ΠΑΡΑΡΤΗΜΑ Ι

ΠΗΓΕΣ ΚΟΣΤΟΥΣ ΜΕΤΑ ΑΠΟ ΠΕΤΡΕΛΑΪΚΗ ΡΥΠΑΝΣΗ

Accident Costs
- Value of Lost Oil
- Value of Lost Tanker
- Tanker Repair Costs
- Tanker Salvage Costs

Incident Report Filing Costs
- State
- National
- Insurer
- International Fund

Initial Cleanup Costs
- Consultant Fees (Cleanup Strategy Planning)
- On-Scene Coordinator Fees
- Command Center
- Communications/Computer Hookups Costs

Mechanical Containment and Recovery Costs
- Booms/Skimmers Rental Fees
- Labor Costs (salaries, benefits)
- Protective Clothing and Personal Equipment
- Logistical Costs (e.g., food, lodging, potable water, sanitation)
- Equipment Repair and Replacement Costs
- Equipment Depreciation Costs
- Vacuum Pump Rentals
- Oil Storage/Separation Fees
- Oil and Oily Waste Disposal Costs
- Disposal Permit Costs

Dispersant Use Costs
- Dispersant Permit Costs
- Purchase of Dispersant Chemicals
- Application Equipment Rental Fees
- Equipment Repair and Replacement Costs
- Equipment Depreciation Costs
- Labor Costs (salaries, benefits)
- Logistical Costs (e.g., food, lodging, potable water, sanitation)
- Protective Clothing and Personal Equipment

Bioremediation Costs
- Permitting Costs
- Specialist Consultant Costs
- Chemical Fertilizer Costs
- Microbial Mixture Costs
- Application Equipment Rental Fees
- Labor Costs (salaries, benefits)
- Logistical Costs (e.g., food, lodging, potable water, sanitation)
- Protective Clothing and Personal Equipment

In-situ Burning Costs
- Permitting Costs
- Specialist Consultant Fees
- Fireproof Boom Costs
- Ignition Equipment Rental Fees
- Equipment Repair and Replacement Costs
- Labor Costs (salaries, benefits)
- Logistical Costs (e.g., food, lodging, potable water, sanitation)
- Air Quality Testing Costs
- Protective Clothing and Personal Equipment

Manual Shoreline Cleanup Costs
- Labor Costs (salaries, benefits)
- Logistical Costs (e.g., food, lodging, potable water, sanitation)
- Protective Clothing and Personal Equipment
- Heavy Equipment Rental Fees
- Equipment Repair and Replacement Costs
- Equipment Depreciation
- Disposable Equipment Costs (e.g., sorbents)
- Long-Term Monitoring Costs

Additional Costs for Any Cleanup Method
- Cleanup Worker Injury and Health Impairment Claims
- Worker Insurance and Compensation Costs
- Damage Costs from Cleanup Work (e.g., damage to property during cleanup work)
- Public and Media Relations

Wildlife Rehabilitation Costs
- Rescue and Rehabilitation Center Construction Costs
- Equipment Costs
- Equipment Repair and Replacement Costs
- Equipment Depreciation Costs
- Consumable Supply Costs (e.g., detergents, feeding syringes)
- Animal Nutritional Costs
- Veterinary Consultation Costs
- Veterinary Supplies (e.g., medicines, syringes)
- Non-volunteer Labor Costs (salaries, benefits)
- Post-rehabilitation Animal Tracking Research Costs

Natural Resource Damage Assessment
- Restoration Costs (e.g., replanting damaged wetland plant species, restocking fish)
- Diminution of Value Costs (reduction of services due to oil spill damages)
- Damage Assessment Costs (expert evaluation of spill damage)
- Contingent Valuation Surveying Costs (determining the non-use values of impacted resources)

Research Costs
- Research Consulting Costs
- Research Team Labor Costs (salaries, benefits)
- Research Equipment and Incidental Costs
- Long-Term Monitoring Costs
- Research Publication Costs

Property, Economic, and Environmental Damage Claims
- Defense Lawyers' Fees
- Other Legal/Litigation Costs
- Settlement Costs

Fines and Penalties
- Legal Fees
- Criminal Fines on the Polluter
- Fines for Negligence During Cleanup Operations
- Civil Penalties

ΠΑΡΑΡΤΗΜΑ ΙΙ

CLEAN UP TECHNIQUES

Technique	BasicStrategy	Procedures	Advantages	Disadvantages
Mechanical Containment and Recovery	Corral as much oil as possible and remove it from the water surface where it floats, for spills in calm wate or near sensitive areas.	• Deploy boom to contain oil slick • Collect oil with vacuum hoses and skimmers • Transfer collected oil/water to tanks that separate oil and water	• Causes the least environmental impact by preventing oil from mixing with the water • Prevents oil from reaching shoreline	• Very inefficient (often 15% of oil recovered) • Very time consuming and expensive • Booms must be deployed quickly to contain oil slick • Does not work well in rough water • Requires large numbers of personnel and equipment
Dispersants	Application of chemicals to break up oil into tiny droplets; smaller droplets more easi biodegraded; dilute toxicity; for spills in turbulent water, aw from sensitive habitats	• Determine appropriate chemical • Apply chemicals from boats or airplanes	• Quickly removes oil from water surface, reducing danger to wildlife and coastline • Less expensive than mechanical methods • Reduces need for shoreline cleanup • Works well in rough water	• Narrow window of effectiveness • Chemicals may be toxic to marine life • Requires approval of government authorities • Limited usefulness in calm waters • Requires planes or boats for application
In-Situ Burning	Concentrate and ignite oil to burn off as much as possible; for spills on ice orcalm, open water, away from populated areas	• Concentrate oil with fireproof booms • Ignite oil with flares or lasers deployed by helicopters • Allow fire to burn until fuel runs out or conditions change	• Extremely effective, usually burning off 80-98% of oil • Prevents oil from reaching shoreline • Prevents oil from mixing into water column	• Causes air pollution; cannot be used near populated areas • Few workers trained in technique • Can be difficult to get government approval • Burning leaves tarry residue
Doing Nothing (Natural Cleaning)	Allowing oil to break down naturally; for spills on open water, away from shoreline, or spills near shorelines exposed to significant wave action	Oilweathers naturally, breaking down physically and chemically with turbulent wave action and effects of sunlight.	• Inexpensive, requires no equipment or personnel except for monitoring • Often very effective • Avoids environmental damages associated with invasive shoreline techniques	• Oil may reach sensitive areas • Often perceived by public as being irresponsible • Difficult to predict how weather, currents, and wave action will act on spilled oil

ΠΑΡΑΡΤΗΜΑ ΙΙΙ

RISK ASSESSMENT PROCESS

1. SELECTION OF SUBSYSTEM
2. DEFINITION OF SCENARIO/PROCESS UNDER INVESTIGATION
3. RISK ANALYSIS AND HAZARD IDENTIFICATION
4. DO HAZARDS NEED FURTHER ACTION
    - IF YES, QUANTIFY ASSOCIATED RISK USING RISK MATRICES
        i. IF RISK ASSOCIATED > ALARP
            1. TAKE MEASURES TO REDUCE ASSOCIATED RISK AND RE-QUANTIFY
        ii. IF RISK ASSOCIATED < ALARP
            1. CARRY OUT COST-BENEFIT ANALYSIS TO DECIDE ON FURTHER ACTION
            2. DEVELOP REPORTS & RECORD RESULTS IN HAZARDS REGISTER
            3. END PROCEDURE AND PROCEED TO NEXT SUBSYSTEM
    - IF NOT, DEVELOP REPORTS & RECORD RESULTS IN HAZARDS REGISTER
        i. END PROCEDURE AND PROCEED TO NEXT SUBSYSTEM

SHIPPING COMPANY SYSTEMS & SUB SYSTEMS

Τα παρακάτω είναι τα **κύρια συστήματα** τα οποία είναι ευθέως συνδεδεμένα με τις λειτουργίες/δραστηριότητες του πλοίου και οι οποίες περιλαμβάνουν μία σειρά από κινδύνους και ρίσκα:

1. CARGO & WATER BALLAST OPERATIONS
2. MOORING OPERATIONS
3. SAFETY & EMERGENCY PREPAREDNESS
4. NAVIGATION
5. MAINTENANCE & REPAIRS
6. MANAGEMENT OF CHANGE
7. ENVIRONMENTALLY RELATED OPERATIONS
8. SECURITY OPERATIONS

Τα επόμενα υποσυστήματα είναι όχι ευθέως συνδεδεμένα με τις λειτουργίες/δραστηριότητες του πλοίου:

9. RECRUITMENT & MANAGEMENT OF SEA GOING PERSONNEL
10. RECRUITMENT & MANAGEMENT OF OFFICE PERSONNEL
11. INCIDENT INVESTIGATION AND ANALYSIS
12. MEASUREMENT, ANALYSIS AND IMPROVEMENT

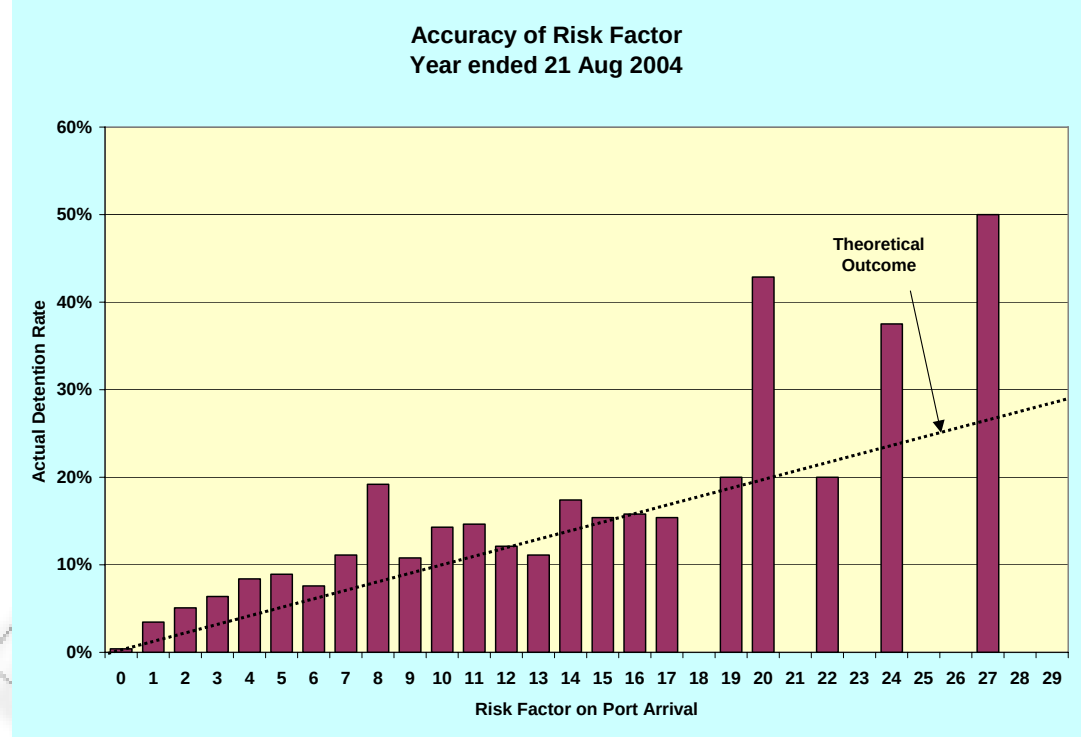
ΠΑΡΑΡΤΗΜΑ IV

ΜΕΘΟΔΟΣ ΥΠΟΛΟΓΙΣΜΟΥ TARGET FACTOR

Selection of ships (target factor displayed on SIReNaC)

Υπολογίζεται δίνοντας προτεραιότητα στην επιθεώρηση εκείνων των πλοίων που έχουν τα εξής χαρακτηριστικά:

- πλοία τα οποία δεν έχουν επιθεωρηθεί τους τελευταίους έξι μήνες
- πλοία των οποίων τα πιστοποιητικά δεν έχουν εκδοθεί από έναν αναγνωρισμένο νηογνώμονα
- πλοία τα οποία φέρουν σημαία η οποία είναι καταταγμένη στη μαύρη λίστα
- πλοία τα οποία τους δόθηκε η άδεια να αποπλεύσουν από το προηγούμενο λιμάνι προκειμένου να διευθετήσουν παρατηρήσεις οι οποίες είναι ακόμα ανοικτές
- πλοία τα οποία κρατήθηκαν σε προηγούμενο λιμάνι ή λιμάνια
- πλοία των οποίων η κλάση ανήκει στην κατηγορία με σχετιζόμενες παρατηρήσεις πάνω από το μέσο όρο
- πλοία ηλικίας άνω των 13 ετών
- πλοία με target factor μεγαλύτερο του 50 στο SIReNaC information system



The calculation of the Target Factor is divided into two parts:

1 **Generic Factor** - based on elements of the ships profile.

2 **History Factor** - based on the ships inspection history in the Paris MOU.

1. GENERIC FACTOR

The Generic Factor for an individual ship is calculated by adding together the applicable elements of its profile according to the elements below:

Targeted flag

A flag whose number of detentions in the last three years exceed its allowable limit based on a fixed yardstick (=7%). Graduated by increasing yardstick in steps of 3%. For example "medium to high risk" means detentions exceeded allowable limit using a yardstick of 10% (for detention % ref. Paris MOU Annual report)

Medium risk	(yardstick + 3%)	TF +4
Medium to High risk	(yardstick + 6%)	TF +8
High risk	(yardstick + 9%)	TF +14
Very High risk	(yardstick +12%)	TF +20

Targeted ship type TF +5

(ie liable to expanded inspection)

i Bulk carrier more than 12 years old.

ii Gas Carrier more than 10 years old.

iii Chemical Tanker more than 10 years old.

iv Oil tanker GT>3000 and more than 15 years old.

v Passenger ship/ro-ro ferry more than 15 years old (other than ro-ro ferries and HS passenger craft operating in regular service under the provision of Council Dir. 1999/35/EC)

Non - EU recognised classification society TF +3

A class society not appearing on the list of recognised societies published by EC Commission. If no class is recorded in the database (other than withdrawal/ suspension of class for safety reasons) the ship will be assumed to be classed with an EU recognised class society.

Ships more than 12 years old

Graduated for non-targeted ship types (ref. above) and passenger ships Age:

>25 years	TF +3
21-24	TF +2
13-20	TF +1

Flag State has not ratified all conventions TF +1

Flag states who have not ratified all main conventions. (Ref. Relevant instruments in Paris Memorandum text, ratification information can be found on www.imo.org & www.ilo.org)

Targeted Class
Class with a 3-yr average record of detentions above the average class detention value using the excess of average rate as yardstick. A classification society whose number of detentions with class related deficiencies in the last three years exceeds the average class detention rate. Graduated by increasing the "excess of average" in steps of 2%. E.g. the overall class detention rate is 2.1% and the detention rate of a classification society is 4.1%, the "excess of average" value is 2%. (for detention % ref. Paris MOU Blue Book)

≤0%	TF 0
0% - 2%	TF +1
>2% - 4%	TF +2
>4%	TF +3

The Generic Factor is updated when the particulars of the ship change or the status of its existing flag or class change.

2. HISTORY FACTOR

The History Factor is applied to the Generic Factor to reflect the actual condition of the ship found by inspection. The History Factor is calculated by applying the elements below to each Paris MOU inspection of the ship carried out *in the previous 12 months*

Entering a region port for the first time in the last 12 TF +20
No inspection recorded in the database in the last 12 months.

Not inspected in last 6 months TF +10
No inspection recorded in the database in the last 6 months.

Detained TF +15

Number of deficiencies:

0	TF -15
1-5	TF 0
6-10	TF +5
11-20	TF +10
21+	TF +15

Outstanding deficiencies from last inspection
The value for the outstanding deficiencies is applied only in respect of the latest inspection.

for each listed action taken "rectify deficiency at next port" or "Master instructed to rectify deficiency before departure" and for every two listed action taken "rectify deficiency within 14 days" and / or "other (specify in clear text)"	TF +1
in case "all deficiencies rectified" is noted on the report	TF -2

The History Factor is updated at the end of each day.

Overall Target Factor

The Overall Target Factor is calculated by adding the Generic and History Factor but *cannot be less than the Generic Factor.*

The overall Target Factors are re-calculated at the end of each day.

***) The TF is in use within the Paris MOU on PSC as a tool for selecting ships eligible for an inspection only. The TF is not an indication of the quality of the ship.**

Example

Date :20-07-2002
Vessel :Paris MOU
Flag :Honduras
Type :Passenger ship
Class :Honduras International Naval Survey and Inspection Bureau
Year build :1958
Honduras detention % : 27.71%
Average Class detention % : 2.1%
HINSIB detention % : 13.04%

Inspection history :

Ghent	Belgium	10-07-2001	9 Deficiencies
Rotterdam	The Netherlands	11-09-2001	5 Deficiencies
Hamburg	Germany	15-01-2002	16 Deficiencies
Genoa	Italy	04-07-2002	20 Deficiencies

Generic Factor

Targeted flag	Very High Risk	+20
Targeted ship type	Passenger ship	+5
Non - EU recognised classification society	HINSIB	+3
Ships more than 12 years old		+3
Flag State has not ratified all conventions	LL Prot.88, SOLAS Prot.88, ILO 147	+1
Targeted Class	Excess of average 10.94%	+3
		35

History Factor

Entering a region port for the first time in the last 12 months	0
Not inspected in last 6 months	0
Detained	0
Number of deficiencies	

Rotterdam	0
Hamburg	+10
Genoa	+10
Outstanding deficiencies from last inspection	
“Master instructed to rectify deficiency before departure”	+8
“rectify deficiency within 14 days”	+5
“other (specify in clear text)”	+1
	34

Overall Target Factor

Generic Factor	35
History Factor	34
Overall Target Factor	**69**

ΠΑΡΑΡΤΗΜΑ V

ΕΠΙΜΕΡΙΣΜΟΣ ΛΕΙΤΟΥΡΓΙΚΟΥ ΚΟΣΤΟΥΣ ΓΙΑ ΔΙΑΦΟΡΕΤΙΚΑ ΕΠΙΠΕΔΑ ΔΙΑΧΕΙΡΙΣΗΣ

ΔΕΞΑΜΕΝΟΠΛΟΙΟ SUEZMAX

Common practice			Good practice		
Component	**Quarter total**	**Annual total**	**Component**	**Quarter total**	**Annual total**
Deck stores	11 500	46 000	Deck stores	15 500	62 000
Engine stores	11 250	45 000	Engine stores	14 050	56 200
General stores	7250	29 000	General stores	11 250	45 000
Total purchasing	**30 000**	**120 000**	**Total purchasing**	**40 800**	**163 200**
Lubricants	**34 275**	**137 100**	**Lubricants**	**41 700**	**166 800**
D/D reserve	24 475	97 900	D/D reserve	24 475	97 900
Survey	5000	20 000	Survey	5 500	22 000
R&M	22000	88 000	R&M	26 000	104 000
Spares	25000	100 000	Spares	52 500	210 000
Total technical	**76475**	**305 900**	**Total technical**	**108 475**	**433 900**
Administration	**32 000**	**128 000**	**Administration**	**35 000**	**140 000**
∑	**172 750**	**691 000**	∑	**225 975**	**903 900**
Crew wages	186 800	747 200	Crew wages	186 800	747 200
Crew travel/victualling	48 500	194 000	Crew travel/victualling	48 500	194 000
Total crew	**235 300**	**941 200**	**Total crew**	**235 300**	**941 200**
Insurance	**106 125**	**424 500**	**Insurance**	**106 125**	**424 500**
Total	**514 175**	**2 0656 700**	**Total**	**567 400**	**2 269 600**
Daily rate	US$5 635		**Daily rate**	US$6 218	
NB. Crew complement: 28 (4 senior officers/ 7 junior officers/ 17 ratings) Crew nationality: 5 British senior officers + 23 Indian juniors/ratings					

CONTAINERSHIP

Common practice			Good practice		
Component	**Quarter total**	**Annual total**	**Component**	**Quarter total**	**Annual total**
Deck stores	6 500	26 000	Deck stores	7 250	29 000
Engine stores	6 650	26 600	Engine stores	7 500	30 000
General stores	6 250	25 000	General stores	7 625	30 500
Total purchasing	**19 400**	**77 600**	**Total purchasing**	**22 375**	**89 500**
Lubricants	**12 000**	**48 000**	**Lubricants**	**17 500**	**70 000**
D/D reserve	12 000	48 000	D/D reserve	18 000	72 000
Survey	3 000	12 000	Survey	4 000	16 000
R&M	10 000	40 000	R&M	13 200	52 800
Spares	18 500	74 000	Spares	20 000	80 000
Total technical	**43 500**	**174 000**	**Total technical**	**55 200**	**220 800**
Administration	**22 750**	**91 000**	**Administration**	**28 000**	**112 000**
∑	**97 650**	**390 600**	∑	**123 075**	**492 300**
Crew wages	118 200	472 800 128 400	Crew wages	118 200	472 800 128
Crew travel/victualling	32 100	**601 200**	Crew travel/victualling	32 100	400 **601 200**
Total crew	**150 300**		**Total crew**	**150 300**	
Insurance	**51 025**	**204 100**	**Insurance**	**51 025**	**204 100**
Total	**298 975**	**1 195 900**	**Total**	**324 400**	**1 357 600**
Daily rate	US$3 276		**Daily rate**	US$3 719	
NB. Crew complement: 21 (4 senior officers/ 7 junior officers/ 10 ratings) Crew nationality: All Indian					

ΠΑΡΑΡΤΗΜΑ VI

ΚΟΣΤΟΣ ΣΥΜΜΟΡΦΩΣΗΣ ΜΕ ΤΟΥΣ ΚΑΝΟΝΙΣΜΟΥΣ ΠΕΡΙΒΑΛΛΟΝΤΙΚΗΣ ΠΡΟΣΤΑΣΙΑΣ

Environmental compliance costs (USD)			
	66 000 DWT Containership (4800 TEU)	150 000 DWT Bulk Carrier	280 000 DWT Oil Tanker
Daily Ship Costs (see Appendix A)			
Daily Operating Cost	7 212	6 432	8 747
Total Daily Fixed Cost	23 431	17 326	29 102
MARPOL Capital Costs (new/replacement cost, assumed equipment life span of 15 yrs.)			
Oily-Water Separator	10000	10000	10000
15 ppm. Monitor	1000	1000	1000
Incinerator	45000	45000	45000
Annex VI equipment (proposed)	*50000*	*50000*	*50000*
sub-total	56000	56000	56000
Capital Costs per year	**4 655**	**4 655**	**4 655**
Capital Costs per day	13	13	13
Capital Costs per day (w/ Annex VI equipment)	24	24	24
Other MARPOL Fixed Costs (per year)			
Filters	2000	2000	2500
Maintenance OWS	1000	1300	1600
Maintenance OWS system pipes, valves and tanks	1530	1000	780
Maintenance Incinerator	1000	1000	1000
Maintenance Annex VI	*1500*	*1500*	*1500*
Record-keeping	14700	14700	18000
Training	2850	2850	3600
MARPOL fixed costs per year	**23080**	**22850**	**27480**
MARPOL fixed costs per day	63	63	75
MARPOL fixed costs per day (w/ Annex VI)	67	67	79
Waste and Ballast Management costs/year			
Delay caused by Oily Waste discharge	n/a*	n/a*	5000*
Garbage discharge (~70/m3 – part incinerated)	3 322	767	1 278
Oily Bilge Water (~50 USD/m3, partly processed through OWS)	0	13 140	33 641
Sludge/Slops (~50 USD/m3, partly processed through incinerator)	54 933	13 980	131 179
Total Waste Costs/year	**58 254**	**27 886**	**166 097**
Total Waste Costs/day	160	76	455
Ballast/day, @.20 USD m3, 40-day voyage	99	308	172
Total Waste and Ballast Costs/day	259	384	627
* Industry sources have indicated that delays caused by off-loading oily waste are generally insignificant – however, when they do occur because of insufficient facilities or queuing for access to facilities, they can grow quickly.			
Certification Costs			
Annex I certification per year	335	335	1370
Annex IV certification per year	87	87	87
Certification Costs per day	1	1	4
Anti-fouling Convention: TBT-free painting			
TBT painting	218 489	173 952	334 048
TBT-free paint sur-cost	63 158	38 172	95 388
Hull washing (1 every 2.5 years)	7 000	10 000	10 000
Anti-fouling Convention Compliance Costs/day	38	26	58
Total Estimated Compliance Costs per Day	**248**	**164**	**558**
*As a percentage of Daily **Operating** Costs*	***3.4%***	***2.6%***	***6.4%***
*As a percentage of Daily **Fixed** Costs*	***1.1%***	***0.9%***	***1.9%***

ΠΑΡΑΡΤΗΜΑ VII

ΑΤΥΧΗΜΑΤΑ ΑΝΟΙΚΤΑ ΠΡΟΣ ΔΙΕΡΕΥΝΗΣΗ ΜΕΧΡΙ ΤΟ ΣΕΠΤΕΜΒΡΙΟ ΤΟΥ 2005

Ship	Place of Incident	Date of Incident
N°7 Kwang Min	Republic of Korea	24/11/05
N°11 Hae Woon	*Republic of Korea*	*22/07/04*
Jeong Yang	*Republic of Korea*	*23/12/03*
Kyung Won	*Republic of Korea*	*12/09/03*
Duck Yang	*Republic of Korea*	*12/09/03*
Victoriya	*Russian Federation*	*30/08/03*
Hana	*Republic of Korea*	*13/05/03*
Buyang	*Republic of Korea*	*22/04/03*
Incident in Bahrain	*Bahrain*	*03/03*
Spabunker IV	*Spain*	*21/01/03*
Prestige	*Spain*	*13/11/02*
Incident in the United Kingdom	*United Kingdom*	*29/09/02*
Incident in Guadeloupe	*Guadeloupe*	*30/06/02*
Zeinab	*United Arab Emirates*	*14/04/02*
Singapura Timur	*Malaysia*	*28/05/01*
Baltic Carrier	*Denmark*	*29/03/01*
Natuna Sea	*Indonesia*	*03/10/00*
Incident in Sweden	*Sweden*	*23/09/00*
Alambra	*Estonia*	*17/09/00*
Incident in Spain	*Spain*	*05/09/00*
Slops	*Greece*	*15/06/00*
Al Jaziah 1	*United Arab Emirates*	*24/01/00*
Erika	*France*	*12/12/99*
Dolly	*Caribbean*	*05/11/99*
Pontoon 300	*United Arab Emirates*	*07/01/98*
Evoikos	*Singapore*	*15/10/97*
Katja	*France*	*07/08/97*
Plate Princess	*Venezuela*	*27/05/97*
Nissos Amorgos	*Venezuela*	*28/02/97*
Kriti Sea	*Greece*	*09/08/96*
Incident in Germany	*Germany*	*06/96*
Sea Empress	*United Kingdom*	*15/02/96*
Yuil N°1	*Republic of Korea*	*21/09/95*
Yeo Myung	*Republic of Korea*	*03/08/95*
Sea Prince	*Republic of Korea*	*23/07/95*
Iliad	*Greece*	*09/10/93*
Keumdong N°5	*Republic of Korea*	*27/09/93*
Braer	*United Kingdom*	*05/01/93*
Aegean Sea	*Spain*	*03/12/92*
Vistabella	*Caribbean*	*07/03/91*

ΠΑΡΑΡΤΗΜΑ VIII

SAMPLE SHIP CAPITAL AND OPERATING COST BUDGETS (1999 DATA) AND SHIP CHARACTERISTICS

	66 000 DWT containership (4800 TEU)	150 000 DWT bulk carrier	280 000 DWT oil tanker
Year built	1992	1992	1882
Size (DWT)	66000	150000	265000
SHIP BUDGET			
Replacement Cost	71 218 866	47 835 843	89 378 355
Annual Capital Cost	5 919 893	3 976 237	7 429 356
Daily Capital Cost	**16 219**	**10 894**	**20 354**
Crew Cost (ITF Crew)	997 875	828 206	1 094 467
Lubes & Stores	355 875	314 381	488 764
Maintenance & Repair	686 750	378 495	448 845
Insurance	472 375	630 391	904 461
Administration	119 625	196 194	256 169
Fixed Annual Operating Cost	2 632 500	2 347 667	3 192 706
Fixed Daily Operating Cost	**7 212**	**6 432**	**8 747**
Total Annual Fixed Cost	8 552 393	6 323 904	10 622 062
Total Daily Fixed Cost (break-even point for Timecharter rate)	**23 431**	**17 326**	**29 102**
SHIP WASTE/BALLAST PRODUCTION			
HFO consumption (tonne/day)	170	60	80
HFO Sludge Production (m3/day)	2.86	1.01	1.34
Bilge Water Production (m3/day)	1.10	1.70	3.00
Tank Washing (6000 m3: washing 3-4 holds/year) m3/day			16.44
Total Slops/sludge Produced/day	3.01	1.25	7.52
Ballast (m3 per voyage -ballast voyage for tanker)	19 800	61 500	68 900
Other Garbage (m3/day)	0.16	0.05	0.07

Source: US ACE 2000 (Economic Guidance Memo), EMARC Project, Drewrys.