AN EVALUATION OF THE INSPECTION SYSTEM FOR VESSELS OPERATING IN THE LOCAL AND OFFSHORE WATERS OF NEW SOUTH WALES

By

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DISCLAIMER

The views expressed in this paper are those of the author and do not necessarily reflect the views and policies of the Maritime Services Board of NSW or the MSB Waterways Authority.

INTRODUCTION

This paper examines the availability of data that can be used as indicators of the effectiveness of the vessel inspection system in New South Wales, and where such data is available, use it to identify which parts of the inspection system are the most significant in ensuring the safety of vessels.

Inspections may be described as a particular way of controlling quality. The 1989 New Zealand Findings of the Review of the Maritime Transport Division of the Ministry of Transport (Ref 1) described their government inspection system in this uncharitable way:

> " *It assumes the hazards are due to unsafe equipment or unqualified personnel. It therefore aims to independently inspect each item of equipment throughout its life and to examine each person responsible for making and using the equipment. As proof of the inspection and examination, it issues certificates which purport to prove the product is safe or the person competent*"

Those findings went on to describe how the lack of resources prevent this level of inspection from being applied uniformly to all vessels, giving rise to different levels of intervention ranging from full inspections for some, to advice and encouragement for private organisations such as the Yachting Federation.

The findings also encapsulated the criticism levelled at the traditional inspection systems, namely that inspections either duplicate a vessel owner's own safety effort, or else, act as a poor substitute for the safety systems which the owner should have in place. Both cases were cited as being disincentives from encouraging vessel owners from having their own proper in-house controls, and in their worst form, did nothing to prevent some owners from doing "*the minimum possible to get past the inspector*", and if necessary, to engage in the deliberate concealment of faults.

Whatever the validity of the above comments, they could just as easily have been describing the vessel inspection system in New South Wales.

Whether the maritime industry is ready for an inspection-free system to ensure the safety of lives on vessels is debatable.

New South Wales has over 140,000 registered vessels, from which 3,000 are selected for full periodic inspections. Two years ago this figure was 5,000 vessels. Whilst the proportion of "inspected" vessels is only about 2 percent, the number of vessels in survey in New South Wales is not insignificant in terms of the size of national fleets or the number of ships in class with various classification societies.

It may be pertinent to ask what is being done in our own backyard to evaluate the impact of inspections as a safety regime. What may be needed is a more rational approach to vessel safety that defines what the particular safety regime such as the present inspection system is trying to achieve and to measure its impact. In fact, much work on the rational approach to vessel safety is being carried out in the more capital intensive and big budget areas. Some work in the small vessel field is being done overseas. At a local level, the allocation of resources to inspections appears to be based largely on past practice, big ship practice, and shaped by the influence of "various action" groups.

This paper looks at what is achievable at the local level given the information we have. The first part of the paper looks at direct safety criteria i.e. casualty data. The second part looks at the availability of indirect criteria which might also be useful, leading to a review of information provided by survey reports on inspected vessels.

SAFETY CRITERIA AND THEIR MEASUREMENT

The vessel inspection system is a particular safety regime. Its evaluation requires criteria for assessing its impact. The effectiveness of marine safety measures in New South Wales has usually been assessed on the basis of casualty data such as the number of deaths or injuries. More sophisticated measures such as the risk (or rate) of death or injury are useful tools for comparing different activities or to make international or State comparisons, but their use in policy decision-making is not widespread. Most policy decisions affecting vessel survey are therefore likely to be based on the subjective evaluation of a very small amount of objective information.

Variables which can be measured directly are those which represent changes in the number or severity of accidents. They have the advantage of being objective measures which lend themselves to scientific analysis. Problems with the measurement of direct safety variables are attributable to: -

(a) the non-reporting of accidents;

(b) bias in accident records due to under-reporting of some categories of accidents;

(c) lack of detailed accident information relating to the exposure level and relevant vessel variables; and

(d) differences between accident record systems of record collecting agencies and changes made within a system over time.

Other "indirect" variables which play a part in the sequence of events leading to accidents or their consequences may also be useful indicators. To be an appropriate measure, an intermediate variable should be: -

* measurable
* related to the accident or its consequence
* relevant to the safety measure being evaluated.

Intermediate variables may be easier to measure and may be more readily available than direct variables. These factors make intermediate variables particularly useful for quick feedback on the effect of a safety measure.

AVAILABILITY OF NEW SOUTH WALES ACCIDENT DATA

The master of a vessel has a legal obligation under section 30G of the Maritime Services Act 1935 to report a vessel accident which resulted in a death or in injury or damage in excess of $100. This obligation is restricted to vessels in enclosed waters and to vessels which are under 30 metres in length.

This accident data has been collected by the Maritime Services Board and summaries have been published in its annual reports. A compilation of the last 10 years of published information is shown in table C1. The data suffers from the serious under reporting of incidents and from the recording incidents more than once. The data collection was computerised in May 1984 and continued to be used until February 1992. A newer system with more effective reporting procedures and data fields is being developed for introduction later in 1992.

TABLE C1: NSW BOATING ACCIDENT STATISTICS *

PERIOD *June-July*	DEATHS	INJURIES	ACCIDENTS	REGISTERED VESSELS
1980-81	12	105	184	89,365
1981-82	12	107	212	93,887
1982-83	12	75	166	94,969
1983-84	12	73	126	98,136
1984-85	31	71	172	101,230
1985-86	20	94	165	103,718
1986-87	5	65	122	128,984
1987-88	#	#	87	139,964
1988-89	13	#	121	133,927
1989-90	13	#	102	152,702
1990-91	15	#	94	141,198

* *Based on Maritime Services Board of N.S.W. Annual Reports*

The number of registered vessels has been used as an indicator of the amount of vessel exposure to risk. As commercial vessels over 25 metres in length, ferries and tugs are exempt from registration, the figure is an under-estimate of the number of vessels, but as these vessels comprise less than 0.2 percent of the total number, their effect on the number of vessels may be ignored. Changes to the lower limits for registration of vessels, and to a major review in 1990 which removed redundant registrations from the list of those registered have led to significant fluctuations of the order of 7 percent in annual registration figures.

The now closed database recorded both recreational and commercial vessel incidents between May 1984 and February 1992 although there are indications that commercial vessel incidents ceased to be recorded on the database after July 1991. This database provides the only readily available source of comprehensive casualty and injury data for New South Wales

vessels. A copy of the current accident reporting form showing the type of data collected and stored is attached to this paper.

Table C3 shows the accident cause-result sequence based on a chart of the International Safety Academy U.S.A. as adapted for this paper. It is the model upon which the subsequent analysis of casualty data is based.

TABLE C3: THE VESSEL ACCIDENT "CAUSE-RESULT" SEQUENCE APPLIED TO THE NSW ACCIDENT DATABASE

BASIC CAUSES	IMMEDIATE CAUSES	ACCIDENTS	RESULTS
PERSONAL FACTORS	ACCIDENT TYPE	INJURY CAUSE	INJURY SEVERITY
1 Lack of knowledge or skill	1 Ignorance of rules	1 Slip or trip	1 Death
2 Improper motivation	2 Non-compliance with local rules	2-4 Falls	2 Hospitalised
	...	5 Struck by object	3 Hospital treatm't
	27 Capsize	6 Oxygen deficiency	4 Medical
	28 Swamped on bar	7 Toxic fumes	5 First aid
	...	8-20 etc	6 No treatment
TECHNICAL OR OPERATIONAL FACTORS		ACCIDENT TYPE	VESSEL DAMAGE
1 Inadequate operating or work standards	37 Main engine failure	1-3 Collision	1 Nil
2 Inadequate design	38 Structural failure	4 Grounding	2 Negligible
3 Inadequate maintenance	39 Steering gear failure	5 Foundering	3 Slight
4 Abnormal use or conditions	...	6 Fire	4 Moderate
	57 Faulty machinery	7 Accident to person	5 Severe
		8-12 etc	6-7 Total loss

RESULTS PART 1:
ANALYSIS OF MSB ACCIDENT DATA

Tables C4 and C5 summarise all the accident data on the now closed MSB accident data-base. The data contains information on 994 accidents including 112 which involved commercial vessels in some way.

TABLE C4: INJURY TYPE BY SEVERITY FOR NSW VESSEL ACCIDENTS BETWEEN MAY 1984 AND FEBRUARY 1992

INJURY TYPE *(FROM MSB ACCIDENT REPORTS)*	NUMBER OF INJURED PERSONS BY SEVERITY OF INJURY *(WITH COMMERCIAL VESSEL RELATED INJURED SHOWN IN BRACKETS)*		
	DEATH	MAJOR INJURY	MINOR INJURY
Slip or fall onboard vessel	2	7	9 (1)
Fall overboard	27	9	14
Struck by object	5	3	12
Oxygen deficiency	2	-	-
Inflicted by other person	-	1	3
Immersion	20 (3)	2	-
Exposure	1	-	-
Fire or explosion	-	2	15 (3)
Struck by vessel	5 (1)	24	17 (1)
Collision	8	23	21 (2)
Struck - submerged object	1	2	2
Rope injury	-	4	6
Other	12 (1)	8	14
Injury type not recorded	12	6	10
TOTAL INJURED	**95 (5)**	**91 (0)**	**123 (7)**

TABLE C5: ACCIDENT CAUSES VERSUS INJURIES FOR NSW VESSEL ACCIDENTS BETWEEN MAY 1984 AND FEBRUARY 1992

IMMEDIATE CAUSE *(FROM MSB ACCIDENT REPORTS WITH NUMBERS INDICATING CAUSAL CODES)*	NUMBER OF INJURED PERSONS BY SEVERITY OF INJURY *(COMMERCIAL VESSEL RELATED IN BRACKETS)*		
	DEATH	MAJOR INJURY	MINOR INJURY
1. Ignorance of rules	2	4	6
4. Breach of collision regulations	-	1	3
5. Poor management practice	3	2	7
6 & 7. Lack of experience or local know.	3	12	12
8. Neglect of published warnings	1	-	-
9. Error of judgement	15	21	20
10. Navigational error	1	2	3
14. No lookout	5 (1)	9	18 (2)
16. Non-exhibiting lights/shapes	-	1	-
17. Collision	-	8	13 (3)
18 & 20. Grounding or broaching	5	-	-
21. Persons outside vessel	2	8	3 (1)
22 & 23. Fire	1	3	3
24. Vessel unsuitable for conditions	2	-	-
27 & 29. Capsize or insufficient stability	23 (2)	6	-
28. Swamped on bar	5	1	1
32. Navigation equipment malfunction	-	1	-
35 & 36. Overloading or improper loading	2	2	-
37 & 57. Main engine or machinery failure	1	3	5 (2)
39. Steering gear failure	-	1	1
45. Explosion	-	1	10 (2)
52. Weather conditions	9	-	8
53. Excessive speed	11	10	5
54. Hazardous waters	12 (1)	5	6
56. Wash	1	3	2

The results shown in Table C5 were analysed in terms of the basic causes for the immediate causes listed in the accident reports by categorising the imediate causes in the manner shown in Table C6. Where the immediate cause could not be attributed to a particular basic cause, the frequency of the event was divided equally among all possible basic causes. The result of this categorisation is shown in Table C7.

TABLE C6: IMMEDIATE VERSUS BASIC CAUSES OF ACCIDENTS FOR NSW VESSELS BETWEEN MAY 1984 AND FEBRUARY 1992

IMMEDIATE CAUSE (FROM MSB ACCIDENT REPORTS)	NUMBER OF ACCIDENTS BY BASIC CAUSE					
	PERSONAL FACTORS		TECHNICAL OR OPERATIONAL FACTORS			
	LACK OF KNOW-LEDGE OR SKILLS	IMPROPER MOTIVA-TION	INAD-EQUATE OPER-ATIONAL STAND-ARDS	INAD-EQUATE DESIGN	INAD-EQUATE MAINTE-NANCE	ABNORMAL USE OR CONDI-TIONS
1. Ignorance of rules						
2. Non-compliance with local rules						
3. Defective rules						
4. Breach of collision regulations						
5. Poor management practice						
6. Lack of experience or 7. local knowledge						
8. Neglect of published warnings						
9. Error of judgement						
10. Navigational error						
14. No lookout						
16. Non-exhibiting lights/shapes						
17. Collision						
18. Grounding or 20. broaching						
21. Persons outside vessel						

IMMEDIATE CAUSE (FROM MSB ACCIDENT REPORTS)	NUMBER OF ACCIDENTS BY BASIC CAUSE					
	PERSONAL FACTORS		TECHNICAL OR OPERATIONAL FACTORS			
	LACK OF KNOW-LEDGE OR SKILLS	IMPROPER MOTIVA-TION	INAD-EQUATE OPER-ATIONAL STAND-ARDS	INAD-EQUATE DESIGN	INAD-EQUATE MAINTE-NANCE	ABNORMAL USE OR CONDI-TIONS
22. Fire-improper procedures						
23. Fire -electrical						
24. Vessel unsuitable for conditions						
25. Vessel unsuitable for area						
27. Capsize						
28. Swamped on bar						
29. Insufficient stability						
32. Navigation equipment malfunction						
33. Neglect of equipment						
35. Improper loading or 36. overloading						
37. Main engine failure 57. or faulty machinery						
38. Structural failure						
39. Steering gear failure						
40. Telegraph/engine control failure						
45. Explosion						
46. Hull leaking						
47. Fouled nets						
48. Improper securing of cargo						
52. Weather conditions						
53. Excessive speed						
54. Hazardous waters						
56. Wash						
Total						

TABLE C7: SUMMARY OF BASIC CAUSES ASSOCIATED WITH NSW VESSEL ACCIDENTS

INJURY CATEGORY	PERCENTAGE OF INJURIES BY BASIC CAUSE					
	PERSONAL FACTORS		TECHNICAL OR OPERATIONAL FACTORS			
	LACK OF KNOWLEDGE OR SKILLS	IMPROPER MOTIVATION	INADEQUATE OPERATIONAL STANDARDS	INADEQUATE DESIGN	INADEQUATE MAINTENANCE	ABNORMAL USE OR CONDITIONS
Commercial Vessel Related Injuries:	%	%	%	%	%	%
4 Fatalities	38	0	50	0	0	12
0 Major injuries	0	0	0	0	0	0
10 Minor injuries	30	20	17	6	27	0
14 Sub-total	**32**	**14**	**26**	**4**	**19**	**4**
Only Recreational Vessels Involved:						
99 Fatalities	54	13	20	1	2	11
104 Major injuries	52	18	18	2	6	4
116 Minor injuries	56	11	18	3	6	7
319 Sub-total	**54**	**14**	**18**	**2**	**5**	**7**
333 All injuries	**54**	**14**	**19**	**2**	**5**	**7**

RESULTS PART 2:
AVAILABILITY OF DATA ON VESSEL DEFICIENCIES

Variables that could be used as indirect safety measures are reports on the unsafe condition of vessels. Inspected vessels are surveyed periodically, and unsafe items or conditions are noted on deficiency reports. While the deficiency reports themselves are not detailed on a computerised database, the serial number of all deficiency reports and the date by which defective items on the report must be rectified are recorded. Computer records of these reports commenced with the implementation of the Commercial vessels Act in July 1987. This information provides an index to an on-going condition survey of all inspected vessels in New South Wales. The information detailed in the actual deficiency reports is a potential indicator of the incidence of vessel defects and of vessel owners' motivations to take due care in terms of the seaworthiness of their vessels.

The collection and analysis of this information was split into three stages. The first stage consisted of a collection and analysis of general deficiency report rates for different categories of vessels. The second stage carried out an in-depth study of one particular category of vessels, seagoing passenger vessels, to establish the type and amount of data that could be extracted from available information. The third stage, which has yet to be completed, will collect samples of information for all categories of vessels to enable comparisons between different categories of vessels to be made.

General Profile of NSW Inspected Vessels

Vessels were categorised into seagoing and sheltered water service categories. Each of these service categories was also divided into small and large vessels on the basis of length. The vessel numbers as at 1-10-1990 for these categorisations are listed in table D1.

Since that date, a significant change has been the deregulation of sheltered water fishing vessels (class 3D and 3E) and non-passenger carrying vessels under 6 metres in length on 12 March 1991. Any analysis of deficiencies of

class 2 and 3 vessels must take the lack of deficiency data for vessels after that date into account. Vessels with dual classes of service are counted in each service class. These dual classes are shown in brackets as they need to be subtracted in later analysis to avoid double counting.

	SEAGOING		NON-SEAGOING	
	SMALL #	LARGE *	SMALL #	LARGE *
PASSENGER	-	75	29	313 (33)
WORKBOAT	64 (9)	111 (34)	136 (14)	63 (11)
FISHING	312	508 (6)	1442	141 (1)
HIRE BOAT	-	-	940 (1)	334 (16)

Under 7.5 metres in length * 7.5 metres or more in length

Table D1 *Number of inspected vessels as at 1-10-1990.*

Incidence of Deficiency Reports

The number of deficiency notices issued for which items had to be rectified in 1990 (or 1989 for small class 3DE vessels) is listed in table D2.

VESSEL GROUP		DISTRIBUTION OF DEFICIENCY REPORTS FOR INDIVIDUAL VESSELS IN GROUP (Number of vessels & percent of group)				
USL CLASS	VESSEL SIZE	0 REPORT	1 REPORT	2 REP'S	3 REP'S	4+ REP'S
1ABC	SMALL	0	0	0	0	0
1DE	SMALL	19 66 %	10 34 %	0	0	0
2ABC	SMALL	38 69 %	15 27 %	2 4 %	0	0
2DE	SMALL	97 80 %	21 17 %	4 3 %	0	0
3ABC	SMALL	245 79 %	60 19 %	7 2 %	0	0
3DE(*)	SMALL	1173 91 %	115 9 %	0	0	0
4E	SMALL	882 94 %	54 6 %	3 0 %	0	0
1ABC	LARGE	32 43 %	33 44 %	8 11 %	2 3 %	0
1DE	LARGE	115 41 %	116 41 %	36 13 %	9 3 %	4 1 %
2ABC	LARGE	44 57 %	30 39 %	2 3 %	1 1 %	0
2DE	LARGE	30 58 %	18 35 %	3 6 %	1 2 %	0
3ABC	LARGE	196 39 %	264 53 %	35 7 %	6 1 %	1 0 %
3DE	LARGE	112 80 %	27 19 %	1 1 %	0	0
4E	LARGE	205 64 %	102 32 %	10 3 %	1 0 %	0

Table D2 *Frequency of deficiency reports issued to individual vessels in 1990 (* 1989 for 3DE vessels).*

SUMMARY OF DEFICIENCY DATA COLLECTED FOR SEAGOING PASSENGER VESSELS INSPECTED BETWEEN 1.10.87 AND 30.9.90

The results of deficiency data collected for all seagoing passenger vessels inspected between 1.10.1987 and 30.9.1990 are shown in figures 5.1 to 5.8. The following notes apply to these figures.

1. The population consists of all 217 seagoing passenger vessels inspected under the New South Wales vessel inspection system over a three year period.

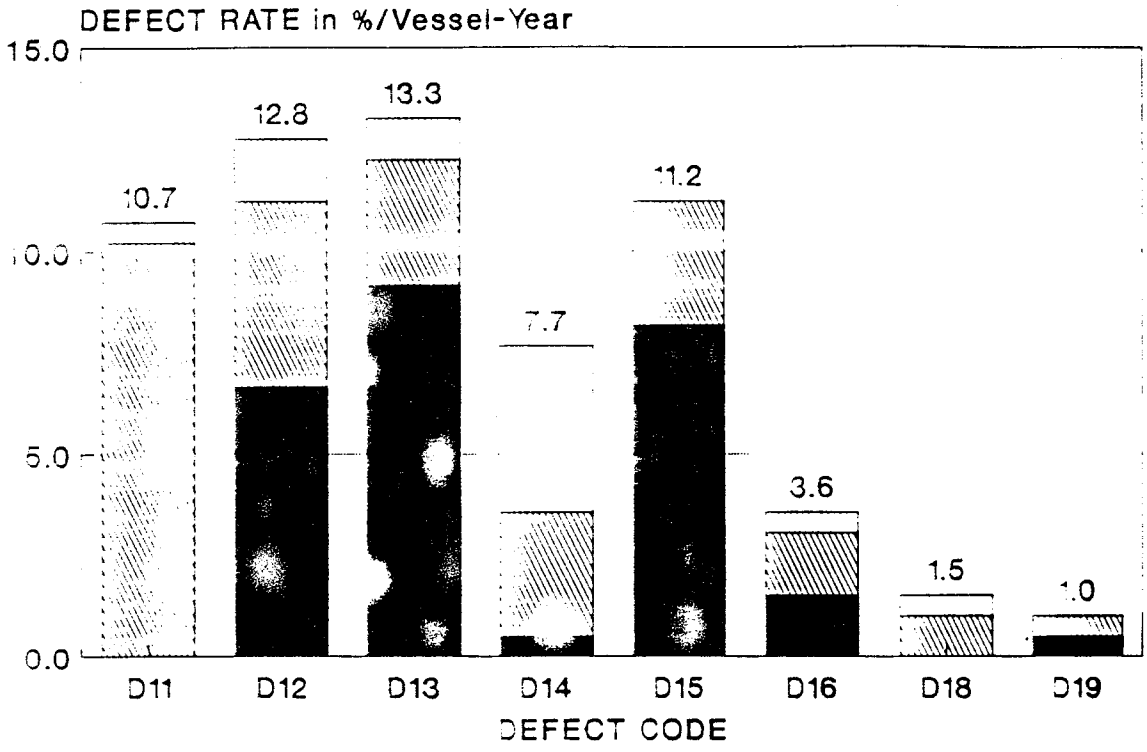
2. The three year study period includes all available deficiency reports issued for seagoing passenger vessels and which were required to be rectified in the 3 year period from 1.10.1987 to 30.9.1990 inclusive.

3. The categorisation of defects is in accordance with the defect codes described in keys to each figure.
   The general category indicated by the *first digit* of the code is :-

   1 = Life saving appliance
   2 = Fire fighting appliance
   3 = Propulsion system
   4 = Structure
   5 = Watertight integrity
   6 = Navigation
   7 = Other miscellaneous equipment
   8 = Information

4. The results are presented as DEFECT RATES in percentage of vessels per year which had at least one deficiency of the type indicated by the code.

Figure 5.1
LIFE SAVING APPLIANCE DEFECT RATES FOR SEAGOING PASSENGER VESSELS



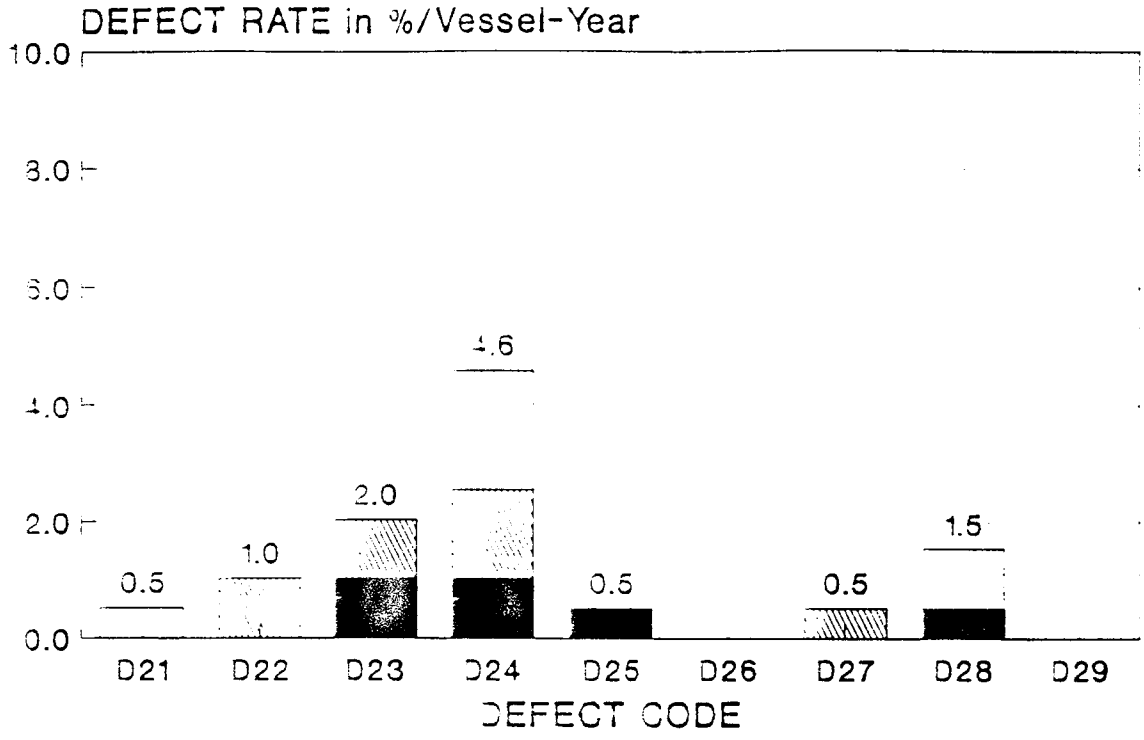
KEY:

D1	Life saving appliance
D11	= EPIRB
D12	= Lifejacket
D13	= Lifebuoy or buoyant apparatus
D14	= Lifeboat or liferaft
D15	= Distress signal
D16	= Medical stores
D17	= Items to be checked at another visit
D18	= Long time-limit defect
D19	= Other

TYPE OF DEFECT

1. Defective Item
2. Item Missing
3. Service or check

Figure 5.2
FIRE FIGHTING APPLIANCE DEFECT RATES FOR SEAGOING PASSENGER VESSELS



KEY:

D2	Fire fighting appliance
D21	= Fire or emergency pump
D22	= Firemain, valve, pipe, hydrant, hose
D23	= Fixed extinguishing installation
D24	= Portable fire extinguisher
D25	= Miscellaneous fire fighting equipment
D26	= Structural fire protection
D27	= Escape route or access
D28	= Long time-limit defect
D29	= Other

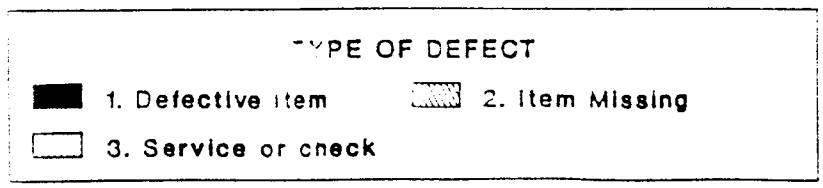
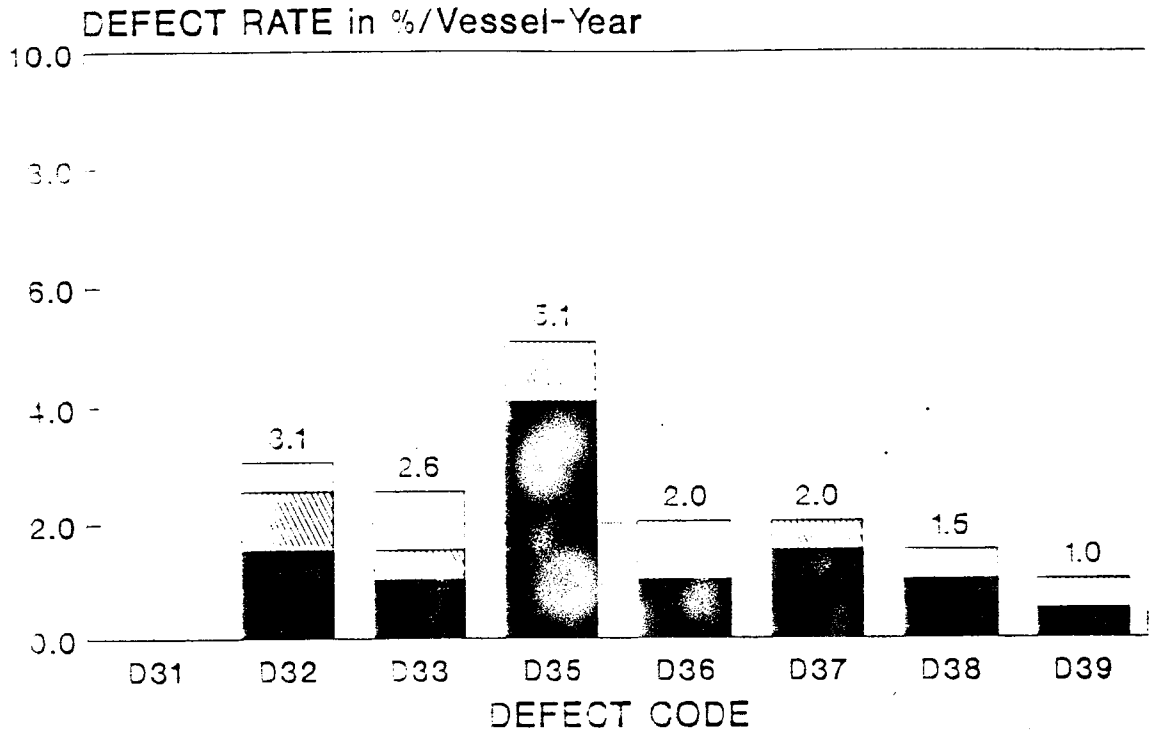


Figure 5.3
PROPULSION SYSTEM DEFECT RATES FOR SEAGOING PASSENGER VESSELS



KEY:

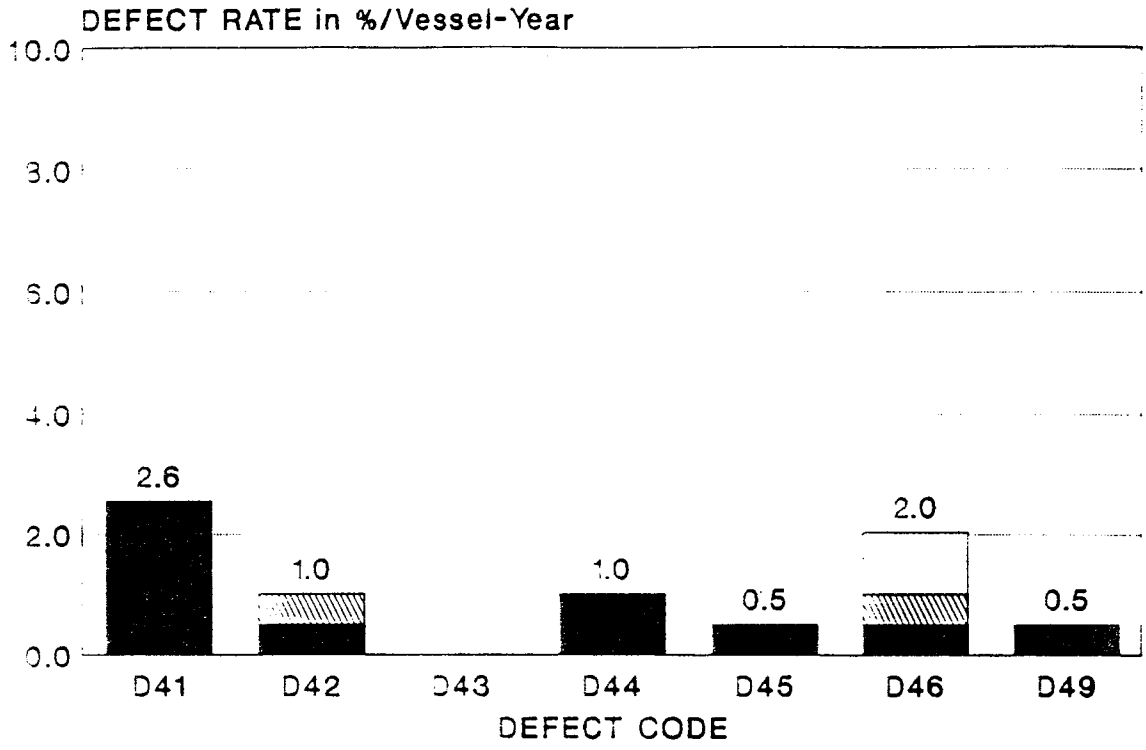
D3 Propulsion system

D31 = Guard or personal protection
D32 = Monitoring equipment
D33 = Electrical installation or wiring
D34 = Machinery to be checked in operation
D35 = Main or auxiliary machinery component
D36 = Propeller, tube, jetdrive
D37 = Pipework
D38 = Long time-limit defect
D39 = Other

TYPE OF DEFECT

1. Defective Item
2. Item Missing
3. Service or check

Figure 5.4
STRUCTURAL DEFECT RATES FOR SEAGOING PASSENGER VESSELS



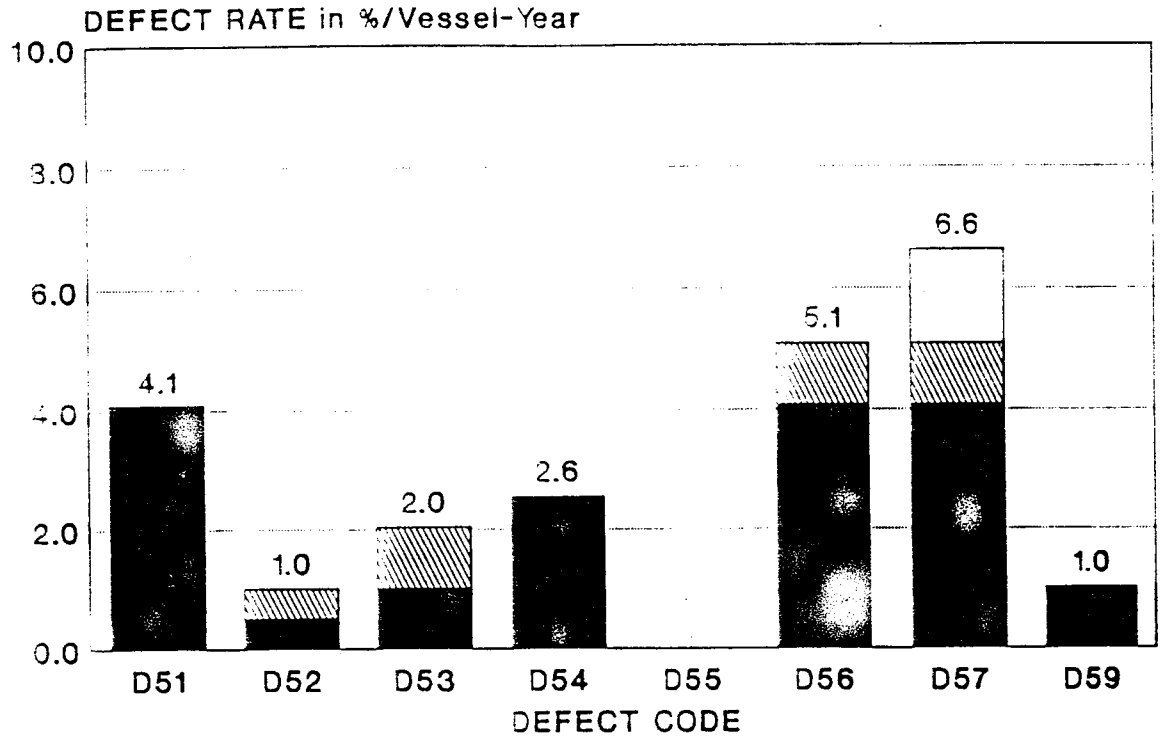
KEY:

D4	Structure
D41 =	Hull externally
D42 =	Hull internally except tanks
D43 =	Superstructure or deckhouse
D44 =	Tank or void space
D45 =	Rudder, rudderstock or bearing
D46 =	Steering system excluding rudder
D48 =	External hull inspection
D49 =	Other

TYPE OF DEFECT

1. Defective Item
2. Item Missing
3. Service or check

Figure 5.5
WATERTIGHT INTEGRITY DEFECT RATES FOR SEAGOING PASSENGER VESSELS



KEY:

D5 Watertight integrity

D51 = Casing, skylight, hatchway or closing device

D52 = Sea valve or sea discharge

D53 = Ventilator or air pipe

D54 = Window or porthole

D55 = Freeing port or scupper

D56 = Watertight bulkhead or deck opening

D57 = Bilge pump, pipe, valve or alarm

D58 = Vessel to be checked afloat

D59 = Other

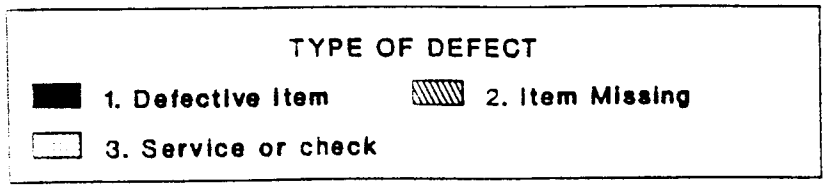
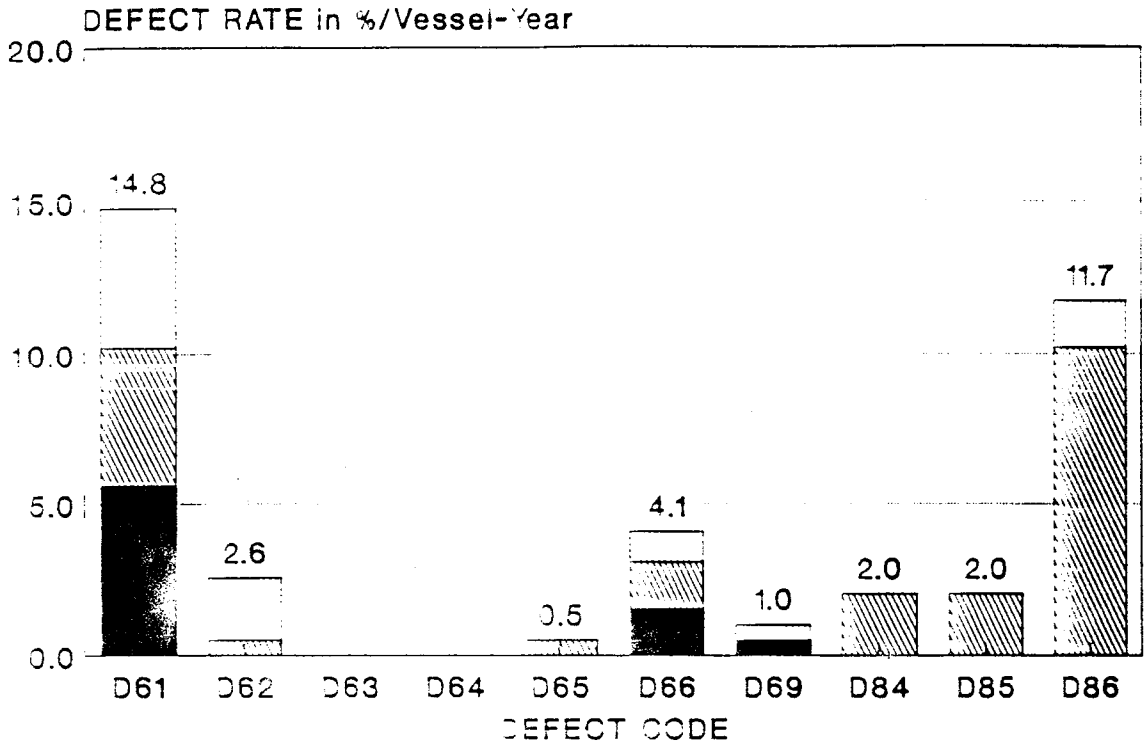


Figure 5.6
NAVIGATIONAL DEFECT RATES FOR SEAGOING PASSENGER VESSELS



KEY:

D6 Navigation

D61 = Navigation light, shape or sound signal

D62 = Compass, barometer or clock

D65 = Chart, nautical data, log-book

D66 = Windlass, anchor or cable

D69 = Other

D84 = Stability, loadline or operational data

D85 = Display of safety, fire or emergency plan

D86 = Information or warning notice for passengers

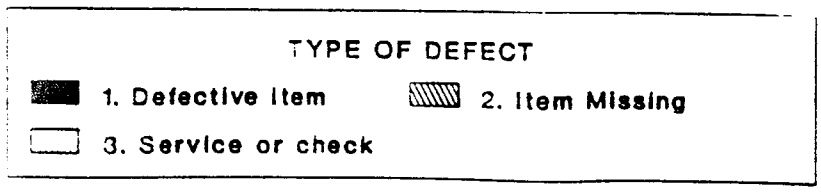
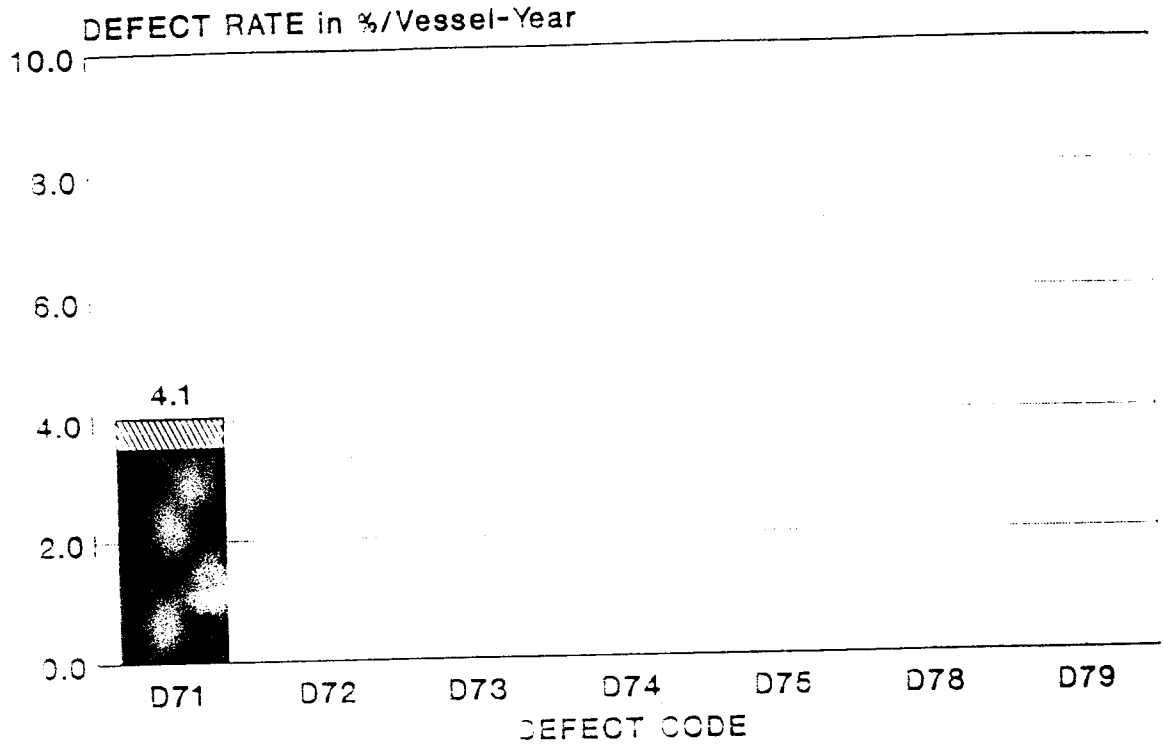


Figure 5.7
MISCELLANEOUS EQUIPMENT DEFECT RATES FOR SEAGOING PASSENGER VESSELS



KEY:

D7 Miscellaneous equipment

D71 = Guardrail or bulkwark

D72 = Cargo handling, fishing gear or ground tackle

D73 = Pressure vessel installation

D74 = LPG installation

D75 = Refrigeration installation

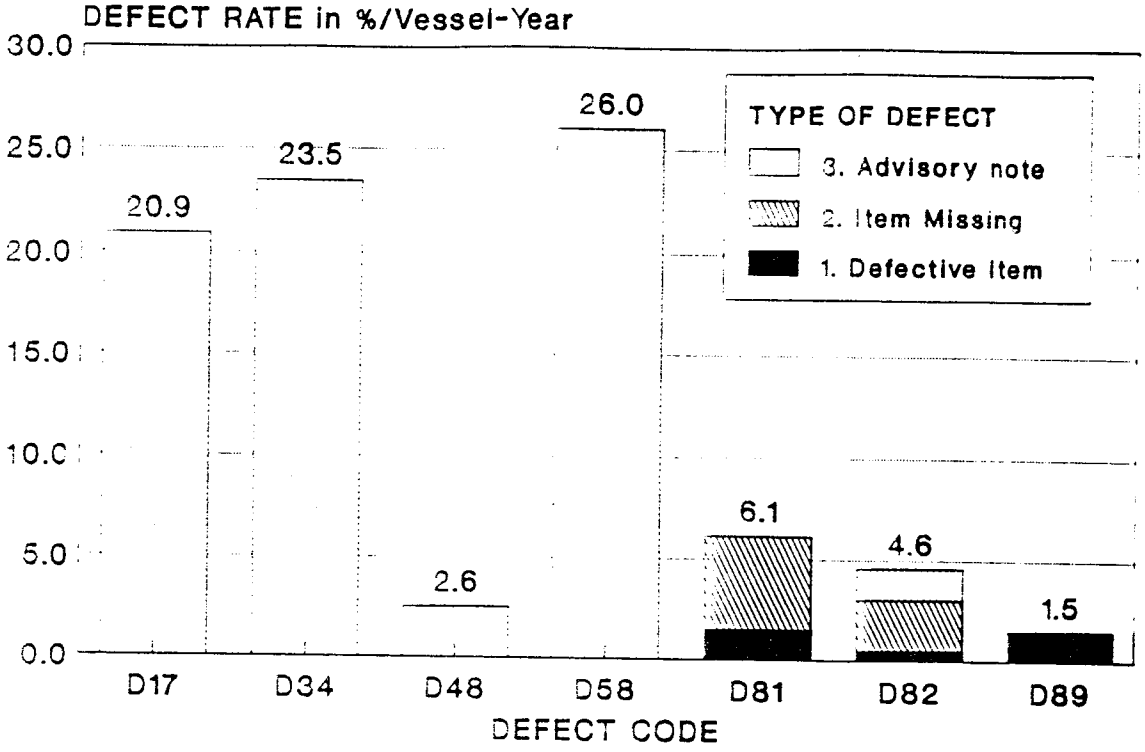
D78 = Long time-limit defect

D79 = Other

TYPE OF DEFECT

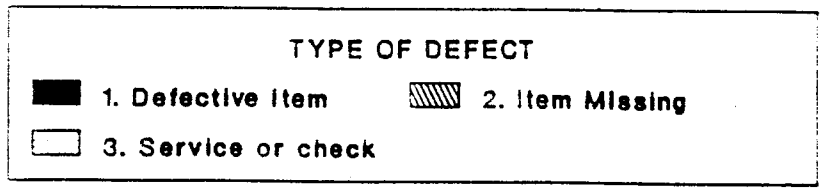
1. Defective Item
2. Item Missing
3. Service or check

Figure 5.8
INFORMATIONAL DEFECT RATES FOR SEAGOING PASSENGER VESSELS



KEY:

D8	Information
D17 =	Items to be checked at another visit
D34 =	Machinery to be checked in operation
D48 =	External hull inspection required
D58 =	Vessel to be checked afloat
D81 =	Vessel identification mark or number
D82 =	Permit, license or Survey Record Book
D89 =	Other



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MSB Waterways

BOATING INCIDENT REPORT (Reporting procedures required by Maritime Services Act 1935)

PARTICULARS OF INCIDENT

DATE	TIME	AREA OF OPERATION (A) (See Codes on Reverse) (Official Use Only)	LOCATION	BREATH ANALYSIS ADMINISTERED
				Yes [ ] Passed [ ] No [ ] Failed [ ]

PARTICULARS OF VESSELS AND OPERATORS

VESSEL NO. 1 (Your vessel if self reporting)

Particulars of Operator

Name:.....

Address:.....

.....

Date of Birth:.....Postcode:.....

Phone No:.....Cert/Lic No:.....

Particulars of Owner of Vessel

Name:.....

Address:.....

.....Postcode.....

Phone No:.....

Operator's Experience

This type of boat
[ ] Under 20 Hours
[ ] 20 to 100 Hours
[ ] 100 to 500 Hours
[ ] Over 500 Hours

Qualification (B) [ ]
Recreational [ ]
Commercial [ ]

Particulars of Vessel No. 1

Name:

Permit/Reg. No:

CAPACITY

Capacity Plate Maximum Load [ ]
No. of Persons on Board [ ]

TYPE OF VESSEL

Recreational [ ]
Commercial [ ]

REGISTRATION/SURVEY STATUS

Current [ ] Suspended [ ] Cancelled [ ] Exempt [ ]

Last Survey Completed: Place: Date:

List any Outstanding Defects on a Separate Sheet

RADIO: On Board: Yes [ ] No [ ] Used: Yes [ ] No [ ]

EPIRB: On Board: Yes [ ] No [ ] Used: Yes [ ] No [ ]

PERSONAL FLOTATION DEVICES: No. on Board [ ] No. Used [ ]

TYPE OF BOAT
[ ] Open Motorboat
[ ] Cabin Motorboat
[ ] Auxiliary Sail
[ ] Sail (only)
[ ] Rowboat
[ ] Sailboard
[ ] Personal Water Craft (Jetski)
[ ] Fishing (LFB)
[ ] Ferry
[ ] Chartered
[ ] Other (specify)
.....

HULL MATERIAL
[ ] Wood
[ ] Aluminium
[ ] Plywood
[ ] Fibreglass
[ ] Steel
[ ] Other (specify)
.....
.....
.....

ENGINE
[ ] Outboard
[ ] Inboard Petrol
[ ] Inboard Diesel
[ ] Other (specify)
.....
.....
.....
Engine Horsepower
.....

VESSEL NO. 2 (Other vessel if self reporting)

Particulars of Operator

Name:.....

Address:.....

.....

Date of Birth:.....Postcode:.....

Phone No:.....Cert/Lic No:.....

Particulars of Owner of Vessel

Name:.....

Address:.....

.....Postcode.....

Phone No:.....

Operator's Experience

This type of boat
[ ] Under 20 Hours
[ ] 20 to 100 Hours
[ ] 100 to 500 Hours
[ ] Over 500 Hours

Qualification (B) [ ]
Recreational [ ]
Commercial [ ]

Particulars of Vessel No. 2

Name:

Permit/Reg. No:

CAPACITY

Capacity Plate Maximum Load [ ]
No. of Persons on Board [ ]

TYPE OF VESSEL

Recreational [ ]
Commercial [ ]

REGISTRATION/SURVEY STATUS

Current [ ] Suspended [ ] Cancelled [ ] Exempt [ ]

Last Survey Completed: Place: Date:

List any Outstanding Defects on a Separate Sheet

RADIO: On Board: Yes [ ] No [ ] Used: Yes [ ] No [ ]

EPIRB: On Board: Yes [ ] No [ ] Used: Yes [ ] No [ ]

PERSONAL FLOTATION DEVICES: No. on Board [ ] No. Used [ ]

TYPE OF BOAT
[ ] Open Motorboat
[ ] Cabin Motorboat
[ ] Auxiliary Sail
[ ] Sail (only)
[ ] Rowboat
[ ] Sailboard
[ ] Personal Water Craft (Jetski)
[ ] Fishing (LFB)
[ ] Ferry
[ ] Chartered
[ ] Other (specify)
.....

HULL MATERIAL
[ ] Wood
[ ] Aluminium
[ ] Plywood
[ ] Fibreglass
[ ] Steel
[ ] Other (specify)
.....
.....
.....

ENGINE
[ ] Outboard
[ ] Inboard Petrol
[ ] Inboard Diesel
[ ] Other (specify)
.....
.....
.....
Engine Horsepower
.....

WEATHER AND WATER CONDITIONS

WEATHER	WATER CONDITIONS	WIND	WIND DIRECTION FROM	VISIBILITY	TIDE
[ ] Clear	[ ] Calm	[ ] None	[ ] N [ ] NE	[ ] Good	[ ] Flood
[ ] Rain	[ ] Choppy	[ ] Light (0-10K)	[ ] E [ ] SE	[ ] Fair	[ ] Ebb
[ ] Cloudy	[ ] Rough	[ ] Moderate (10-16K)	[ ] S [ ] SW	[ ] Poor	[ ] Slack
[ ] Flood	[ ] Very Rough	[ ] Strong (16-30K)	[ ] W [ ] NW		
[ ] Hazy	[ ] Strong Current	[ ] Storm (Over 30K)			

NATURE OF INCIDENT

OPERATION AT TIME OF INCIDENT
(Indicate operation for all vessels involved)

[ ] Underway	[ ] At Anchor
[ ] Docked	[ ] Fuelling
[ ] Water Skiing	[ ] Fishing
[ ] Aground	[ ] Skin Diving
[ ] Towing	[ ] Swimming
[ ] Being Towed	[ ] Other (specify)
[ ] Drifting	.....
[ ] Organised Competition	.....

TYPE OF INCIDENT

[ ] Grounding	[ ] Collision with Floating Object
[ ] Capsizing	[ ] Fall Overboard
[ ] Swamping	[ ] Fall in Boat
[ ] Sinking	[ ] Electrical Fire
[ ] Fire or Explosion (Fuel)	[ ] Hit by Boat or Propeller
[ ] Fire or Explosion other than fuel	[ ] Close Quarter
[ ] Collision with vessel	[ ] Other (specify)
[ ] Hull Splitting	.....
[ ] Collision with Fixed Object	.....

WHAT IN YOUR OPINION CAUSED THE INCIDENT
(Mark more than one if applicable)

[ ] Weather Conditions	[ ] Fault of Hull
[ ] Excessive Speed	[ ] Fault of Machinery
[ ] No Proper Lookout	[ ] Fault of Equipment
[ ] Overloading	[ ] Lack of Judgement
[ ] Improper Loading	[ ] Excess Alcohol
[ ] Hazardous Waters	[ ] Other (specify)
[ ] Fault of Other Person	.....
	.....

INJURIES AND FATALITIES

No. of Fatalities: Vessel 1 [ ] Vessel 2 [ ] Other [ ]
No. of Serious Injuries (C): Vessel 1 [ ] Vessel 2 [ ] Other [ ] No. of Minor Injuries (C): Vessel 1 [ ] Vessel 2 [ ] Other [ ]

DAMAGE TO PROPERTY (Give details of damage to all vessels and/or property)

Estimated Cost of Damage: Vessel 1 [$] Vessel 2 [$] Other Property [$]

INCIDENT DESCRIPTION: DESCRIBE WHAT HAPPENED (Sequence of events. Include failure of equipment. If diagram is needed attach separately. Include any information regarding the involvement of alcohol and/or drugs in causing or contributing to the incident. Include any descriptive information about the use of PFDs. List any witnesses who are prepared to give evidence).

Police Attendance: Yes [ ] No [ ]
Name of Police in Attendance: Phone No:

Continue on additional sheets if necessary

PERSON COMPLETING REPORT (To be completed in BLOCK letters apart from signature).

Name: Telephone:
Address: Date:
Signature:
Proposed Future Action:

Return to: Regional Co-ordination Unit, MSB Waterways Authority, PO Box R228, Royal Exchange, NSW 2000. (Fax: (02) 364 2170)

A. AREA OF OPERATION

Code	Location	Code	Location
1.	Tweed Heads	18.	Pittwater West
2.	Ballina	19.	Sydney A
3.	Maclean	20.	Sydney B
4.	Coffs Harbour	21.	Sydney C
5.	Kempsey	22.	Sydney D
6.	Port Macquarie	23.	Botany Bay East
7.	Laurieton	24.	Botany Bay West
8.	Forster	25.	Port Hacking
9.	Port Stephens/Myall Lakes	26.	Wollongong
10.	Newcastle	27.	Nowra
11.	Lake Macquarie	28.	Batemans Bay
12.	Toukley	29.	Narooma
13.	Windsor	30.	Merimbula
14.	Brisbane Waters	31.	Queanbeyan
15.	Brooklyn	32.	Albury
16.	Hawkesbury/Nepean	33.	Moama
17.	Pittwater East	34.	Mildura

B. QUALIFICATION

Code	Qualification	Code	Qualification
1.	Coxswain	9.	Harbour & River Certificate
2.	Master Class V	10.	Coxswain Pre-USL
3.	Master Class IV	11.	Driver Pre-USL
4.	Master Class III	12.	NSW Certificate of Validity
5.	Local Knowledge	13.	NSW MSB Waterways Boat Licence
6.	MED 3	14.	Other State Boat Licences
7.	MED 2	15.	AYF Qualifications
8.	MED 1	16.	Other

C. DEFINITION OF TYPES OF INJURY

Serious Injury = Hospitalisation for other than observation or minor cuts and bruises.
Minor Injury = First aid given on site or at hospital.