



#### TYPES OF CHALLENGES

Challenges and Trends in Shipping:

Markets Investments and Policies

ANNUAL

CONFERENCE

M

2007

FOCUS ON 2 CONTEXTS

- Logistics-intermodality (mainly in Europe)
- Safety- environment (more globally)



#### LOGISTICS-INTERMODALITY

Challenges and Trends in Shipping:

Markets Investments and Policies

ANNUAL
A
CONFERENCE
M
2007

#### MAIN CHALLENGES:

- Develop a global maritime-intermodal transport system that is efficient and competitive
- Integrate Short Sea Shipping (SSS) within intermodal logistics chains
- Formulate efficient and effective port policies



# In Europe: White Paper on Common Transport Policy to 2010: Time to Decide

Challenges and Trends in Shipping:

Markets Investments and Policies

ANNUAL
A
CONFERENCE
M
2007

SSS: Central pillar of EU transport policy:
 GOAL: "SHIFT CARGO FROM LAND TO SEA"

Objective: reduce transport 'external costs'
 = Congestion+noise+pollution+accidents

2001: 0,5% of EU GDP

2010: rise by 142% to 1% of EU GDP
 (80 billion euros a year) if no action is taken



#### Parenthesis: In the US

Challenges and Trends in Shipping:

Markets Investments and Policies

ANNUAL
A
CONFERENCE
M
2007

STONE-AGE SITUATION

- Jones Act:
- Intra-US trade: only by ships that
  - Fly the US flag
  - Are manned by US crew
  - Are built in the US!
- + Enormous lobbying power of trucking industry, ... →
- Situation as regards SSS: hopeless



# In Europe: a series of measures to promote SSS and intermodality

Challenges and Trends in Shipping:

Markets Investments and Policies

ANNUAL
A
CONFERENC
M
2007

- Marco Polo programme launched in 2003
- Successor to "PACT"

- Goal: shift 12 billion tonkilometers a year from road to non-road modes
- ~1% of the traffic
- Marco Polo II: shift 140 billion ton-kilometers
- ~10% of traffic!



# Motorways of the Sea (TEN-T project No. 21)

Challenges and Trends in Shipping:

Markets Investments and Policies

ANNUAL
A
CONFERENCE
M
2007

- Motorway of the Baltic Sea
- Motorway of the Sea of Western Europe
- Motorway of the Sea of South-West Europe
- Motorway of the Sea of South-East Europe





### The not-so-good news...

Challenges and Trends in Shipping:

Markets Investments and Policies

ANNUAL
A
CONFERENCE
M
2007

- SSS grew considerably between 1990 and 2002 (36%),
- But road transport grew even faster (41%)
- Inland navigation growth almost stagnant (<17% in 12 years)





# EU-15 modal split

Challenges and Trends in Shipping:

Markets Investments and Policies

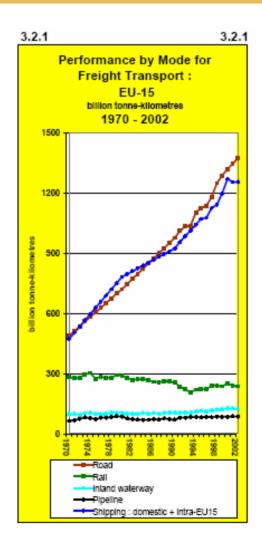
ANNUAL

CONFERENCE

м

200

ECONOMISTS





## Focus after 1985

Challenges and Trends in Shipping:

Markets Investments and Policies

ANINILIAI

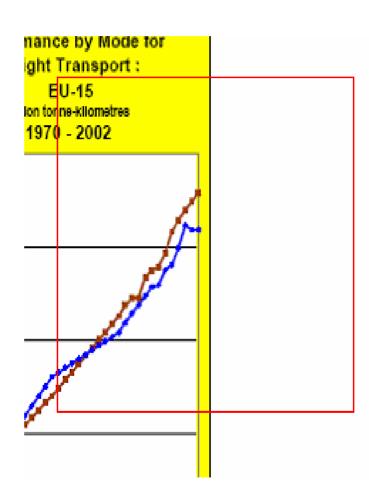
A

CONFERENCE

M

200

ECONOMISTS





#### In fact...

Challenges and Trends in Shipping:

Markets Investments and Policies

ANNUAL
A
CONFERENCE
M
2007

- ..in 1985 road surpassed SSS as the top transporter in intra-EU trades in tonkm,
- a position that it will continue to hold if no serious action is taken





# EU-25 (already 27) better?

Challenges and Trends in Shipping:

Markets Investments and Policies

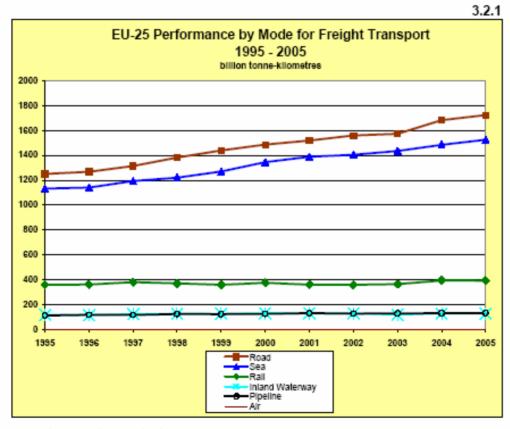
. ANNUAL

CONFEDENCE

M

200

Е



Source: tables 3.2.4 to 3.2.7, estimates



# Other problems: (1) Customs procedures at ports

Challenges and Trends in Shipping:

Markets Investments and Policies

ANNUAL
A
CONFERENCE
M
2007

One stop shop??







# (2) SSS fleet ageing

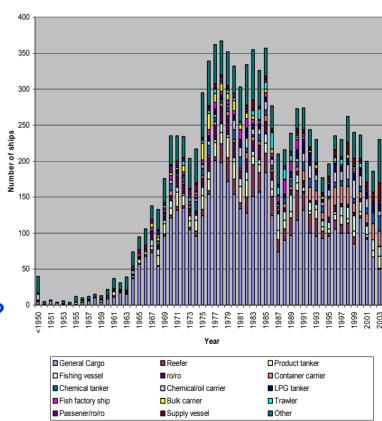
(source: Wijnolst & Waals, 2005)

Challenges and Trends in Shipping:

Markets Investments and Policies

ANNUAL
A
CONFERENCE
M
2007

- ships between 500 and 10,000 GRT
- ~10,000 ships in Europe
- 38% of fleet over 25 years
- 21% of fleet over 30 years
- 10% of fleet over 35 years!
- Q: How will fleet be replaced?
- Q: What will happen to SSS?





#### (3) the impact of environmental protection

Challenges and Trends in Shipping:

Markets Investments and Policies

ANNUAL A CONFERENC M

2007

LIST OF EU ENVIRONMENTAL DIRECTIVES THAT AFFECT PORTS

- The Health and Safety in the Workplace Directive,
- The Waste Reception Facilities Directive,
- The Wild Birds Directive,
- The Habitats Directive,
- The Bathing Water Directive,
- The Dangerous Substances Directive,
- The Urban Waste Water Treatment Directive,
- The Shellfish Directive,
- The Water Framework Directive,
- The Environmental Impact Assessment Directive,
- The Strategic Environmental Assessment Directive, and
- The Environmental Liability Directive.





### (4) yet more: the burden of security

Challenges and Trends in Shipping:

Markets Investments and Policies

ANNUAL
A
CONFERENCE
M
2007

- EU Regulation on ship and port security, (transposes the ISPS code into EU law)
- EU Directive on port security
- plan for an EU Directive on supply chain security
- EU-US agreements (bilateral and global)
- Container Security Initiative
- CTPAT
- Etc, etc



### (5) and on top of all this...

Challenges and Trends in Shipping:

Markets Investments and Policies

ANNUAL

CONFERENCE

M

2007

- Failure of port package (Jan. 2006)
- Back to square one after 8 years of talks
- EU port industry still trying to regroup





#### Saga of ports directive descends into farce

ESPO changes tack after confusion, writes Justin Stares INCOMEN violates appet to the better, the committee that pound a Employ Displayer agreem density, under confuse the density to the

controlly following about throad promoting the European professions.

The European First Copposition is a second of the European First Copposition in the second logislation producing mind the manufacture of the profession is recorded to be a profession to the copposition of the copposition for the act that the discretism is recognized assumptions.

We have explained the transport committee to the copposition for the coppos

Which we make the transport moments on any six with two for any to a wide the second of the first part of the second of the distriction of the second of the distriction of the first in more not on repealed. The modifies the thorough row up to hand a the transport one mixture by both book, the transport one mixture by both book, and the second of the

he margini. But it is moralled "veroching" amount. It is the moralled "veroching" amount is moralled with moralles of a moralles of the moralles of a morall

the European Paraphir Parity.
At this point, it bedoed no if the detire was such and would be decreased the positions of pleasey remains a January in a firm over public in EPA. The travership for each of Marcovan on, resembler shanged the mind, while, repair the districtive as commission of the a continuiting " and Mr. Journaus hardwall, accounts mark here there in the significant of the discontinuation of the region of the continuity." Be discontinuously the region of the continuity of This is the versal provide recent in the continuity of the continuity of the continuity of the continuity of these at the versal of the versal street below 2 february of the versal street, Mr. Markeyeres, and "The versal discontinuity of the continuity of the continuity of the continuity of the providence of the continuity of the discontinuity of the continuity of the discontinuity of discontin

heligensisten Parig, "Perkani Franke in heligensiste have from weath of Reparch high part of 1970, he was to some of the health of part of 1970, he was to some of the health of the Theoretisten and the standard of the temper man of the deal of security to the temperature of the standard of the standard of the temperature of the standard of the st

The remarkable are also inflice but that he was willing to resource market being he resource for the property of the property of the force.

My flavour was provinced acting without head to appropriate to the professional patterning market for the professional patterning market for the professional professional patterning the market for the professional patterning the market for the professional patterning the professio



## Logistics-intermodality challenge

Challenges and Trends in Shipping:

Markets Investments and Policies

ANNUAL
A
CONFERENCE
M
2007

- Impressive regulatory framework on many fronts
- But policies may not converge
- If an over-regulated system is handed a maze of additional requirements, logistics and intermodality will suffer
- That will help road transport increase its share even further
- Central goal of shifting cargo from land to sea: down the drain.



### To be avoided...

Challenges and Trends ir Shipping:

Markets Investments and Policies

PALESMACIO

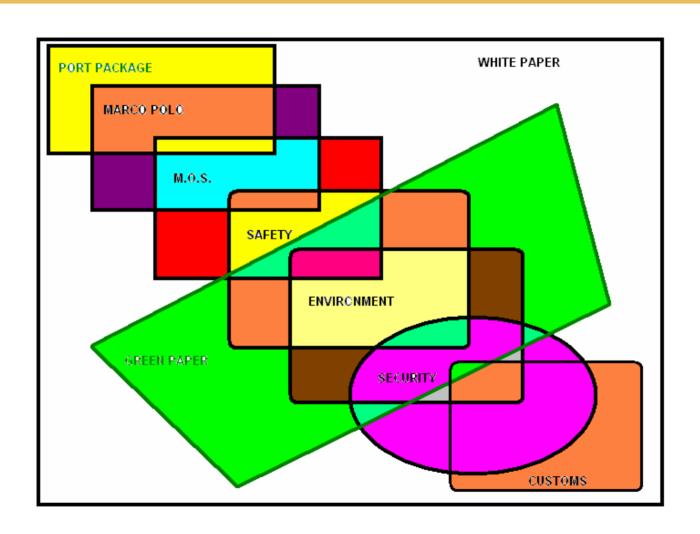
ANNUAL

CONFERENCE

M

200

ECONOMISTS





#### SAFETY-ENVIRONMENT

Challenges and Trends in Shipping:

Markets Investments and Policies

ANNUAL
A
CONFERENCE
M
2007

GLOBAL CHALLENGES:

- How to build and maintain ships that are:
  - safe and environment-friendly
  - economically viable and competitive
- How to attract and train seafarers who are able to cope with the ever increasing demands of the profession
- How to formulate efficient and effective regulation to achieve the above goals



#### Regulation coverage

Challenges	
and Trends	in
Shipping:	

Markets Investments and Policies

ANNUAL

CONFERENCE

IVI

2007

- Training requirements for seafarers
- Certification of seafarers
  - Fitness for work, use of alcohol and drugs, fatigue
- Working and living conditions onboard
- Common working language between crew members
- Ship equipment and human-machine interface
- Ship-to-ship and ship-toshore communication
- Vessel traffic services and vessel traffic management information services
- Ballast water management

- Global maritime distress and safety systems
- Ship reporting systems
- Port and harbor safety regulations
- Navigation and pilotage
- Loading, stowage and discharging
- Fire-fighting
- Search and rescue
- Environmental protection
- Design of ships
- Construction of ships
- Maintenance of ships
- Recycling of ships
- Survival capability of ships
- Emergency and evacuation procedures
- Maritime security



# Players in the regulation game

Challenges and Trends in Shipping:

Markets Investments and Policies

ANNUAL
A
CONFERENCE
M
2007

MAIN PLAYER:

#### IMO

- SOLAS
- STCW
- ISM Code
- HSC Code
- ISPS Code
- FSA
- GBS
- Etc etc

#### OTHER PLAYERS:

- European Union
- Flag states
- Port states
- Shipping companies
- Ports
- IACS and classification societies
- ILO and labor organizations
- Shippers
- Shipyards
- P&I clubs
- Environment groups
- Etc, etc, etc!



#### Observations

Challenges and Trends in Shipping:

Markets Investments and Policies

ANNUAL

CONFERENCE

M

200

Too many policies



Too many players





#### Potential problems

and Trends in

and Policies

- **Over-regulation**
- **Patchwork regulation**
- **Overlaps in regulation**
- **Gaps in regulation**
- Inconsistencies in regulation



#### Criticism by shipping industry

Challenges and Trends in Shipping:

Markets Investments and Policies

ANNUAL
A
CONFERENCE
M
2007

- Reduction of competitiveness
- Non-level playing field
- Lack of comprehensive safety regime

Dilemma: Develop new rules or enforce old ones?



#### An example

Challenges and Trends in Shipping:

Markets Investments and Policies

ANNUAL
A
CONFERENCI
M
2007

- New Common Structural Rules (CSR) for Tankers and Bulk Carriers
- IACS: Safety will increase
- UGS: Safety will go down!
  - and more CO2 will be produced
- Issue wide open (but new rules apply!)
- Environmental impact of new rules unknown



#### More examples

Challenges and Trends in Shipping:

Markets Investments and Policies

ANNUAL
A
CONFERENCE
M
2007

- HOW SAFE IS SAFE ENOUGH?
- WHAT PRICE SAFETY?

(incredible as it may seem)

 neither the IMO, nor any other rule-making body has yet answered these questions



## From IMO's FSA guidelines

Challenges and Trends in Shipping:

Markets Investments and Policies

ANNUAL
A
CONFERENCE
M
2007

#### Maximum annual tolerable risk of death

- For crew members: 1/1,000
- For passengers: 1/10,000
- For third parties or public ashore: 1/10,000

**Negligible risk: 1/1,000,000** 

THESE ARE INDICATIVE FIGURES ONLY



## Comparison to air transport

Challenges and Trends in Shipping:

Markets Investments and Policies

ANNUAL
A
CONFERENCE
M
2007
E

- Chance of being involved in a fatal air crash: 1 in 8 million per flight on 1<sup>st</sup> world airlines (Barnett, 2006)
- Take a flight every day: expected time until death: 22,000 years
- Take 8 flights a year: annual risk of death is 1/1,000,000
- Why is a ship passenger allowed an annual risk 100 times higher? (1/10,000)
- Are maritime transport travelers second class citizens?



#### **Goal Based Standards**

Challenges and Trends in Shipping:

Markets Investments and Policies

ANNUAL
A
CONFERENCE
M
2007

- Proposed by Greece-Bahamas-IACS (2004)
- Move from 'prescriptive' to 'goal based' regulation
- Discussion currently under way at IMO
- Big challenge: how GBS should proceed so that new 'goal based' rules are better than old ones



# Putting a price on things

and Trends in

and Policies



- **ON HUMAN LIFE:**
- \$3 million (IMO)

- ON OIL POLLUTION **DAMAGE:**
- Issue wide open (under discussion at IMO and elsewhere)
- **IACS** circles suggest \$60,000/tonne



# What \$60,000/tonne means

Challenges and Trends in Shipping:

Markets Investments and Policies

ANNUAL

CONFERENCE

**M** 

200 i

•	Prestige 4.9 billion dollars	(1,633)*
•	Braer 6 billion dollars	(2,000)*
•	Torrey Canyon 8.5 billion dollars	(2,833)*
•	Haven 9.9 billion dollars	(3,300)*
•	Amoco Cadiz 16 billion dollars	(5,333)*
•	Castillo de Bellver 17.8 billion dollars	(5,933)*
•	Atlantic Empress 19.7 billion dollars!	(6,567)*

\*equivalent deaths (assuming \$3 million/fatality)



#### In conclusion

Challenges and Trends in Shipping:

Markets Investments and Policies

ANNUAL

CONFERENCE

**M** 

2007 -  Should some maritime policy makers reformat their disk?





# My personal opinion

Challenges and Trends in Shipping:

Markets Investments and Policies

ANNUAL
A
CONFERENCE
M
2007

Not a bad idea!

And that's the biggest challenge of them all



## Thank you very much!

Challenges and Trends in Shipping:

Markets Investments and Policies

ANNUAL
A
CONFERENCE
M
2007

#### **Coordinates**

- hnpsar@deslab.ntua.gr
- www.martrans.org

