

Marine Safety Incidents Annual Report 2001



**Queensland
Government**
Queensland Transport

Released May 2002

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Part 1

Introduction



Marine Safety Incidents Annual Report 2001

This report provides an account of the health of Queensland's maritime safety environment as reflected by the number and nature of reported marine incidents for the year 2001. The report is made in accordance with section 127 of the *Transport Operations (Marine Safety) Act 1994* (the Act).

The report and its underlying data systems are consistent with the following objectives outlined in section 3 of the Act. In particular, these objectives are:

- (a) *to allow the Government to have a strategic overview of marine safety and related marine operational issues; and*
- (b) *to establish a system under which;*
 - (i) *marine safety and related operational issues can be effectively planned and efficiently managed; and*
 - (ii) *influence can be exercised over marine safety and related marine operational issues in a way that contributes to overall transport efficiency; and*
 - (iii) *account is taken of the need to provide adequate levels of safety with an appropriate balance between safety and cost.*

Data systems and classification

In 2000, an enhanced marine incidents management system, modelled on ISO 9000, was implemented with the agreement and co-operation of Queensland Transport's maritime compliance and enforcement partners - Queensland Police Service (Water Police) and Queensland Boating & Fisheries Patrol. The enhanced management system brought further clarity into reporting arrangements, investigation protocols and incident case management.

With continuous improvement as a goal, further enhancements relating to classification of marine incidents involving serious injuries were made in 2001. The most notable enhancement has been the more rigorous classification of serious injury incidents. This enhancement is consistent with the national model data set which defines serious injury incidents as those where a person involved suffers an injury requiring admission to hospital.

Since 2000 an additional set of incident data has been captured by Queensland Transport. This data relates to incidents, which while they may occur in the maritime environment, are outside the scope of marine incidents as defined in the Act. These include the likes of workplace health and safety incidents that are not related to the operation of a ship, and collisions involving international trading ships which are covered by the *Commonwealth Navigation Act 1912*. A survey of these types of incidents for the period 2000 - 2001 is included in this report to provide a fuller picture of safety management in Queensland's maritime environment.

Structure of the report

The structure of this annual report is consistent with the overall intent and purpose of the Act and, in particular, with the specific objectives outlined above. The design of the report is modelled on ISO 9004:2000 Quality management systems - guidelines for performance improvements.

The first section of the report includes interstate and intrastate benchmarking and trend analysis. These analyses are made using both population and the size of the registered vessel fleet to assess potential exposure to marine incidents. This approach is also consistent with both Australian and International Standards.

Subsequent sections of the report rank incident characteristics according to the extent of their involvement in incidents. This enables the identification of groupings of major incident characteristics and assessment of significant changes in the extent of their involvement in marine incidents over a five-year period.

Consistent with ISO 9000, the report also focuses on selected categories for more detailed analysis. To enable readers to gain further insight into marine incident trends and characteristics, a range of time-series data for each characteristic of reported marine incidents is included in Part 3 of the report.

As the report title implies, the focus is on marine incidents as a measure of maritime public safety. In terms of its structure and presentation, the report identifies the more significant incident categories and characteristics and those showing greatest change in 2001. This provides not only a sound basis for the determination of those factors requiring



further analysis, but also a sharper tool for shaping future maritime safety strategies and interventions.

The report opens with an assessment of the Queensland's maritime safety performance in comparison with other Australian states. An examination is then made of comparative regional performance within Queensland before examining higher social cost considerations such as fatalities, serious injuries and the like.

A review of boating incidents in 2001 is also included. Boating incidents can be viewed as 'potential marine incidents avoided' and are therefore an important early-warning barometer of safety performance in the maritime environment.

The aim in this and future reports is to accurately represent the major features, both good and bad, of marine incidents in Queensland, so as to identify areas where safety performance has improved, and to pinpoint hotspots for subsequent management and intervention.

Clearer categorisation and better prioritisation

Marine incidents are defined in section 123(1) of the Act. For ease of reference, the statutory definition of a marine incident and a definition of a serious injury incident have been replicated at Annex A of this report.

As well as the improvements in the analysis of aggregated marine incident data as outlined in this report, investigation processes for individual incidents continue to be improved.

To ensure case management of marine incidents focuses on the high risk/cost end of the spectrum, Regional Harbour Masters are authorised to categorise/re-categorise marine incidents. The four marine incident categories used are described at Annex B. Category 1 and 2 incidents, because of their nature, are given priority of investigation over other categories. They are typically assigned to specially trained Water Police, Boating & Fisheries Patrol and Queensland Transport Maritime personnel for detailed investigation.

Marine incidents categorized as category 3 and 4 are assigned to trained Queensland Transport Maritime Safety Officers for investigation to establish the basic facts and to recommend administrative action where appropriate.

This approach keeps the 'top-end' of maritime safety incidents in focus without losing sight of other less severe incidents that potentially compromise safety in the maritime environment.

Shipping inspectors

Shipping inspectors are appointed in accordance with the Act, and are empowered to receive reports and to investigate marine incidents. Shipping inspectors are appointed within all three earlier-mentioned government agencies administering Queensland's maritime safety legislation. Partnerships between Queensland Transport, the Water Police and Queensland Boating & Fisheries Patrol have been formalised through service agreements for maritime safety compliance, enforcement and investigations.

Volunteer marine rescue organisations

Regional volunteer marine rescue organisations perform an important role in the promotion and preservation of maritime safety in Queensland. They attend thousands of calls from boat operators for assistance each year and play a vital role in the practical handling of both marine and boating incidents - assisting in stabilisation at the scene of incidents and coaching those involved in the requirements for boating or marine incident reports.



Summary

According to recent data enabling interstate comparisons, Queensland's maritime fatality rate per million of population has markedly declined over the last ten years by more than 50 per cent from 5.14 in 1990-1994 to 2.2 in 2000. This compares with figures for all of Australia for the same period that show a decline from 4.51 to 2.0, respectively. Over this period, vessels on register in Queensland increased by more than 30 per cent, and Queensland improved from being ranked fifth of the eight Australian jurisdictions to third in 1999, and fourth overall in 2000.

In 2001, 604 marine incidents were reported in Queensland. This represents a negligible fall in 2001 following an increase of 7 per cent the previous year. There is evidence that much of the steady increase in the numbers of incidents being reported in recent years was due to improved levels of reporting and that the numbers of incidents being reported are now beginning to stabilize.

The most notable feature of the 2001 marine incident data is the fall in the number of incidents resulting in fatality or serious injury, and the corresponding fall in the number of resultant serious injuries. Thirty nine incidents involving fatalities or serious injury were recorded for 2001. This represents a decrease of 53 per cent over the 83 incidents recorded in 2000 and a decrease of 38 per cent over the four-year average of 63.25. This decrease appears to be largely attributable to the earlier-mentioned more rigorous classification of serious injury incidents.

The number of fatalities and serious injuries resulting from these incidents has correspondingly fallen sharply, with 48 in 2001 compared with the previous four-year average of 78 - a 38 per cent decrease. However the ratio of fatalities and serious injuries to fatal and serious injury incidents remains stable at 1.23 to 1 for 2001 and for the previous four years. While the fatality outcome in 2001 (12) is the same as for 2000, fatalities continue to be slightly over-represented when compared with the previous four-year average of 10.5 fatalities.

The major characteristics of incidents resulting in fatalities or serious injuries in 2001 included:

- good visibility (88 per cent)
- the daytime period (85 per cent)
- clear weather (85 per cent)
- smooth and inland waters (57.5 per cent)
- light winds (51.5 per cent)
- Brisbane/Gold Coast (54.5 per cent)

There were relatively few characteristics of incidents resulting in fatalities or serious injuries that showed growth in 2001. The largest increase was in the involvement of recreational motorboats where there was an increase of 50 per cent. However, this only involved an increase in involvement of two additional incidents for this type of vessel, which is not statistically significant.

Collisions between ships was one of the major factors that showed a substantial decline in its rate of involvement in 2000. In 2001 this factor continued to show a declining rate of involvement. Collisions between ships showed a 31 per cent fall in 2000 and a further 75 per cent decline in 2001.

These declines in the rate of involvement however need to be considered in the context of the relative smallness of the fatal and serious injury incident numbers being examined in 2001.



Part 2

Marine incident trends and characteristics in Queensland



It should be noted that at any given time, data and/or cases relating to reported marine incidents might be outstanding or incomplete. Consequently, marine incident data for recent years is subject to amendment and clarification in subsequent years' marine safety incident annual reports.

It should also be noted that the data analysed in this report is drawn from 'reported marine incidents' and excludes data from incidents that for whatever reason have not been reported as required under section 125 of the Act. While the overall level of reporting of marine incidents is strong, it is acknowledged that there may be an indeterminate level of under-reporting of marine incidents in any given year.

Interstate comparisons

To provide the broadest initial view of Queensland's relative maritime safety performance, this review commences with a comparison of Queensland's maritime fatality involvement per head of population with that of other Australian states and territories.

Australian Bureau of Statistics (ABS) data from coroners' reports is used. This source has the benefit that, although the scope and definitions of maritime incidents vary slightly from those used by Queensland Transport, a nationwide comparison is possible from a common point of reference, resolving issues of comparability between individual jurisdictions' maritime incident data collections and definitions.

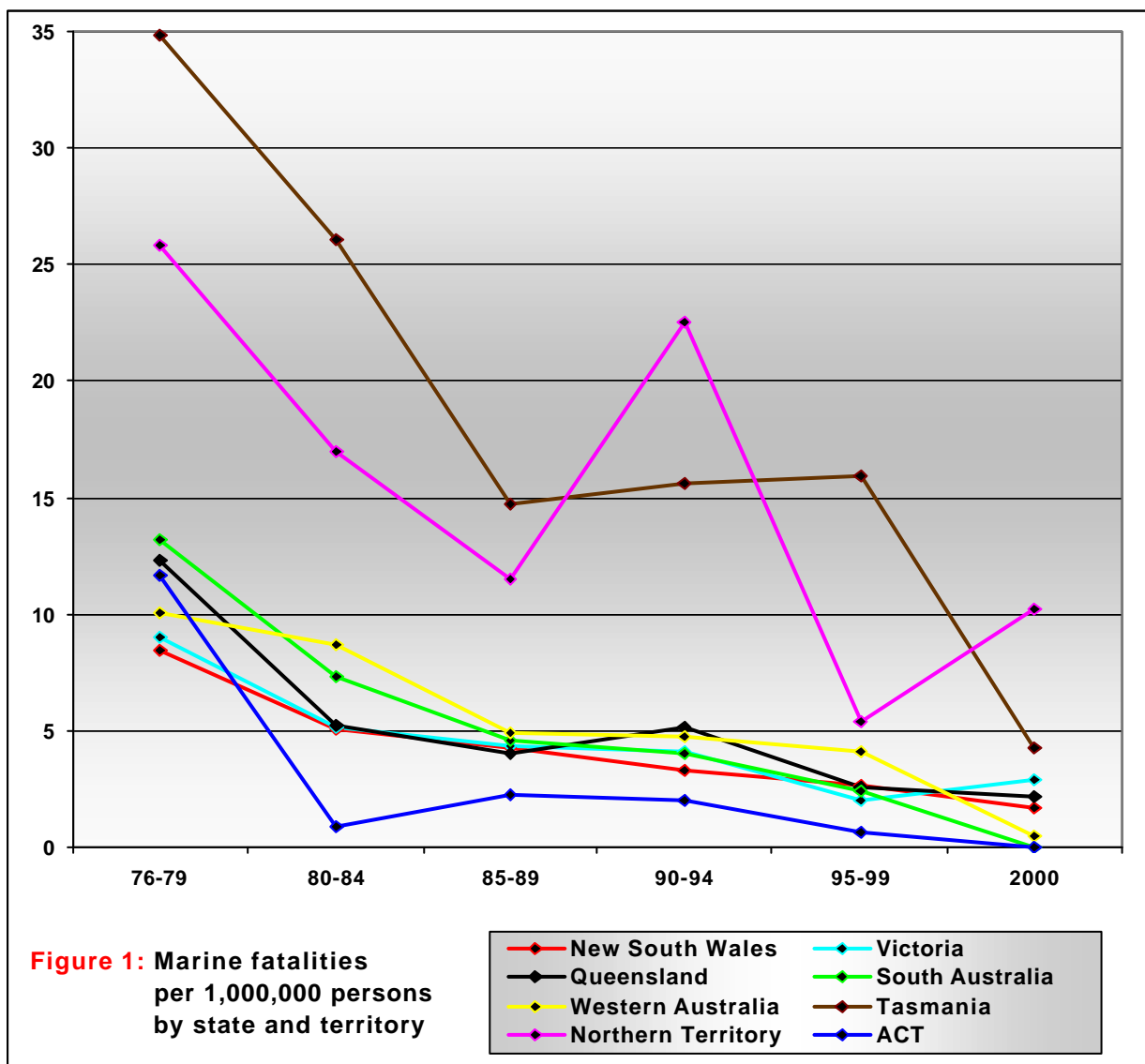


Figure 1 shows that over the past 25 years, all states in Australia have shown a steady improvement in maritime fatality rates per head of population. Broadly speaking, a series of eras is visible - that of the seventies, the period from 1980 to 1994, and the remainder of the 1990's, with each era showing lower per capita fatality rates than the previous.

During the period 1994 to 1999, the data shows that the Queensland maritime fatality rate per capita exhibited both an absolute and a relative decrease compared with other states. From ranking fifth of the eight jurisdictions in the 1990-94 period, Queensland's ranking improved to third over the period 1995-99. In 2000, Queensland ranked fourth in Australia with a maritime fatality rate of 2.2 per one million of population. This represents a fall of 15 per cent over the previous five-year average of 2.59 fatalities per million of population. Comparatively, the maritime fatality rate per million of population for all of Australia in 2000 was 2.0. Coronial data for 2001 was not available from the ABS at the time of printing this report.

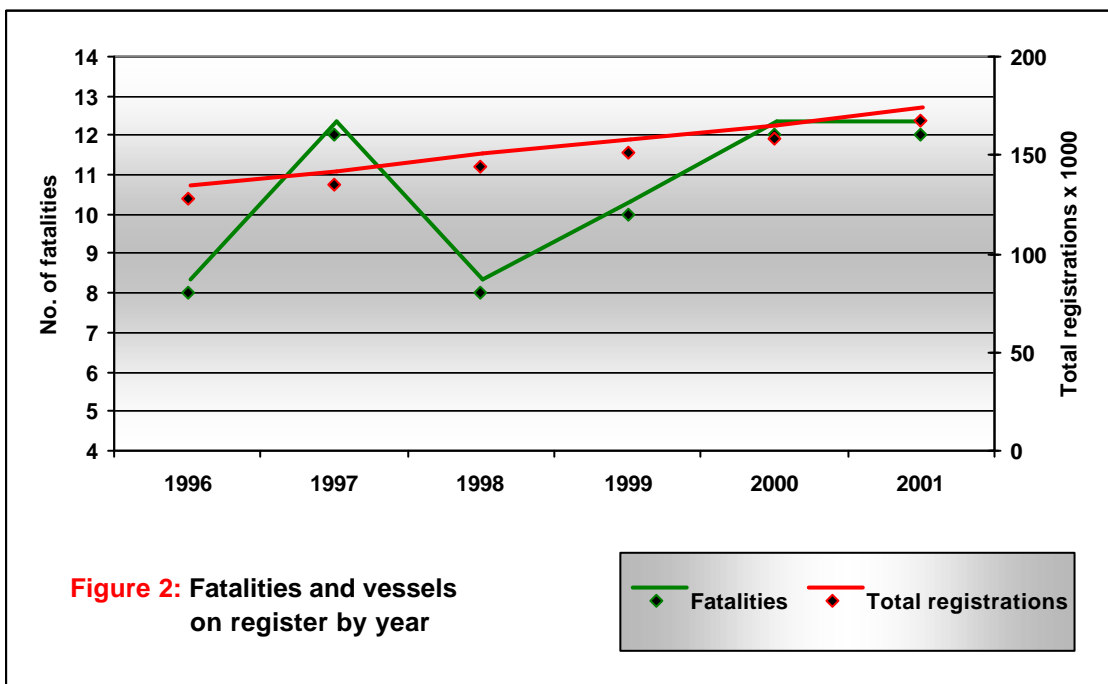
Comparisons within Queensland

In this section reported marine incidents within Queensland are analysed. When disaggregated, incidents numbers are often small and random variations can be large. For this reason trends over time are generally assessed in terms of incidence in the year under review compared with the average of the previous four years of data (the five year window).

Where comparisons involving small numbers are made, comments are included where appropriate on whether any variation is statistically significant.

Fatal incidents in Queensland

Figure 2 compares Queensland's recent maritime fatality trend with one measure of exposure to maritime fatalities - the total number of vessels on register.



There were 12 fatalities resulting from reported marine incidents during 2001 - the same number as recorded in 2000. This represents an increase of between one and two fatalities over the previous four-year average of 10.5. Given the small numbers involved, it is not possible to determine whether this increase represents a trend or is due to random fluctuation. Figure 2 also shows that the number of commercially and recreationally registered vessels increased by some 30 per cent over the same five-year period.



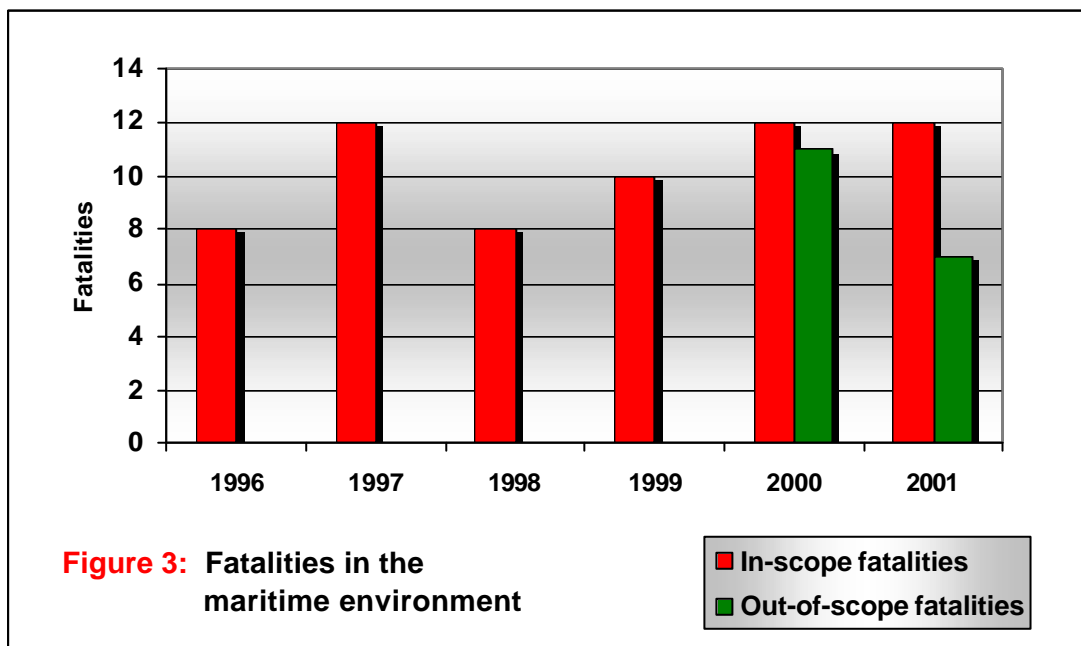
As indicated earlier, data is now also captured for incidents, which while they may occur in the maritime environment, are outside the scope of marine incidents as defined in the Act. These incidents attract a good deal of public interest and media coverage. They include fatal and serious injury incidents where the death or injury is attributable to natural causes, or where the incidents fall directly within the scope of workplace health and safety or Commonwealth legislation.

As part of its marine incident case management system Queensland Transport monitors these incidents to ensure that any necessary investigation or remedial action is taken. The data also enables a fuller picture to be presented of safety in the maritime environment.

Figure 3 shows the number of fatalities resulting from ‘in-scope’ marine incidents and from other ‘out-of-scope’ incidents in the maritime environment for 2000 and 2001. During 2000 - 2001, Queensland Transport noted 63 reported incidents as outside the scope of the legislative definition of a marine incident. Twenty seven of these occurred in 2000 and the remaining 36 in 2001. Queensland’s combined maritime fatalities, including out-of-scope fatalities, were 23 in 2000 and 19 in 2001.

Examples of the types of fatalities classified as out-of-scope include:

- a person who died after falling from a jetty onto a ship
- a man who died from a heart attack while snorkelling
- an on-board workplace health and safety incident that resulted in the death of a person
- a passenger on a reef cruise who died while swimming

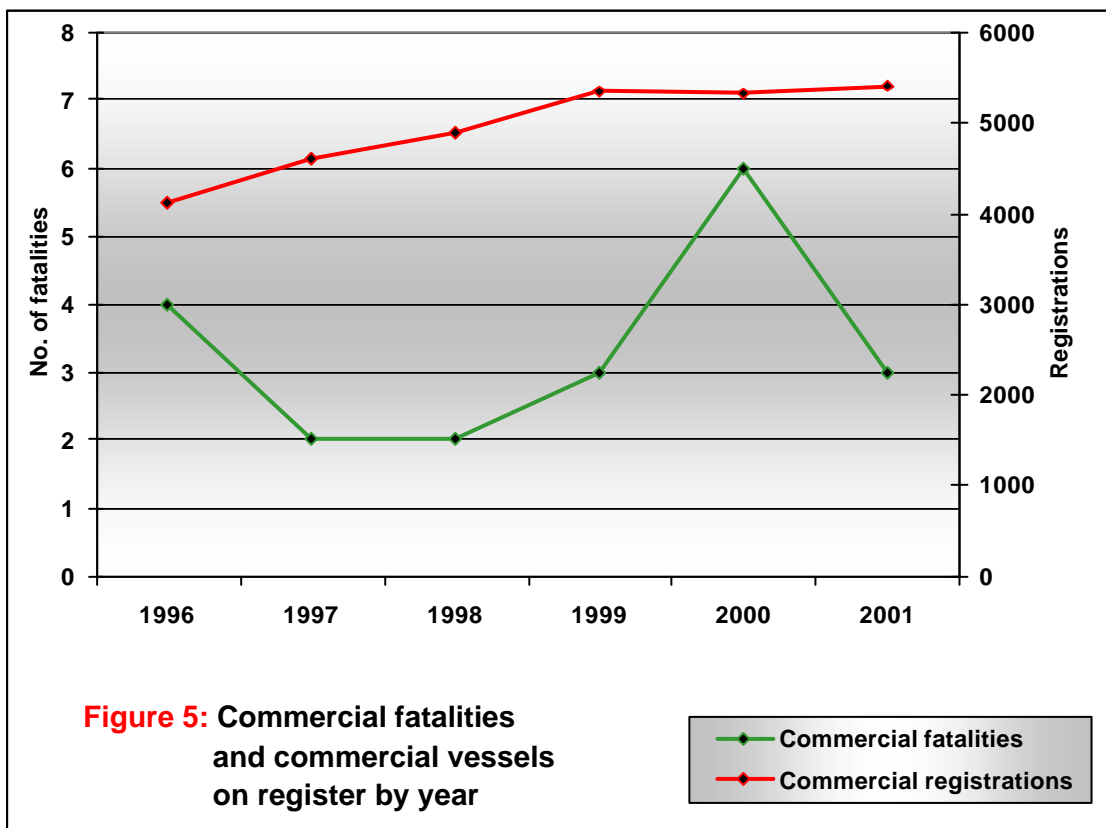
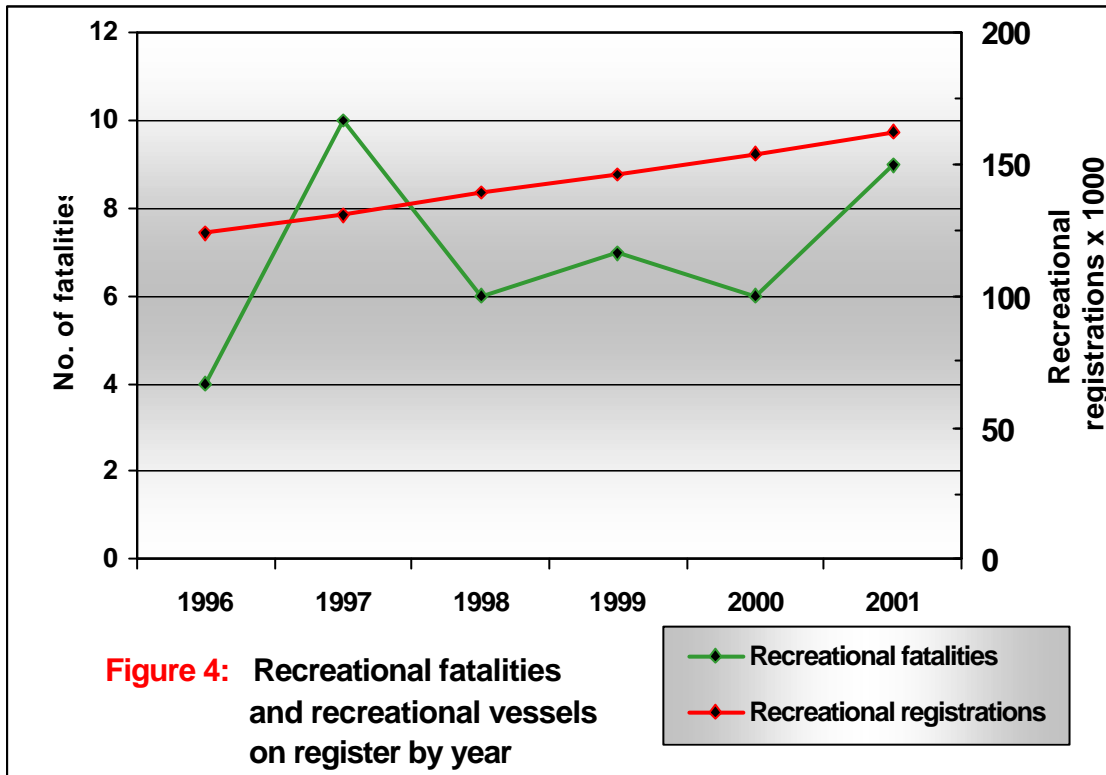


Out-of-scope maritime fatality data was not recorded by Queensland Transport prior to 2000.

In Figures 4 and 5, in-scope marine incident fatality figures are broken down into two major vessel registration types - recreational and commercial.

Figure 4 shows that 9 recreational fatalities occurred in 2001. In comparison with the previous four-year average of 7.25, recreational fatalities in 2001 have increased by nearly two (24 per cent). This compares with growth in registered recreational vessel numbers in 2001 of 5.6 per cent and some 24 per cent over the five-year period. It is noted that in 2001 four fatalities (44 per cent) resulted from one recreational marine incident. The overall increase in fatalities per unit of exposure is in line with the increase in registered recreational vessel numbers over the last five years.

The growth trend in the number of commercially registered vessels is shown in Figure 5. While there has been an increase in the number of commercially registered vessels of some 17.6 per cent over the past five years, there has been a slowing in 2000 and 2001. Figure 5 shows there were 3 fatalities resulting from marine incidents involving commercial vessels in 2001. This is 50 per cent fewer than in 2000. While this reduction in fatalities from 2000 to 2001 is pleasing, it represents only a small improvement when compared with an average of 3.25 fatalities per year for the previous four years.

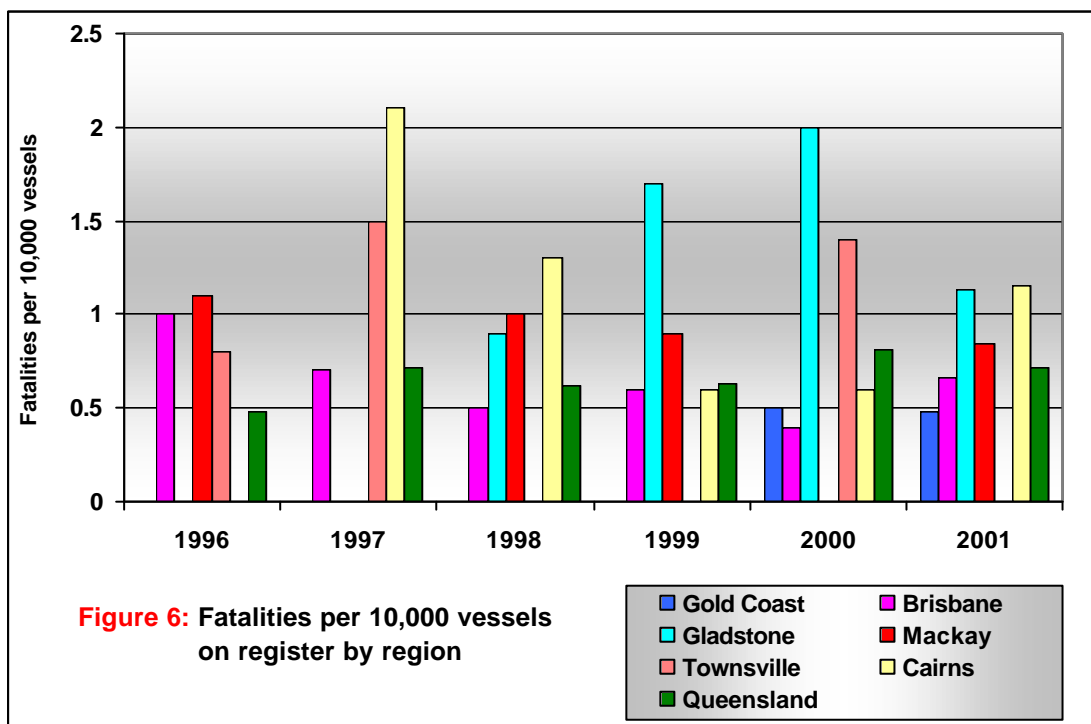


Fatal incidents in Queensland - comparisons by region

In Figure 6 the maritime safety performance of each Queensland Transport maritime region is assessed in terms of fatalities per 10,000 vessels registered. The state average fatality rate per 10,000 vessels on register in 2001 was 0.72, compared with a four-year state average of 0.70.

Three regions have shown marked changes in 2001. Cairns region, after under-representation in 1999 and 2000, is over-represented in 2001 with 1.15 fatalities per 10,000 vessels on register. This is however consistent with the previous four-year average for the Cairns region. Mackay region is also over-represented in 2001 with 0.85 fatalities per 10,000 vessels on register compared with its regional four-year average of 0.48. Townsville region, with no fatalities recorded in 2001, is under-represented in terms of both its regional average of 0.73 and the state average.

Gladstone region has shown a marked fall of 43.5 per cent in fatalities per 10,000 vessels on register from 2 in 2000 to 1.13 in 2001. The 2001 outcome is now consistent with the previous four-year Gladstone region average of 1.15. However, Gladstone region continues to be significantly over-represented in terms of its fatality rate when compared with the state average of 0.72.



When viewing Figure 6, it should be noted that data for the Gold Coast has only been reported separately since 2000.

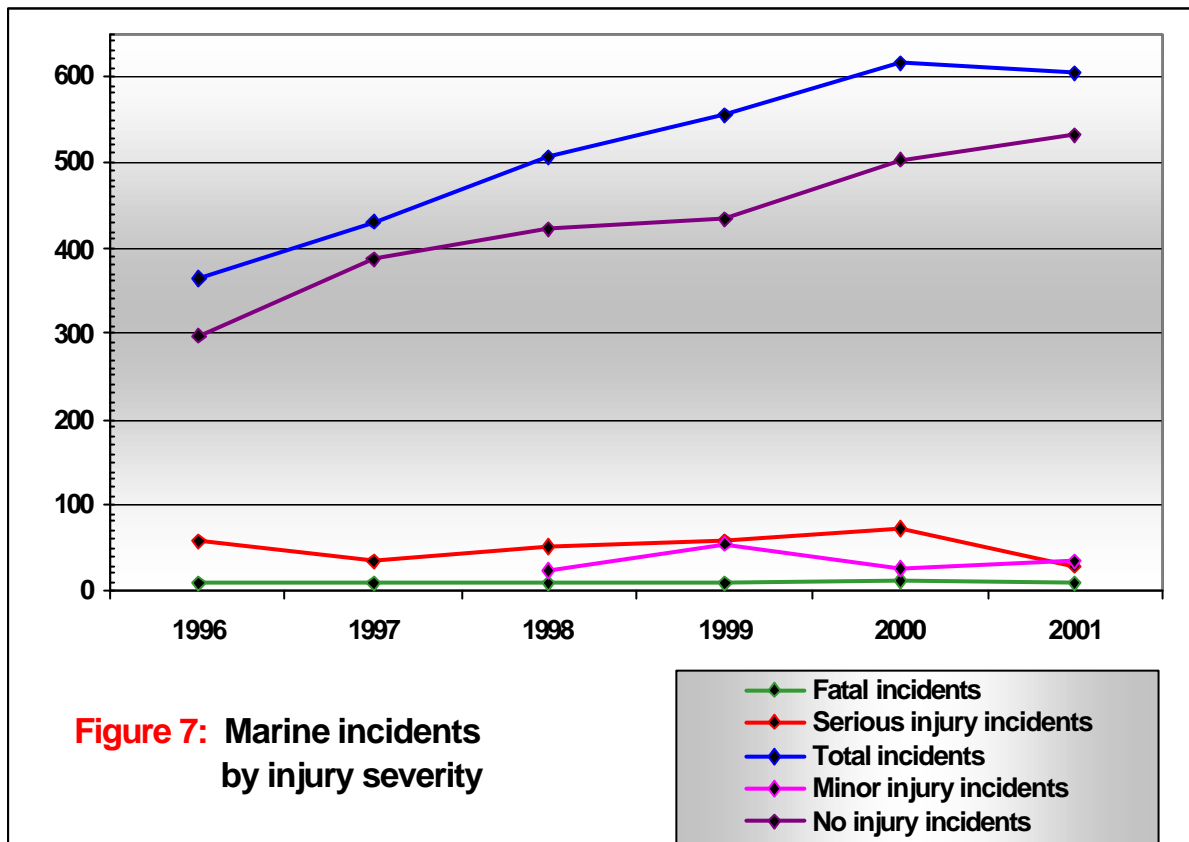
All incidents by severity

This section examines all reported marine incidents in Queensland. Incidents are analysed from two perspectives:

- the severity of resultant personal injury (Figure 7), and
- the severity of resultant property damage (Figure 8)

Minor injury incident data was not formally recorded prior to 1998.

Figure 7 shows that total reported marine incidents have fallen slightly in 2001 after a steady upward trend over the previous five years. The increased numbers of reported marine incidents in recent years are more likely the result of improved levels of reporting than increasing numbers of incidents. The slight fall in reported incident numbers in 2001 suggests that there may be a plateau occurring in the rate of marine incidents. Analyses in subsequent years will continue to monitor this aspect.



Incidents by severity of personal injury

Figure 7 also shows reported marine incident trends according to the severity of the personal injury outcome. Reported incidents resulting in fatality have fallen from 12 in 2000 to 9 in 2001. This compares favourably with a four-year average of 9.5. Serious injury incidents have also fallen sharply in 2001 to 30 compared with a four-year average of 53.75. However, the extent of this fall must be considered in the context of more rigorous classification applied to serious injury incidents in 2001.

Prior to 2001 the ‘admission to hospital’ criterion for serious injury incidents was not applied as rigorously as it has been since 2001. This is likely to have resulted in an indeterminate level of over-statement of the number of serious injury incidents in those years. For example, it appears that pre-2001, some incidents may have been classified as serious injury incidents on the basis that an injured person required hospital emergency treatment, despite that person not subsequently being admitted to hospital.

Incidents resulting in minor injuries have also been included in Figure 7. Minor injuries resulting from marine incidents appear to be generally consistent after a moderate spike in 1999.

While any marine incident is unsatisfactory, it is pleasing to note from Figure 7 the trend in terms of the reduction in the severity of incidents when measured by the level of injuries sustained.

The second view of incident severity relates to property damage and loss. The various dimensions of property damage are shown in Figure 8.

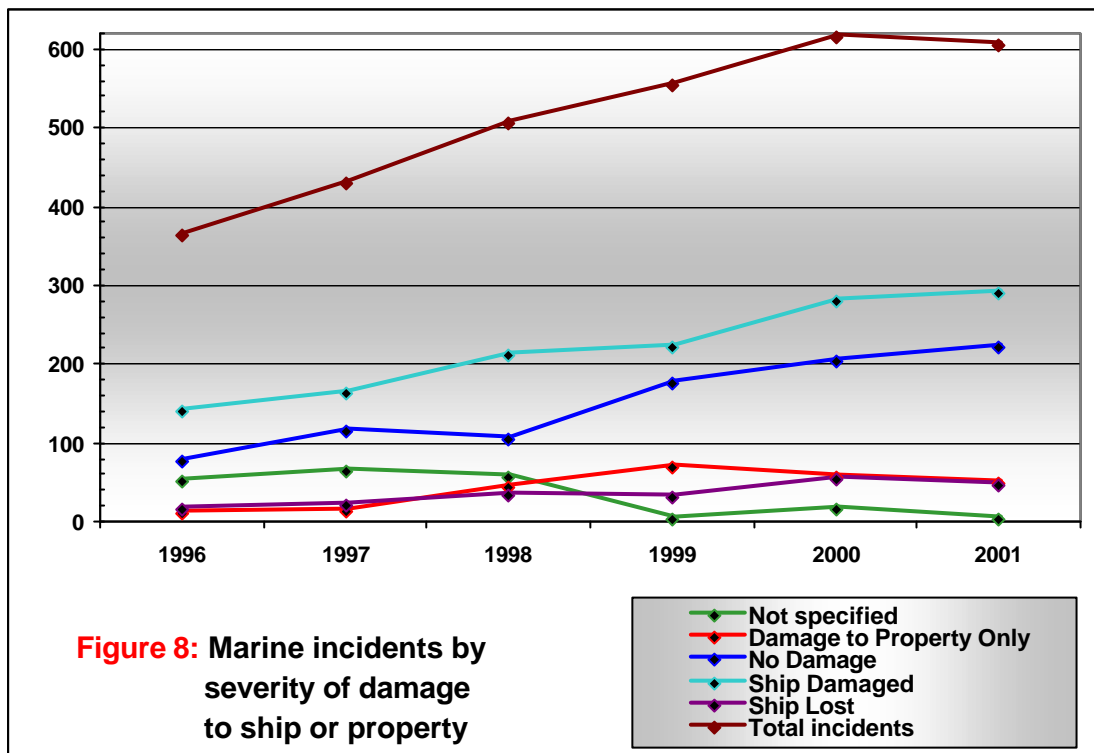


Figure 8: Marine incidents by severity of damage to ship or property

Figure 8 shows increases in 2001 in only two damage severity dimensions, ‘no damage’ and ‘ship damaged’. While there have been only nine more incidents resulting in ship damage in 2001 than in 2000, the 2001 result of 289 is still well above the previous four-year average of 218.5. The increase in the ‘no damage’ dimension is encouraging as it corresponds with falls in the other property damage categories. The fall in the “not specified” severity dimension is also encouraging from the perspective of improved incident investigation and data quality.

The fall in the number of ‘ships lost’ from 53 in 2000 to 45 in 2001 while encouraging, is still over-represented compared with the four-year average of 34.5.

Fatal and serious injury incidents by type

In the following section, time-series trends in two major fatal and serious injury marine incident defining criteria - incident type and vessel type - are discussed.

Figure 9 maps the trends for the five most frequently occurring types of incidents that resulted in either fatalities or serious injuries (FSI incidents). All five categories have shown marked decreases in 2001 and overall there was a 53 per cent drop in 2001 compared with 2000. Once again, the results need to be interpreted in the light of more rigorous classification of serious injury incidents in 2001.

The number of ‘person overboard’ incidents is consistent with the previous four-year average of 8. The remaining four categories all show marked under-representation when compared with the previous four-year averages.

The ‘collision between ships’ result of two in 2001 is encouraging and represents a more than 70 per cent improvement when compared with both the 2000 result of involvement in 7 incidents and the four-year average of 7.75 units of involvement.

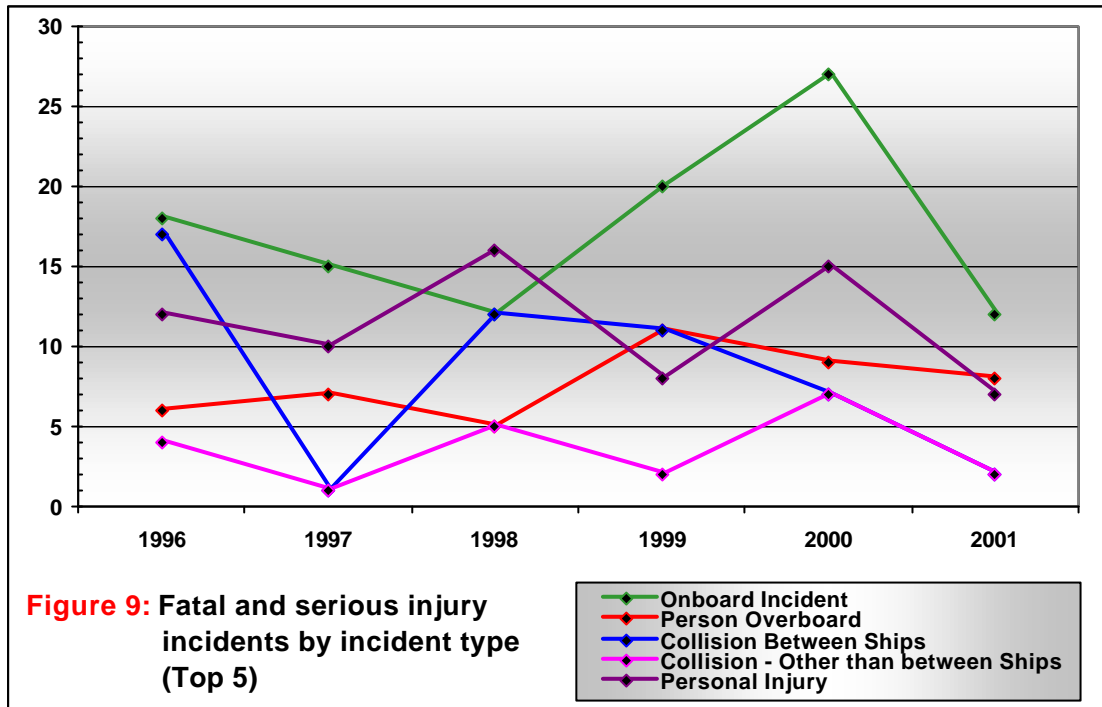
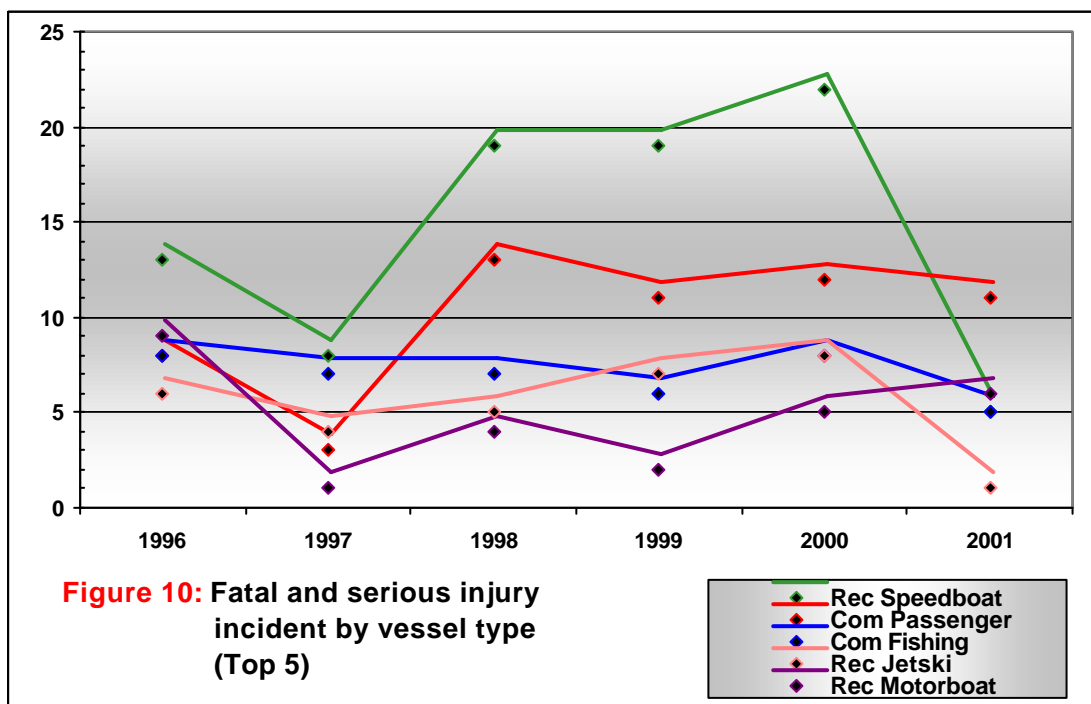


Figure 10 shows the five vessel types that have figured most often in FSI incidents in Queensland from 1996 to 2001. With the exception of recreational motorboats, all vessel types have shown falls in involvement in 2001. Most notably, recreational speedboats have shown a fall in involvement of more than 70 percent when compared with the previous four-year average of 17. Significantly, recreational speedboats represent more than 81 per cent of the total Queensland registered vessel fleet. The targeting of educational and enforcement campaigns in 2001 is likely to have contributed to this significant decrease in incident injury levels.



Recreational personal watercraft, or jet skis as they are better known, have shown an even greater fall in involvement of more than 87 per cent in 2001, compared with the 2000 result of 8 - and a fall of more than 83 per cent when compared with the four-year average of 6 units of involvement. Recreational jet skis represent less than three per cent of the total Queensland registered vessel fleet. Comparatively, they were slightly under-represented in terms of their involvement in FSI incidents in 2001 (2.3 per cent), but over-represented in terms of their involvement in all reported marine incidents in 2001 (7.8 per cent). These outcomes for jet skis are seemingly at odds with the extensive negative exposure this class of craft attracted in the media in 2001. The involvement of jet skis will be closely monitored in 2002, particularly in terms of potential under-reporting of incidents involving jet skis.

There has been an upward trend in involvement of recreational motorboats in FSI incidents over a number of years. Recreational motorboats differ from speedboats in that they have displacement hulls and are not capable of planing. Operators of these vessels are not currently required to hold a recreational marine driver's licence. In 2001, these vessels were over-represented in terms of their involvement in FSI incidents by a factor of two, when compared with their previous four-year average involvement in 3 FSI incidents. The involvement of recreational motorboats in marine incidents is the subject of a more detailed analysis of the involvement of recreational vessels in marine incidents later in this report.

Fatal and serious injury incidents - incident characteristics by extent of involvement

An analysis was made of FSI incidents to determine the extent to which characteristics such as time of day, weather conditions, vessel type and the like, were involved in these more serious incidents. The analysis focuses on the thirty most frequently occurring characteristics in FSI incidents and measures:

- the number of times each characteristic was involved in an FSI incident, and
- changes in the extent of involvement of these characteristics in 2001 compared with their average rate of involvement in FSI incidents in the previous four-year period

Figure 11 shows the extent of involvement in 2001 for the 'top thirty' incident characteristics together with their corresponding average rate of involvement over the previous four years.

As in 2000, the three most frequently occurring attributes of FSI incidents in 2001 related to ambient conditions including clear weather, good visibility and the daytime period. These factors were each involved in more than 70 per cent of the 39 FSI incidents in 2001.

Marine incidents resulting in 'no damage' were the next most significant grouping in terms of involvement in FSI incidents in 2001. While the 39 incidents being reviewed involved fatalities and serious injuries, the increase in the proportion of these incidents with no physical damage to the ship is nonetheless an encouraging outcome and re-affirms the comments made earlier in discussing Figure 8.

The vessels

Commercial hire and drive personal water craft (jetski) and a recreational windsurfer

The incident

A windsurfer inadvertently sailed inside the designated operational area for a commercial jetski hire operation. The operational area was marked by a series of coloured marker buoys. On seeing the windsurfer, a tourist operating one of the hire jetskis was taken by surprise and immediately backed off the throttle on the jetski but was unable to avoid running into the windsurfer's board. The windsurfer was not hit by the jetski but was thrown from the board.

The supervisor of the jetski hire operation immediately attended the incident in an inflatable rescue/service boat and assisted the injured windsurfer into his boat and secured the sailboard. He then provided first aid assistance.

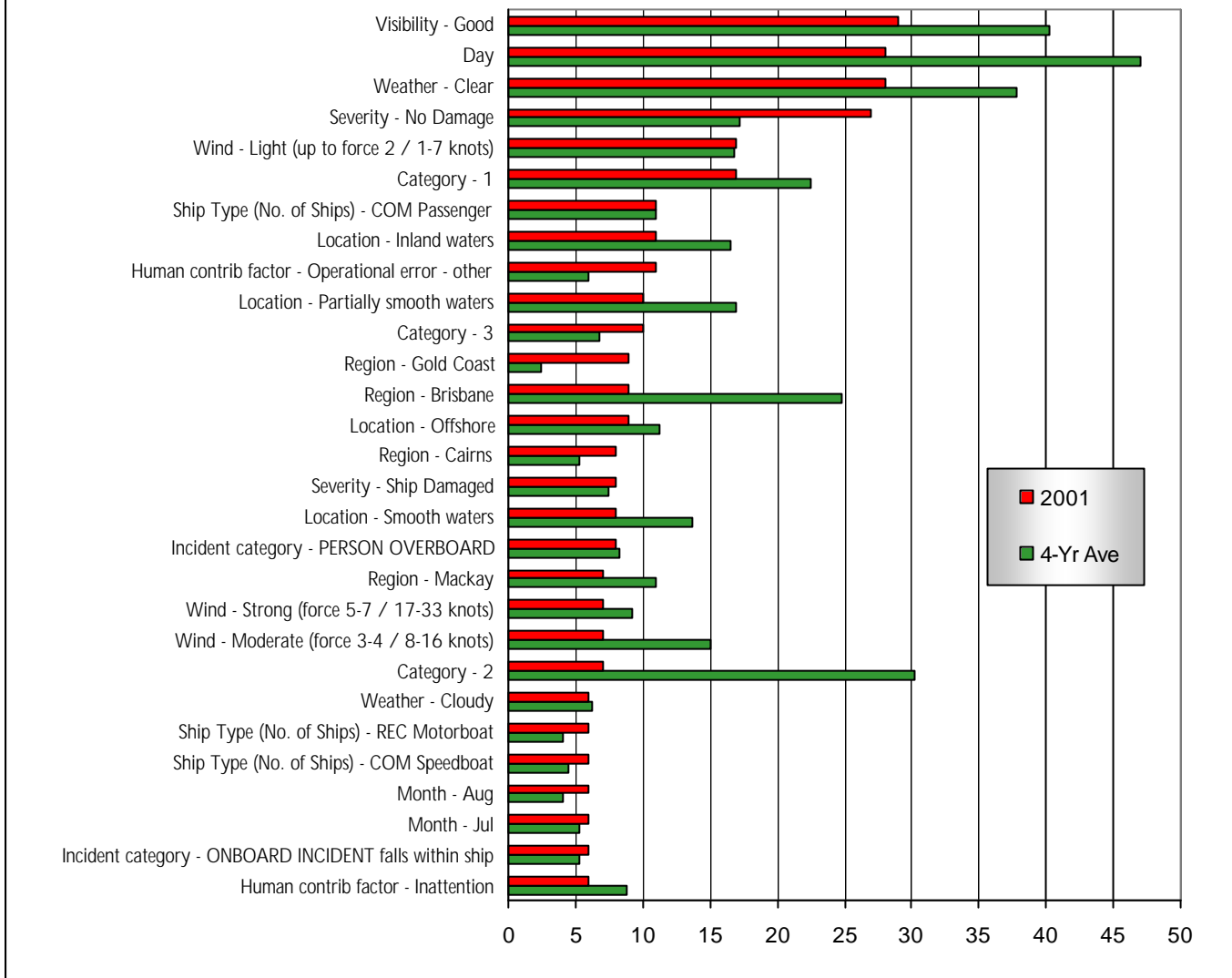
The tourist operating the jetski was not injured. The subsequent investigation determined that the tourist had been properly briefed in the limited operation of the hire jetski. No action was taken against the jetski hire operator, the tourist or the windsurfer.

The outcome

The female windsurfer suffered shock and sustained minor injuries including abrasions, bruising and muscular soreness. Her sailboard and mast were damaged. Queensland Transport continues to focus maritime safety education initiatives on recreational boating activities such as jetskiing, windsurfing, parasailing/surfing and the like.



Figure 11: Characteristics ranked by size of involvement in marine incidents resulting in fatalities and serious injuries



The next largest grouping, involved in some 46 per cent of the FSI incidents in 2001, was the combined Brisbane and Gold Coast regions. 18 of the 39 FSI incidents in 2001 occurred in these two regions. From an exposure perspective, more than 57 per cent of Queensland's registered vessel fleet is located in these two regions indicating a small degree of under-representation in this regard.

An environmental factor, light winds, was the next most frequently occurring attribute of FSI incidents. Light winds were present in more than 43.5 per cent of FSI incidents in 2001.

Onboard incidents such as falls, including other non-serious injuries, were a feature in 28 per cent of FSI incidents in 2001. Other significant FSI incident characteristics included the involvement of human operational error (30.7 per cent), commercial passenger ships (28 per cent), location - inland waters (28 per cent), and location - partially smooth waters (25.5 per cent).

These attributes paint a picture that a large number of FSI incidents occur in good weather, with good visibility, during daylight hours, in inland and partially smooth waters and in the Brisbane and Gold Coast area where there is a predominance of registered vessels operating - both recreational and commercial.

The involvement of recreational speedboats has fallen from 30 per cent of FSI incidents in 2000 to less than 13 per cent in 2001. Recreational motorboats on the other hand were involved in more than 15 per cent of FSI incidents in 2001 compared with 4 per cent of these incidents in 2000.

The vessel

5.1 metre fibreglass recreational half cabin motorboat

The incident

The boat set out in the early evening on a fishing trip involving a journey through partially smooth waters from the mainland to a protected anchorage in the lee of a coastal island. On route the boat appears to have struck a submerged object. The boat began to sink immediately. The master and two passengers were unable to get their lifejackets and found themselves adrift in the sea using only an oil can and a crab pot float for buoyancy.

One of the younger passengers decided to try and swim to the mainland for help, while the two remaining passengers drifted with the current. After four hours swimming the young man made it to shore and a rescue was initiated. After spending the night in the sea, and some 12 hours after his boat had sunk, the master was located still clinging to the crab pot float, and was rescued. Tragically, the third person had been unable to remain afloat and had slipped away and drowned only 15 minutes before rescuers arrived.

The outcome

As well as the total loss of the boat, more importantly, a young adult lost his life in this incident.

Queensland Transport recommends that special attention be given to ensuring safety equipment such as lifejackets, flares and EPIRBs is easily and readily accessible in a vessel, not just in fair weather conditions, but particularly when circumstances deteriorate suddenly.

Given the sharp fall in the number of FSI incidents and associated serious injuries in 2001 (largely attributable to more rigorous classification of these type of incidents), comparison with four-year averages predictably shows significant decreases in the rate of involvement of the majority of incident attributes. In this context, attributes exhibiting growth in their comparative rate of incident involvement (with the four-year average) need to be examined, particularly where the absolute size (percentage) of their involvement in FSI incidents in 2001 is high.

The FSI incident attributes displaying greatest growth in 2001 compared with the previous four-year average include:

- human 'operational error' (+100 per cent)
- incident severity - 'no damage' (+56 per cent)

It should however be noted that characteristics involving small numbers of incidents can show large percentage changes that are not significant and hence these categories are excluded from this analysis.

Human operational error was nominated by investigating officers as a contributing factor in 12 of the 39 FSI incidents in 2001, compared with 11 in 2000. This represents a nine per cent increase in involvement from 2000 to 2001, as well as being significantly over-represented in terms of its four-year average of 6 units of involvement. Of the 12 incidents in 2001 three involved a person overboard and two resulted in the total loss of the ship.

Given that FSI incident numbers in 2001 were 38 per cent lower than the four-year average, corresponding decreases in the rate of involvement of the full range of incident attributes could be expected. The following three of the top thirty attributes showed decreases in excess of 50 per cent when compared with their four-year average rate of involvement:

- category 2 incidents (-77 per cent)
- Brisbane region (-64 per cent), and
- moderate winds (-53 per cent)

The significant incident reductions in the major attributes are an indication that Queensland Transport's co-ordinated education and compliance efforts which focused on reducing the "Top 5" have been effective in 2001. Ongoing review of the "Top 5" will focus on emerging growth attributes such as "human operational error" in 2002.

Study 1

Fatal and serious injury incidents in South-East Queensland

Eighteen FSI incidents occurred in South-East Queensland (Brisbane region and Gold Coast) in 2001. This represented some 46 per cent of the total for the state as a whole, a fall of some 8 per cent compared with the combined regions' representation in 2000. While the rate per vessel on register in 2000 (2.49) was marginally lower than for the state in general (2.86), the category continues to warrant review because it represents a substantial proportion of the state total in a small geographic and densely populated area close to significant resources.

Major factors in FSI incidents in South-East Queensland

As in 2000, the three most frequently occurring attributes of FSI incidents in the Gold Coast and Brisbane regions in 2001 related to ambient conditions including clear weather, good visibility and the daytime period. These factors were each involved in more than 60 per cent of the 18 FSI incidents in South-East Queensland:

- good visibility (66.7 per cent)
- clear weather (66.7 per cent), and
- daytime (72 per cent)

This compares with 74.5 per cent, 72 per cent and 72 per cent respectively for these characteristics statewide.

The involvement of recreational speedboats in FSI incidents in South-East Queensland has decreased in 2001 with involvement in only 3 incidents, 14 fewer than in 2000. Recreational speedboats were involved in 24 marine incidents in total in 2001. Encouragingly, there were no fatalities recorded in 2001 from recreational speedboat incidents in South-East Queensland (4 in 2000). Only 3 serious injuries resulted from recreational speedboat incidents in 2001.

Recreational motorboats on the other hand, show a marked over-representation in the FSI incidents in South-East Queensland - representing more than 22 per cent of the combined regions' FSI incidents. The 4 South-East Queensland FSI incidents involving recreational motorboats resulted in 6 fatalities and a further 2 serious injuries. It is noted that 4 of these fatalities resulted from 1 incident.

Another feature of the FSI incidents in South-East Queensland in 2001 was the significant proportion (55.5 per cent) of the incidents that resulted in no reported damage to the ships involved. This compares with more than 69 per cent for the whole of Queensland.

The next most frequently occurring characteristic of FSI incidents in South-East Queensland in 2001 was inland and smooth waters. There were 11 incidents (61 per cent of the South-East Queensland total) reported in these waters. This compares with 48.7 per cent of FSI incidents occurring in these types of waters for the state as a whole. This apparent over-representation is not surprising given the extent of easily accessible inland and smooth water resources in the South-East Queensland area.

The vessel

6.8 metre fibreglass recreational cabin cruiser

The incident

The cabin cruiser capsized after being struck diagonally by a larger than normal wave during an outbound bar crossing. The master and his two male and one female passengers, were thrown from the vessel, which sank within minutes.

The operator of a nearby water taxi rescued three of the four people from the rough waters. The remaining person was picked up by another passing vessel. The Water Police took all four people ashore. Two of the passengers required medical assistance for minor injuries.

The outcome

While none of those on board suffered any significant injuries, the vessel, valued at more than \$60,000, was totally lost.

The incident serves as a warning to all boaters to exercise extreme caution when crossing coastal bars. Queensland Transport strongly recommends the wearing of lifejackets during high risk activities such as bar crossings.



Factors showing over-representation in FSI incidents in South-East Queensland

Another characteristic showing over-representation compared to the previous four-year average is 'person overboard'. In 2001 there were 3 FSI incidents involving a person overboard (16.7 per cent). This represents a 20 per cent increase over the previous four-year South-East Queensland average and a 50 per cent increase from 2000. However, when compared with the state average involvement for this characteristic in FSI incidents in 2001 (20.5 per cent), South-East Queensland is under-represented.

Study 2

Fatal and serious injury incidents in the Cairns region

The Cairns region had 82 (13.6 per cent) of Queensland's reported marine incidents in 2001 compared with 104 (15 per cent) in 2000. While this represents a decrease in 2001 of some 21 per cent, it continues to be well above the previous four-year average of 67.5 incidents. With 13.6 per cent of the State's reported marine incidents in 2001, the region is also over-represented in terms of exposure based on registered vessel numbers. Only 10.3 per cent of Queensland's registered vessel fleet is based in the Cairns region.

FSI incidents in the Cairns region are significantly over-represented, accounting for 11 (22.9 per cent) of the State's total FSI incidents. These incidents resulted in 2 fatalities and 9 serious injuries representing 16.6 per cent and 25 per cent respectively of the State's total fatalities and serious injuries in 2001. These outcomes are also over-represented when compared with the Cairns region's 2000 fatality and serious injury results.

In 2000 Cairns region reported 5 FSI incidents involving 1 fatality and 4 serious injuries. The 2001 outcomes represent an increase of some 120 per cent in fatalities and serious injuries. When compared with the previous four-year average for fatalities in the Cairns region (2.5), the 2001 outcome represents a 20 per cent improvement. It must be noted that the four-year average for fatalities is elevated by the 6 recorded fatalities in 1997. Cairns region's 9 serious injuries in 2001 are well above the previous four-year average for serious injuries of 3.75.

Major factors in FSI incidents in Cairns region

The four most frequently occurring attributes of FSI incidents in the Cairns region in 2001 related to ambient conditions including clear weather, good visibility, the daytime period and light winds. These factors were each involved in more than 75 per cent of the 11 FSI incidents in the region:

- good visibility (100 per cent)
- clear weather (87.5 per cent)
- daytime (75 per cent), and
- light winds (75 per cent)

This compares with 74.5 per cent, 72 per cent, 72 per cent and 43.6 per cent respectively for these characteristics for the state as a whole.

Commercial passenger vessels are over-represented in 2001 FSI incidents with involvement in 27 per cent (3) of the region's FSI incidents. This compares with the previous four-year average involvement of commercial passenger vessels in 0.5 incidents and involvement in 1 FSI incident in 2000. While commercial passenger vessels represent only 1.3 per cent of Cairns region's total vessel fleet, the region has more than 32 per cent of all registered commercial passenger vessels in Queensland. Commercial passenger vessels were involved in 24 (29.2 per cent) of Cairns region's 82 reported marine incidents in 2001.

Another feature of the FSI incidents in Cairns region in 2001 was the significant proportion (87.5 per cent) of the incidents that resulted in no reported damage to the ships involved. This compares favourably with 69+ per cent for the whole of Queensland.



The vessel

7 metre alloy commercial passenger vessel – twin hull powered by two 90hp outboards.

The incident

The vessel, with its master and eleven passengers on board, was being operated in partially smooth water limits about one nautical mile from shore. Travelling at an estimated 18 knots in choppy seas with moderate winds, the ship pitched to the starboard side causing many of the passengers who were standing to be thrown to one side. This in turn contributed to the ship capsizing.

The master and all passengers were either thrown from the vessel or ended up under the upturned hulls. All on board managed to subsequently clamber onto the upturned hulls. The master activated the vessel's EPIRB and the vessel drifted for about one and a half hours before a Customs helicopter arrived and winched up two injured/distressed passengers. Subsequently the helicopter returned to advise that a rescue vessel was on its way and to remain calm.

The rescue vessel arrived and all the remaining passengers and the master were assisted to the rescue vessel and transferred to a nearby island.

The outcome

Fortunately, there were no fatalities and only a few minor injuries. Most of the passengers lost their personal effects including cameras and the like. The vessel was recovered and was subsequently ordered to undergo a further survey.

Factors showing over-representation in FSI incidents in Cairns region

There are numerous Cairns region FSI incident characteristics showing over-representation compared to their previous four-year averages. These include:

- person overboard - 2 compared with four-year average of 0.75
- onboard incident (falls) - 2 compared with four-year average of 0.25
- human operational error - 2 compared with four-year average of 0
- inadequate crew training - 2 compared with four-year average of 0.

It must again be noted that the numbers involved are small and the variations may be due to random factors and are not statistically significant.

**Study 3
Fatal and serious injury incidents involving commercial vessels**

Commercial vessel registration numbers have been steadily increasing over the last five years as shown earlier in Figure 5. In 2001, commercial vessels represented some 3.23 per cent of Queensland's registered vessel fleet, but were involved in 25 per cent (3) of the State's twelve marine fatalities.

While this represents a stark over-representation in terms of this dimension of exposure, it also represents a 100 per cent improvement over the 6 commercial vessel fatalities outcome recorded in 2000.

Commercial vessels were involved in 27 of the State's 39 FSI incidents (69.2 per cent) in 2001 - marginally above the four-year average involvement rate of 62.25 per cent. As well as the 3 fatalities, a further 25 serious injuries resulted from these 27 FSI incidents.

From the perspective of regional involvement in commercial vessel FSI incidents in 2001, a number of features can be highlighted. Three regions show a sizeable involvement in these incidents. Mackay region recorded the highest level of commercial vessel involvement with 7 FSI incidents - down from 15 in 2000 and below the region's four-year average of 9.5. Cairns region recorded 6 incidents - up from 3 in 2000 and well above the region's four-year average involvement of 2.75 incidents. The Gold Coast recorded 5 incidents - up from 3 in 2000 and well above their four-year average of 0.75 FSI incidents involving commercial vessels. Brisbane region recorded only 3 FSI incidents involving commercial vessels in 2001 - down from 15 in 2000 and well below the region's four-year average of 12 units of involvement.

In 2000, 16 commercial vessel FSI incidents occurred in offshore waters. In 2001 the comparative number of incidents has fallen by 62.5 per cent to 6 - and is now below the four-year average of 8.25 units of involvement.

The incident type 'person overboard' was over-represented in FSI incidents in 2000 involving commercial vessels, figuring in 5 of the 6 fatal incidents involving commercial vessels. In 2001, there were 5 FSI incidents involving commercial vessels where a person ended up overboard. Of these, 2 resulted in fatality - 1 from a commercial fishing vessel and 1 from a commercial passenger vessel.

Another feature of FSI incidents involving commercial vessels in 2001 is the relative proportion of these incidents classified as Category 1 (Category 1 incidents are the most serious incident category - refer Annex A). Ten such incidents were classified as Category 1 in 2001, down from 15 in 2000, but still above the four-year average of 8.5 units of involvement.

In terms of involvement of differing commercial vessel types, commercial passenger vessel were involved in 11 FSI incidents in 2001, down from 16 in 2000, but consistent with the four-year average for commercial passenger vessels. Commercial speedboats were involved in 6 FSI incidents and continue to be over-represented when compared with their four-year average involvement of 4.5. Commercial fishing vessels have shown a 100 per cent fall in involvement in 2001, being involved in only 5 FSI incidents. This represents a marked improvement on the 10 FSI incidents involving fishing vessels in 2000. Fishing vessel involvement in 2001 is well below the four-year average involvement of 7.5. A more in-depth study of commercial fishing vessel involvement in marine incidents is included below.

Study 4 Involvement of commercial fishing vessels in marine incidents

As mentioned above, commercial fishing vessel involvement in FSI incidents in 2001 fell by 100 per cent compared with 2000. In terms of marine incidents generally, in 2001, fishing vessels were involved in 87 (14.4 per cent) of the 604 reported marine incidents, down marginally from their 16.5 per cent involvement in 2000.

In 2001, commercial fishing vessels represented less than 0.006 per cent of all registered vessels in Queensland. Despite their representing such a small proportion of registered vessels in 2001, they were involved in:

- 14.4 per cent of all reported marine incidents
- 25 per cent of all incidents resulting in serious injury
- 16.6 per cent of all incidents involving fatality, and
- 28.8 per cent of incidents where the vessel was a total loss

Of all the reported incidents involving fishing vessels in 2001, some 51.7 per cent of these incidents occurred in offshore waters.

With these statistics in view, it is worth noting that there were 22 fishing vessels lost in 2000 and 13 in 2001. While these incidents represent more than 35 per cent of all vessels lost - and many of these in offshore waters - there has not been any fatality or serious injury result from these 'ship lost' incidents. This is at odds with the 'ship lost' outcomes for incidents involving other classes of vessel. For example, in 2001 there were 45 ships lost in total. Thirteen of these were fishing vessels yet for these 13 fishing vessel incidents, there were no fatalities or serious injuries. However, the remaining 32 'ship lost' incidents (other than fishing vessels) in 2001 resulted in 6 fatalities and 3 serious injuries, representing 50 per cent and 8.3 per cent respectively of the total fatalities and serious injuries recorded in 2001.

The vessel

12.4 metre steel hull commercial fishing vessel.

The incident

The fishing vessel was carrying a full load of live fish when it started to take water at about 0030 hours. The vessel lost its dories and started to list before losing engine power and rolling onto its side in heavy seas and strong winds. The master immediately issued a mayday and activated the vessel's EPIRB.

It appears that a seawater hatch to a live fish tank may not have been properly secured thereby allowing sea water to enter the hull and destabilize the vessel.

The five crew stayed with the capsized vessel for another hour and abandoned ship shortly before the vessel finally sank in about 65 metres of water.

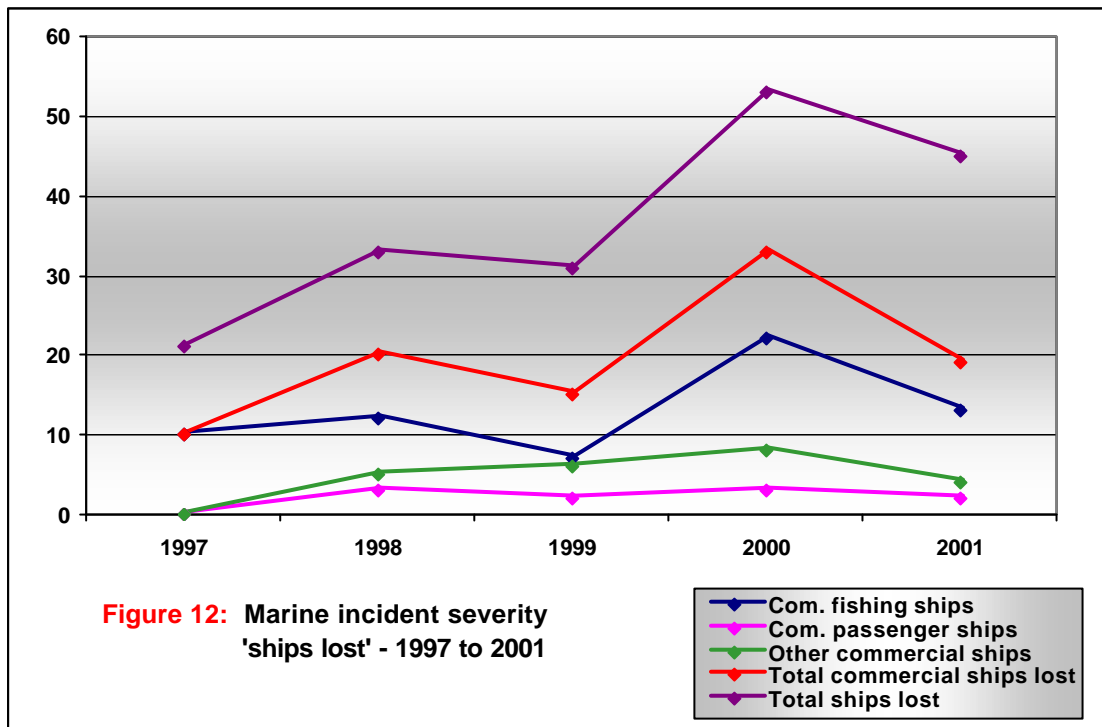
The crew remained huddled together in the water for about 20 minutes before a rescue helicopter reached them and deployed a liferaft. The crew were picked up by an air-sea rescue vessel 30 minutes later and were safely ferried to harbour some two hours later.

The outcome

While no lives were lost or injuries sustained, the vessel valued at more than \$80,000 was lost. There was no action taken against the vessel's master for breaches of his safety obligations.



Figure 12 shows a comparison for the past five years of ships lost by commercial vessel type as well as total ships lost. The figure clearly shows the over-representation of fishing vessels in the 'ship lost' incident outcome.



Study 5 Marine incidents occurring in offshore waters

The offshore category is one of four incident location descriptors and includes waters beyond designated smooth and partially smooth waters off the Queensland coast. In 2001, 115 (19 per cent) of the state's 604 reported marine incidents occurred in offshore waters. Of these incidents, 9 resulted in fatality or serious injuries. This represents a slight fall in the proportion of FSI incidents in offshore waters from 2000 and is marginally below the previous four-year average of 11.25 for offshore FSI incidents.

Consistent with other major categories reviewed, most offshore incidents occurred in clear weather conditions, good visibility and in the daytime. Having said this, moderate winds, strong winds and adverse sea state between them were identified as contributing factors on 13 occasions to these 9 offshore FSI incidents.

The vessels involved in offshore FSI incidents were 3 commercial fishing vessels, 3 commercial passenger vessels and 3 recreational vessels. While commercial fishing vessels were over-represented in these incidents in 2000, recreational vessels are marginally over-represented in 2001 when compared with their previous four-year average involvement. Two recreational motorboats were involved in 2001 compared with a previous four-year average involvement of 0.5. One recreational sailboat was also involved in an offshore FSI incident in 2001. The previous four-year average involvement of this class of vessel is only 0.25. These numbers are however small and are not statistically significant.

The 'ships lost' dimension of marine incidents in offshore waters also shows as over-represented in 2001. Two (22.2 per cent) of the 9 offshore FSI incidents resulted in the vessels being lost, and a further 26 (24.5 per cent) of the 106 non-FSI offshore incidents resulted in loss of the vessel involved. This compares with a previous four-year average of 17.5.

The Gladstone region, with 3 offshore FSI incidents in 2001, recorded the largest regional involvement. The extent of Gladstone region's involvement has nonetheless fallen in 2001 to below its previous four-year average of 3.25.

Study 6

Fatal and serious injury incidents involving recreational vessels

To provide a context for considering the involvement of recreational vessels in FSI incidents, there were 162,152 recreational vessels registered with Queensland Transport as at 31 December 2001, an increase of 5.6 per cent in 2001. Recreational vessels represent 96.8 per cent of Queensland's total registered vessel fleet. Recreational speedboats make up 83.8 per cent and recreational motorboats 13.5 per cent of all registered recreational vessels.

In 2001, recreational vessels were involved in 16 FSI incidents - 41 per cent of all FSI incidents. This was well down on the four-year average of 31 units of involvement. Twelve fatalities resulted from marine incidents in Queensland in 2001. Of these, 9 (75 per cent) resulted from incidents involving recreational vessels, an increase in fatal involvement of 50 per cent over 2000. Of the 36 serious injuries recorded in 2001, 11 (30.5 per cent) resulted from incidents involving recreational vessels.

Recreational speedboats and recreational motorboats were the two recreational vessels classes most involved in FSI incidents in 2001. Recreational speedboats were involved in 5 FSI incidents and were well under-represented when compared with their previous four-year average involvement of 16. Recreational motorboats were involved in 6 FSI incidents, a 50 per cent increase over their involvement in 2000 and 118 per cent over-representation when compared with their previous four-year involvement of 2.75. Recreational speedboat incidents resulted in 1 fatality in 2001, whereas recreational motorboat incidents resulted in 6 fatalities, 4 from 1 incident.

Analysis shows that the major factors associated with recreational vessel incidents involving fatality and/or serious injuries in 2001 were, as expected, incidents involving good visibility, daylight hours and clear conditions. These factors were involved in 69 per cent, 62.5 per cent and 69 per cent of recreational vessel FSI incidents respectively. Given the large percentage of the state's total activity concentrated in South-East Queensland, this area displayed some 62.5 per cent of total recreational vessel incidents involving fatality and/or serious injury in Queensland.

The increased involvement of recreational vessels in FSI incidents in 2001 and their concentration in South-East Queensland will result in continued targeting of compliance and educational initiatives in this region.

The vessel

11.6 metre recreational timber motor cruiser

The incident

The vessel had only recently been purchased and was making the voyage with four crew on board from Mooloolaba on the Sunshine Coast to its new home in Newcastle.

Four days after its departure from Mooloolaba, the Brisbane Water Police were contacted by the father of one of the crew, concerned that the vessel was overdue in Newcastle and that there had been no contact with the crew. A comprehensive air and sea search was initiated by AUSSAR. Three days later a commercial charter vessel reported locating a submerged vessel in shallow waters 13 kilometres offshore. The wreckage was subsequently identified as the missing motor cruiser. The search continued for the four crew.

Based on the vessel's departure from Mooloolaba it is estimated that the vessel went down during the night in rough seas and gale force winds. The four crew were not located and were presumed to have perished at sea.

The outcome

The vessel was lost and is not salvageable. The four crew have never been found. A coronial inquiry following a comprehensive police investigation is pending.



Boating incidents

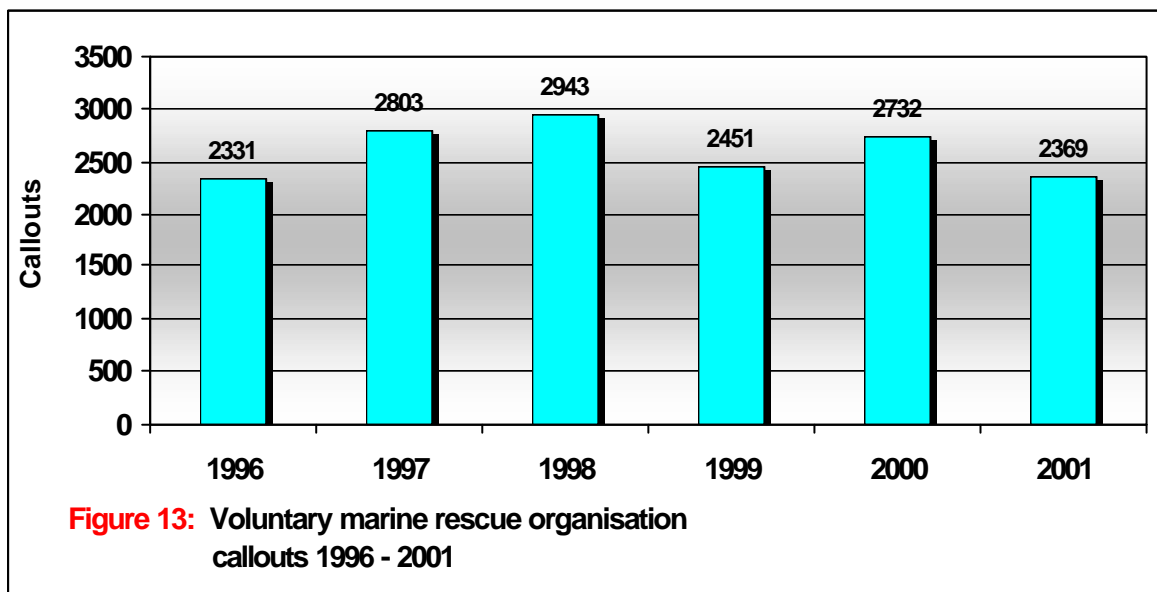
Boating incidents are those incidents which involved calls for assistance from volunteer rescue authorities for problems such as running out of fuel, fouled propellers and the like. As mentioned earlier, they can be viewed as ‘marine incidents that might have been’ and are an important early-warning barometer of safety performance in the maritime environment.

While boating incidents are not officially counted as marine incidents (unless their severity qualifies them as such), an analysis of the boating incident data provided by regional volunteer marine rescue organisations has nonetheless been undertaken to supplement the analysis of marine incidents contained in this report. Boating incident returns also provide a useful tool for validation of the level of marine incident reporting by highlighting incidents that might have escaped the normal marine incident reporting process.

Regional volunteer marine rescue organisations including the Australian Volunteer Coastguard Association and the Queensland Volunteer Marine Rescue Organisation again in 2001 combined to provide a strong safety net for the professional and recreational maritime community in Queensland. As well as attending callouts for assistance, they perform an important role in extending the influence of Queensland Transport in its administration of maritime safety programs under the Act.

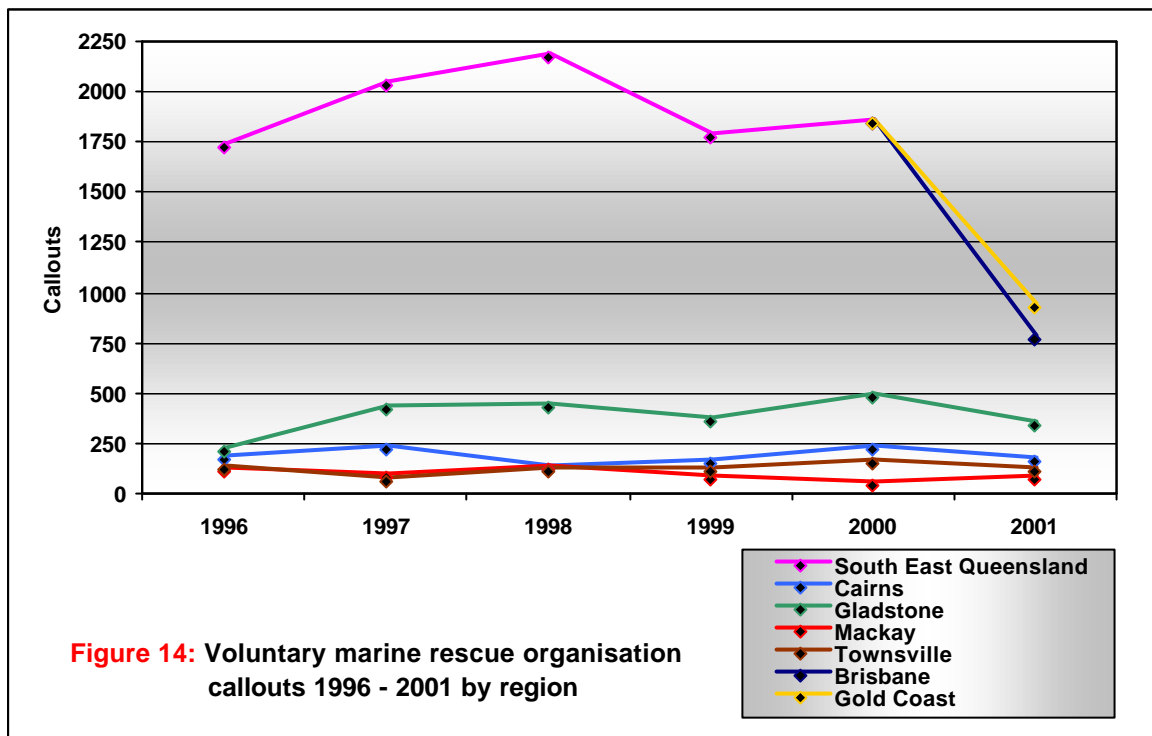
Callouts for assistance

Voluntary marine rescue and coastguard flotillas reported responding to 2369 callouts for assistance statewide in 2001 – some 360 less callouts than in 2000 and well below the previous four-year average of 2732. Figure 13 shows comparative boating incident callout numbers for the past 6 years.



South-East Queensland (Brisbane and the Gold Coast regions) with more than 57 per cent of the state’s registered vessel fleet, reported 1695 (71.55 per cent) of the state’s callouts in 2001. This is significantly higher than this region’s corresponding proportion of marine incidents (44.3 per cent), but still well below the combined region’s four-year average number of callouts of 1954. After the combined South-East Queensland region, the next most significant number of callouts occurred in the Gladstone region with 335 (14.1 per cent) callouts – also well below that region’s four-year average number of callouts of 420.

Figure 14 provides a comparative regional breakdown of boating incident callout numbers over the last 6 years. Disaggregated data from boating incident callouts was not available to Queensland Transport for the South-East Queensland area until 2000. In 2000 and 2001 South-East Queensland data is broken up according to regional areas - Brisbane and Gold Coast.



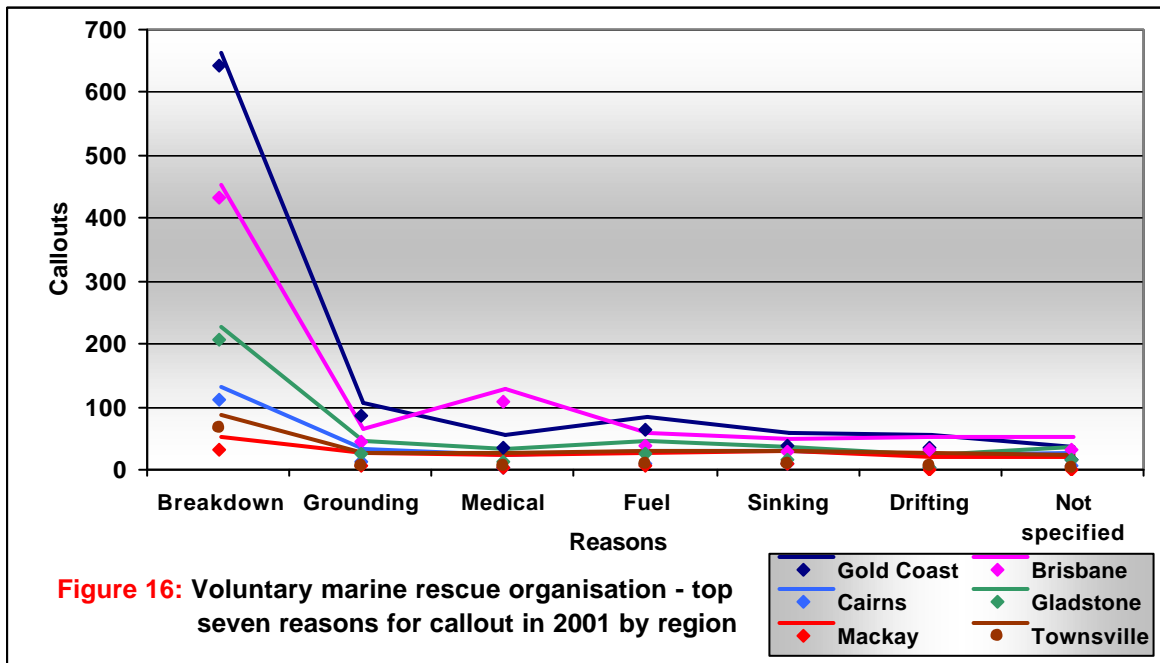
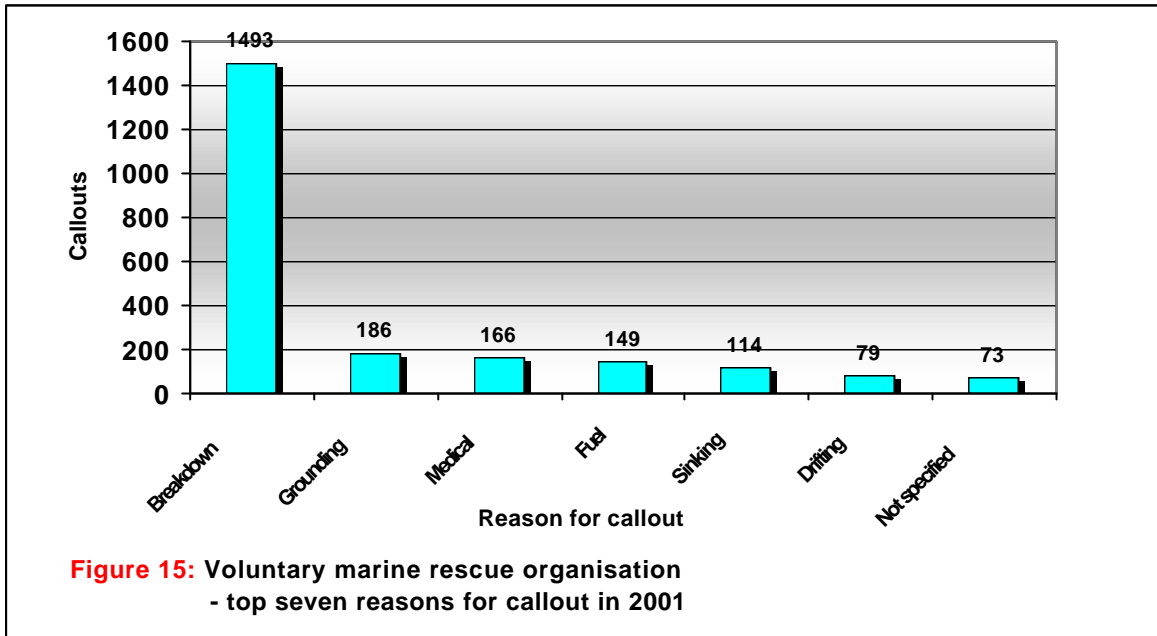
Reasons for callouts

During 2001 the reporting system for boating incidents was changed. Some of the changes included the aggregation of a number of the formerly used reasons for callout (those dealing with breakdowns) and the addition of a number of new callout reasons including EPIRBs, flares, medical and the like. These new types of callouts may have been labelled as unspecified in past years. The predominant reasons for the assistance provided by volunteer organisations in 2001 included:

- breakdowns – 1493 callouts (63 per cent)
- grounding of the vessel – 186 (8 per cent)
- medical needs - 166 (7 per cent), and
- fuel problems – 149 (6.3 per cent)

Fuel problems mentioned above include contaminated fuel, leaking fuel lines, running out of fuel and the like.

Figures 15 and 16 show the top seven reasons for callout including a regional breakdown of callout numbers for each of these reasons. These reasons for callout reinforce the ongoing need for marine safety education and awareness programs to address these basic boating issues. Queensland Transport uses this data to regularly update the focus of its *Know Know Your Boat* campaign that has been running nationally since December 2000.



Data relating to boating incidents can be found in Tables 3:30 and 3:31 in Part 3 of this report.

Part 3

Marine incident related statistical data



Notes for reference to tables

- Table 3.1 data source is the ABS
- Regions are coded as follows:
GC = Gold Coast
BN = Brisbane
GL = Gladstone
MK = Mackay
TV =Townsville
CN = Cairns
- Gold Coast region was not established for reporting purposes prior to 2000.
- When referring to ship type, PWC refers to Personal Water Craft as defined under Schedule 11 of the *Transport Operations (Marine Safety) Regulation 1995*.
- Wind force in tables 3.14 and 3.28 are based on the Beaufort Scale.

Maritime fatalities data by state and territory

Table 3.1 Maritime fatalities per 1,000,000 persons 1976 to 2000 by state and territory

State / territory	76-79	80-84	85-89	90-94	95-99	2000
New South Wales	8.45	5.1	4.27	3.29	2.65	1.7
Victoria	9.03	5.16	4.37	4.1	2.04	2.9
Queensland	12.31	5.23	4.02	5.14	2.59	2.2
South Australia	13.18	7.35	4.59	3.99	2.43	0
West Australia	10.09	8.7	4.94	4.71	4.12	0.5
Tasmania	34.82	26.03	14.7	15.59	15.96	4.3
Northern Territory	25.81	16.94	11.52	22.53	5.38	10.2
Australian Capital Territory	11.63	0.86	2.27	2.05	0.65	0

Marine incidents by characteristic and year: disaggregated data concerning fatalities and serious injuries

Table 3.2 Incidents involving fatalities and serious injuries 1996 - 2001 and year 2001 by region

Incidents	1996	1997	1998	1999	2000	2001	GC	BN	GL	MK	TV	CN
No of incidents involving fatalities	8	9	8	9	12	9	1	2	3	1	0	2
No of incidents involving serious injuries	57	34	51	59	71	30	8	7	2	6	1	6
Fatality/serious injury incidents	65	43	59	68	83	39	9	9	5	7	1	8

Table 3.3 Fatalities and serious injuries 1996 - 2001 and year 2001 by region

Fatalities and serious injuries	1996	1997	1998	1999	2000	2001	GC	BN	GL	MK	TV	CN
No of fatalities	8	12	8	10	12	12	1	5	3	1	0	2
No of serious injuries	80	56	64	67	83	36	9	9	2	6	1	9
Total fatalities and serious injuries	88	68	72	77	95	48	10	14	5	7	1	11



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Table 3.2 Incidents involving fatalities and serious injuries 1996 - 2001 and year 2001 by region

Incidents	1996	1997	1998	1999	2000	2001	GC	BN	GL	MK	TV	CN
No of incidents involving fatalities	8	9	8	9	12	9	1	2	3	1	0	2
No of incidents involving serious injuries	57	34	51	59	71	30	8	7	2	6	1	6
Fatality/serious injury incidents	65	43	59	68	83	39	9	9	5	7	1	8

Table 3.3 Fatalities and serious injuries 1996 - 2001 and year 2001 by region

Fatalities and serious injuries	1996	1997	1998	1999	2000	2001	GC	BN	GL	MK	TV	CN
No of fatalities	8	12	8	10	12	12	1	5	3	1	0	2
No of serious injuries	80	56	64	67	83	36	9	9	2	6	1	9
Total fatalities and serious injuries	88	68	72	77	95	48	10	14	5	7	1	11

Table 3.4 Environmental factors contributing to fatal and serious injury incidents 1996 - 2001 and year 2001 by region

Environmental factors	1996	1997	1998	1999	2000	2001	GC	BN	GL	MK	TV	CN
Bar conditions	0	2	0	3	3	0	0	0	0	0	0	0
Floating or submerged object	1	0	2	1	1	1	0	0	0	0	0	1
Hazardous season (cyclones etc)	1	0	0	1	0	0	0	0	0	0	0	0
Hazardous waters - coral reefs	0	0	0	0	0	1	0	0	0	1	0	0
Hazardous waters - shifting channels	0	0	0	0	0	1	1	0	0	0	0	0
Hazardous waters - uncharted hazards	2	0	0	0	0	1	0	0	0	0	0	1
Heavy traffic area	0	0	1	0	0	0	0	0	0	0	0	0
Other	1	3	0	0	3	2	0	0	2	0	0	0
Poor visibility	1	2	1	0	1	1	1	0	0	0	0	0
Sea state	2	3	4	6	12	7	1	0	3	1	0	2
Wash of passing vessel	5	0	4	3	1	1	1	0	0	0	0	0
Wind	1	3	2	1	0	3	0	0	1	0	0	2
Total environmental factors attribution	14	13	14	15	21	18	4	0	6	2	0	6

Table 3.5 Human factors contributing to fatal and serious injury incidents 1996 - 2001 and year 2001 by region

Human factors	1996	1997	1998	1999	2000	2001	GC	BN	GL	MK	TV	CN
Alcohol or drugs	2	3	3	2	1	1	0	0	0	0	0	1
Commercial pressure	0	1	0	1	1	1	0	1	0	0	0	0
Excessive speed	5	0	3	5	2	2	0	1	1	0	0	0
Fatigue	0	1	0	2	0	2	1	0	0	1	0	0
Inadequate training of crew	0	3	2	1	4	2	0	0	0	0	0	2
Inappropriate instructions to crew - other	0	1	1	0	0	0	0	0	0	0	0	0
Poor communication of instructions to crew	0	1	0	0	1	0	0	0	0	0	0	0
Inattention	4	4	6	5	17	7	2	2	0	2	1	0
Insufficient maintenance	0	0	0	1	0	0	0	0	0	0	0	0
Insufficient planning	0	0	0	0	1	1	0	1	0	0	0	0
Navigation error - failure to keep proper lookout	10	0	5	2	1	1	0	1	0	0	0	0
Navigation error - lack of knowledge/experience	5	5	5	1	3	1	0	0	0	0	0	1
Navigation error - other	3	1	0	4	1	1	1	0	0	0	0	0
Navigation error - violation of Collision regs	1	1	3	1	0	2	0	0	1	1	0	0
Operational error - other	6	5	2	6	10	12	1	3	2	3	0	3
Poor communications	1	0	0	1	0	1	0	1	0	0	0	0
Violation of standard procedures	0	0	4	1	0	0	0	0	0	0	0	0
Violation of statutory rules or standards	0	0	1	0	1	1	0	1	0	0	0	0
Total human factors attribution	37	26	35	33	43	35	5	11	4	7	1	7



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Table 3.6 Material factors contributing to fatal and serious injury incidents 1996 - 2001 and year 2001 by region

Material factors	1996	1997	1998	1999	2000	2001	GC	BN	GL	MK	TV	CN
Bridge or navigation failure	0	0	0	0	2	0	0	0	0	0	0	0
Electrical failure	1	1	0	0	1	1	0	0	1	0	0	0
Equipment failure - other	1	7	2	6	0	1	0	0	0	1	0	0
Fuel or gas leak	0	0	0	0	1	1	0	1	0	0	0	0
Hull failure	0	0	0	1	0	1	0	0	1	0	0	0
Inadequate stability - other	1	0	0	0	1	1	0	0	0	0	0	1
Inappropriate hull or equipment - design fault	2	0	0	0	2	1	0	0	0	0	0	1
Insufficient maintenance of hull/equipment	0	0	0	2	0	0	0	0	0	0	0	0
Insufficient safety equipment	0	2	0	0	0	0	0	0	0	0	0	0
Machinery failure	0	2	3	1	0	0	0	0	0	0	0	0
Other	2	2	1	2	8	1	0	1	0	0	0	0
Shore structure badly designed/built/maintained	2	0	0	0	0	0	0	0	0	0	0	0
Total material factors attribution	9	14	6	12	15	7	0	2	2	1	0	2

Table 3.7 Fatal and serious injury incident type 1996 - 2001 and year 2001 by region

Incident type classifications	1996	1997	1998	1999	2000	2001	GC	BN	GL	MK	TV	CN
Capsizing	1	2	0	1	1	1	1	0	0	0	0	0
Capsizing flooding	0	0	0	1	1	0	0	0	0	0	0	0
Capsizing sinking	0	4	2	0	3	0	0	0	0	0	0	0
Capsizing swamping	0	0	2	4	2	2	0	2	0	0	0	0
Collision between ships	17	1	12	11	8	2	0	1	0	1	0	0
Collision with a fixed object	3	1	2	2	4	1	0	0	1	0	0	0
Collision with an animal	0	0	0	0	0	0	0	0	0	0	0	0
Collision with floating object	0	0	3	0	0	1	0	0	0	0	0	1
Collision with overhead obstruction	0	0	0	0	1	0	0	0	0	0	0	0
Collision with submerged object	1	0	0	0	2	0	0	0	0	0	0	0
Collision with a wharf	0	0	0	0	0	0	0	0	0	0	0	0
Explosion	1	0	1	2	1	2	0	2	0	0	0	0
Fire	2	2	0	2	0	0	0	0	0	0	0	0
Grounding intentional	0	0	1	1	1	0	0	0	0	0	0	0
Grounding unintentional	0	0	1	2	5	1	1	0	0	0	0	0
Loss of ship	0	0	1	0	0	0	0	0	0	0	0	0
Loss of stability	0	0	0	0	0	0	0	0	0	0	0	0
Onboard incident crushing or pinching	1	2	3	5	4	0	0	0	0	0	0	0
Onboard incident falls within ship	0	3	1	10	7	6	1	0	1	2	0	2
Onboard incident other onboard injury	17	10	8	5	16	6	2	1	2	1	0	0
Other	2	0	1	0	0	1	0	0	0	0	0	1
Other - Close Call	0	0	0	0	0	0	0	0	0	0	0	0
Other - Crime Issue	0	0	0	0	0	0	0	0	0	0	0	0
Other - Ship Adrift	0	0	0	0	0	0	0	0	0	0	0	0
Other personal injury caused by operation of ship	2	3	7	2	7	1	0	0	0	1	0	0
Other personal injury diving incident	1	1	1	1	1	0	0	0	0	0	0	0
Other personal injury hit by propellor or ship	4	2	3	1	2	3	1	0	0	0	1	1
Other personal injury parasailing incident	0	1	2	1	0	1	0	0	0	0	0	1
Other personal injury water ski incident	5	3	3	3	5	2	1	1	0	0	0	0
Person overboard	6	7	5	11	11	8	1	2	1	2	0	2
Structural failure	0	0	0	1	1	1	1	0	0	0	0	0
Incident types distribution	63	42	59	66	83	39	9	9	5	7	1	8

Table 3.8 Location of fatal and serious injury incidents 1996 - 2001 and year 2001 by region

Location classifications	1996	1997	1998	1999	2000	2001	GC	BN	GL	MK	TV	CN
Not specified	2	10	3	1	1	1	1	0	0	0	0	0
Inland waters	19	11	19	17	18	11	2	4	2	0	1	2
Offshore	6	4	11	10	20	9	2	1	3	1	0	2
Partially smooth waters	16	12	10	28	19	10	0	3	0	4	0	3
Smooth waters	20	5	15	10	25	8	4	1	0	2	0	1
Distribution by location classifications	63	42	58	66	83	39	9	9	5	7	1	8



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Table 3.9 Fatal and serious injury incidents by month 1996 - 2001 and year 2001 by region

Months	1996	1997	1998	1999	2000	2001	GC	BN	GL	MK	TV	CN
January	5	1	10	7	14	3	0	1	0	0	0	2
February	7	2	7	5	4	0	0	0	0	0	0	0
March	7	4	1	5	14	4	0	1	0	3	0	0
April	3	3	2	11	10	3	1	1	0	1	0	0
May	3	5	9	7	7	3	1	0	0	1	0	1
June	4	3	10	4	6	2	0	0	1	1	0	0
July	6	9	3	2	7	6	1	2	1	1	0	1
August	4	2	0	5	8	6	2	0	1	0	0	3
September	5	5	5	6	4	1	0	1	0	0	0	0
October	3	2	4	2	4	5	2	1	0	0	1	1
November	7	2	2	5	2	5	2	1	2	0	0	0
December	9	4	5	7	3	1	0	1	0	0	0	0
Fatality/serious injury incidents	63	42	58	66	83	39	9	9	5	7	1	8

Table 3.10 Fatal and serious injury incidents 1996 - 2001 by region

Region	1996	1997	1998	1999	2000	2001
Gold Coast	-	-	-	-	10	9
Brisbane	42	14	30	28	29	9
Gladstone	8	5	9	17	16	5
Mackay	7	12	7	11	15	7
Townsville	4	6	5	7	7	1
Cairns	1	5	7	3	6	8
Not specified	1	0	0	0	0	0
Fatality/serious injury incidents by region:	63	42	58	66	83	39

Table 3.11 Fatal and serious injury incidents by time of day 1996 - 2001

Time of day	1996	1997	1998	1999	2000	2001
Not specified	1	2	3	1	5	4
Dawn	1	1	0	3	3	1
Day time	43	33	41	54	62	28
Dusk	8	1	3	2	3	1
Night time	10	5	11	6	10	5
Fatality/serious injury incidents by TOD	63	42	58	66	83	39



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Table 3.12 No. of ships involved in fatal and serious injury incidents 1996 - 2001 by ship type

Ship type	1996	1997	1998	1999	2000	2001
Not specified	1	1	1	0	0	0
COM Fishing	8	7	7	6	10	5
COM Hire & Drive	0	0	0	1	0	0
COM Hire & Drive (House)	0	0	3	0	0	0
COM Hire & Drive (Motor)	1	1	0	0	0	2
COM Hire & Drive (PWC)	3	0	3	3	3	0
COM Hire & Drive (Sail)	0	2	1	0	3	0
COM Hire & Drive (Speed)	0	3	1	1	0	0
COM Houseboat	0	0	0	0	1	0
COM Hovercraft	0	0	1	0	0	0
COM Motorboat	0	2	1	0	0	1
COM Non-passenger	0	1	0	0	11	1
COM Other	6	0	1	8	3	1
COM Passenger	8	3	13	11	16	11
COM PWC (jetski)	4	0	3	1	1	0
COM Sailboat	0	2	0	8	0	0
COM Speedboat	4	2	5	4	7	6
REC Houseboat	2	1	1	1	1	0
REC Motorboat	9	1	4	2	4	6
REC Other	3	2	1	0	0	2
REC Paddle (row) boat	1	1	1	0	0	0
REC PWC (jetski)	6	4	5	7	11	1
REC Sailboat	4	5	0	4	4	2
REC Speedboat	13	8	19	19	18	5
No of ships by ship types	73	46	71	76	93	43

Table 3.13 Visibly in fatal and serious injury incidents 1996 - 2001 and year 2001 by region

Visibility	1996	1997	1998	1999	2000	2001	GC	BN	GL	MK	TV	CN
Not specified	6	11	9	10	14	5	2	2	1	0	0	0
Poor	5	2	4	1	3	3	1	1	1	0	0	0
Fair	7	4	12	8	11	2	0	0	0	2	0	0
Good	45	25	33	47	55	29	6	6	3	5	1	8
Fatality/serious injury incidents	63	42	58	66	83	39	9	9	5	7	1	8

Table 3.14 Weather in fatal and serious injury incidents 1996 - 2001 and year 2001 by region

Weather	1996	1997	1998	1999	2000	2001	GC	BN	GL	MK	TV	CN
Not specified	10	11	13	7	14	4	0	3	1	0	0	0
Clear	43	23	37	47	46	28	8	4	3	5	1	7
Cloudy	4	1	3	5	16	6	1	2	1	1	0	1
Flood	0	0	0	0	0	0	0	0	0	0	0	0
Hazy	2	0	2	1	2	0	0	0	0	0	0	0
Other	0	0	1	0	1	0	0	0	0	0	0	0
Rain	4	7	2	6	4	1	0	0	0	1	0	0
Fatality/serious injury incidents	63	42	58	66	83	39	9	9	5	7	1	8

Table 3.15 Wind in fatal and serious injury incidents 1996 - 2001 and year 2001 by region

Wind	1996	1997	1998	1999	2000	2001	GC	BN	GL	MK	TV	CN
Not specified	20	12	20	7	15	4	1	2	1	0	0	0
No wind	4	2	8	6	9	4	1	2	0	1	0	0
Light (up to force 2 / 1-7 knots)	19	8	12	25	22	17	4	3	2	1	1	6
Moderate (force 3-4 / 8-16 knots)	16	14	11	17	20	7	2	1	1	2	0	1
Strong (force 5-7 / 17-33 knots)	4	5	6	11	15	7	1	1	1	3	0	1
Gale (force 8 and above / more than 33 knots)	0	1	1	0	2	0	0	0	0	0	0	0
Fatality/serious injury incidents	63	41	57	66	83	39	9	9	5	7	1	8



Marine incidents by characteristic and year: disaggregated data concerning all marine incidents

Table 3.16 All incidents by category 1996 - 2001 and year 2001 by region

Incident category	1996	1997	1998	1999	2000	2001	GC	BN	GL	MK	TV	CN
Not assigned	8	11	11	0	0	1	0	1	0	0	0	0
Category 1	45	57	86	78	122	96	10	32	9	10	14	21
Category 2	311	362	408	477	118	86	14	25	14	17	5	11
Category 3	-	-	-	-	210	250	32	77	36	48	22	35
Category 4	-	-	-	-	164	171	19	58	17	52	10	15
Total incidents all categories	364	430	505	555	614	604	75	193	76	127	51	82

Note: Category 3 and Category 4 were not used in marine incident classification prior to 2000. Definitions of the four marine incident categories are included at Annex B.

Table 3.17 Environmental conditions 1996 - 2001 and year 2001 by region

Environmental conditions	1996	1997	1998	1999	2000	2001	GC	BN	GL	MK	TV	CN
Abnormal tidal conditions	2	12	24	17	6	14	1	4	2	5	1	1
Bar conditions	0	4	5	9	4	2	1	1	0	0	0	0
Floating or submerged object	3	7	17	24	23	17	1	7	2	0	1	6
Hazardous season (cyclones etc)	6	5	6	15	5	1	0	1	0	0	0	0
Hazardous waters - coral reefs	0	9	6	1	21	29	0	0	0	27	0	2
Hazardous waters - lack navigation aids	1	2	0	1	2	1	0	0	1	0	0	0
Hazardous waters - shifting channel	3	5	1	1	2	9	1	1	6	0	0	1
Hazardous waters - uncharted hazards	3	6	3	0	2	7	1	2	2	1	0	1
Heavy traffic area	9	3	5	5	5	2	0	0	0	2	0	0
Other environmental contributing factor	16	12	3	5	23	34	3	5	23	2	1	0
Poor visibility	7	9	14	18	15	16	2	0	4	7	0	3
Sea state	37	28	31	61	65	74	6	12	18	14	7	17
Wash of passing vessel	11	18	22	19	6	12	2	8	0	0	1	1
Wind	13	25	43	25	21	55	9	11	12	7	7	9
Total environmental factors attribution	111	145	180	201	200	273	27	52	70	65	18	41



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Table 3.18 Human factors 1996 - 2001 and year 2001 by region

Human factors	1996	1997	1998	1999	2000	2001	GC	BN	GL	MK	TV	CN
Alcohol or drugs	2	9	6	4	6	6	1	0	2	0	2	1
Commercial pressure	0	4	1	4	7	8	1	4	0	2	1	0
Excessive speed	13	11	10	20	11	15	3	7	1	1	1	2
Fatigue	0	6	4	8	3	8	2	0	0	3	1	2
Inadequate training of crew	3	21	8	6	15	20	4	3	1	2	5	5
Inappropriate Harbour Control/Port Authority advice	0	1	0	0	2	2	1	0	0	0	0	1
Inappropriate advice to ship - Pilot	0	1	0	4	0	0	0	0	0	0	0	0
Inappropriate advice from Vessel Traffic System	0	0	1	0	0	1	0	0	0	0	1	0
Inappropriate instructions to crew - other	1	2	2	1	1	3	0	0	0	1	0	2
Poor communication of instructions to crew	0	4	3	0	3	4	0	1	0	1	0	2
Inattention	10	26	22	30	61	72	7	22	10	15	4	14
Insecure mooring	2	4	14	10	29	29	0	10	5	6	0	8
Insufficient crew numbers	1	0	0	1	0	1	0	1	0	0	0	0
Insufficient fuel	0	1	3	2	2	1	0	0	0	0	0	1
Insufficient maintenance	5	8	3	6	6	10	1	7	0	1	0	1
Insufficient planning	0	3	5	9	11	12	0	4	3	0	2	3
Navigation error - failure to keep proper lookout	50	24	24	33	17	39	0	13	4	12	1	9
Navigation error - lack of knowledge/experience	22	44	66	58	30	37	6	4	2	20	1	4
Navigation error - other	18	15	19	33	25	38	5	10	11	7	2	3
Navigation error - violation of Collision regs	4	11	28	15	2	20	1	5	1	9	1	3
Operational error - other	36	26	40	44	61	120	16	26	22	39	6	11
Overloading	2	0	0	0	2	4	0	0	1	0	0	3
Poor communications	8	3	6	3	3	6	0	3	3	0	0	0
Poor ship to shore communications	0	1	0	0	0	2	0	1	0	0	0	1
Violation of standard procedures	0	3	27	3	1	26	2	8	1	4	4	7
Violation of statutory rules or standards	1	1	4	7	6	20	4	8	4	0	2	2
Total human factors attribution	178	229	296	301	304	504	54	137	71	123	34	85

Table 3.19 Material factors 1996 - 2001 and year 2001 by region

Material factors	1996	1997	1998	1999	2000	2001	GC	BN	GL	MK	TV	CN
Bridge or navigation failure	0	1	0	4	3	2	0	0	0	0	1	1
Electrical failure	6	7	3	3	8	20	2	2	3	3	5	5
Equipment failure - other	17	50	28	32	30	25	1	7	1	8	4	4
Fuel or gas leak	2	1	6	3	3	10	0	4	0	1	1	4
Hull failure	4	7	12	8	10	14	0	3	3	5	2	1
Inadequate stability - other	3	0	2	1	3	6	0	2	1	1	0	2
Inadequate stability - overloading	1	0	0	0	2	1	0	1	0	0	0	0
Inadequate stability - shifting cargo	0	0	1	0	0	0	0	0	0	0	0	0
Inappropriate hull/equipment - construction fault	1	1	2	0	2	5	1	0	0	2	0	2
Inappropriate hull or equipment - design fault	4	2	2	2	6	9	0	2	0	4	2	1
Insufficient maintenance of hull/equipment	1	3	5	12	9	6	0	2	1	1	1	1
Insufficient safety equipment	1	4	1	0	0	0	0	0	0	0	0	0
Machinery failure	13	15	21	25	22	40	4	9	6	9	4	8
Other material contributing factor	12	6	2	14	39	31	2	12	5	9	2	1
Shore structure badly designed/built/maintained	5	6	4	5	4	4	1	2	0	0	0	1
Total material factors attribution	70	103	89	109	141	173	11	46	20	43	22	31

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Table 3.20 Incident type 1996 - 2001 and year 2001 by region

Incident type	1996	1997	1998	1999	2000	2001	GC	BN	GL	MK	TV	CN
Capsizing	14	9	10	12	19	16	4	8	0	1	1	2
Capsizing flooding	2	5	4	5	5	13	0	4	3	2	2	2
Capsizing sinking	32	52	41	27	19	22	2	6	3	2	2	7
Capsizing swamping	1	3	13	27	17	22	3	8	2	3	1	5
Collision between ships	93	86	124	139	119	122	32	35	12	21	8	14
Collision with a fixed object	24	37	39	37	37	35	1	23	4	1	3	3
Collision with an animal	0	0	0	0	0	1	0	0	0	0	1	0
Collision with floating object	6	5	17	6	12	7	1	3	1	1	0	1
Collision with overhead obstruction	0	0	1	0	3	0	0	0	0	0	0	0
Collision with submerged object	5	11	8	18	24	15	2	6	4	0	0	3
Collision with wharf	8	8	10	16	13	20	0	12	0	1	4	3
Explosion	4	6	9	2	2	5	0	2	0	0	0	3
Fire	14	12	9	21	19	26	2	6	1	8	5	4
Grounding intentional	0	1	4	3	10	2	2	0	0	0	0	0
Grounding unintentional	72	76	86	92	127	113	5	18	18	50	5	17
Loss of ship	0	0	5	6	25	0	0	0	0	0	0	0
Loss of stability	0	0	0	1	0	3	1	1	1	0	0	0
Onboard incident crushing or pinching	1	4	4	8	5	1	0	1	0	0	0	0
Onboard incident falls within ship	0	8	5	16	9	19	1	7	4	4	1	2
Onboard incident other onboard injury	21	25	26	12	20	15	3	5	2	5	0	0
Other	36	22	19	55	31	11	0	5	2	1	1	2
Other - Close Call	4	12	29	4	29	39	4	13	7	5	3	7
Other - Crime Issue	1	1	0	1	1	10	3	5	2	0	0	0
Other - Ship Adrift	0	4	2	0	6	20	0	2	5	5	5	3
Other personal injury caused by operation of ship	2	5	9	5	10	7	1	1	1	4	0	0
Other personal injury diving incident	1	4	1	1	3	1	0	0	0	1	0	0
Other personal injury hit by propellor or ship	5	4	3	1	2	4	1	1	0	0	1	1
Other personal injury parasailing incident	0	1	2	1	0	1	0	0	0	0	0	1
Other personal injury water ski incident	5	5	8	8	10	7	3	3	1	0	0	0
Person overboard	12	17	10	22	21	25	2	8	2	6	5	2
Structural failure	1	7	7	9	16	22	2	10	1	6	3	0
All incidents	364	430	505	555	614	604	75	193	76	127	51	82

Table 3.21 Locations of incidents 1996 - 2001 and year 2001 by region

Location	1996	1997	1998	1999	2000	2001	GC	BN	GL	MK	TV	CN
Not specified	92	104	67	9	8	2	1	1	0	0	0	0
Inland waters	84	106	138	131	107	99	22	53	6	3	4	11
Offshore	24	65	80	71	115	115	9	25	25	18	14	24
Partially smooth waters	76	79	89	236	160	149	4	33	8	74	13	17
Smooth waters	88	76	131	108	224	239	39	81	37	32	20	30
All incidents	364	430	505	555	614	604	75	193	76	127	51	82

Table 3.22 Incidents by month 1996 - 2001 and year 2001 by region

Month	1996	1997	1998	1999	2000	2001	GC	BN	GL	MK	TV	CN
January	30	31	66	48	66	59	7	13	8	14	8	9
February	18	23	39	43	49	40	3	14	1	14	3	5
March	37	40	29	47	53	56	6	17	4	15	5	9
April	26	29	37	52	64	56	7	20	10	9	3	7
May	27	36	47	47	49	38	4	12	6	6	4	6
June	27	35	40	47	40	50	6	17	5	17	2	3
July	22	40	30	44	61	48	3	11	6	13	5	10
August	27	35	40	45	60	66	5	24	11	10	3	13
September	29	35	45	44	47	42	3	16	6	7	3	7
October	40	38	52	46	52	52	8	15	8	11	6	4
November	39	47	38	43	35	54	12	14	8	6	7	7
December	42	41	42	49	38	43	11	20	3	5	2	2
All incidents	364	430	505	555	614	604	75	193	76	127	51	82



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Table 3.23 Incidents 1996 - 2001 by region

Region	1996	1997	1998	1999	2000	2001
Gold Coast	-	-	-	-	73	75
Brisbane	184	183	226	226	178	193
Gladstone	41	61	64	89	95	76
Mackay	57	82	104	131	119	127
Townsville	39	57	46	45	47	51
Cairns	39	41	62	64	102	82
Region not advised	4	6	3	0	0	0
All incidents	364	430	505	555	614	604

Table 3.24 Damage category 1996 - 2001 and year 2001 by region

Damage	1996	1997	1998	1999	2000	2001	GC	BN	GL	MK	TV	CN
Not specified	52	63	55	3	0	2	1	1	0	0	0	0
Damage to Property Only	11	12	43	68	54	48	6	24	1	1	13	3
No Damage	77	114	105	175	217	220	24	73	31	51	17	24
Ship Damaged	141	162	210	222	290	289	42	81	36	66	19	45
Ship Lost	16	21	33	31	53	45	2	14	8	9	2	10
All incidents	297	372	446	499	614	604	75	193	76	127	51	82

Table 3.25 Incidents by time of day 1996 - 2001 and year 2001 by region

Time of day	1996	1997	1998	1999	2000	2001	GC	BN	GL	MK	TV	CN
Not specified	21	43	14	16	51	23	5	12	3	2	0	1
Dawn	18	19	22	33	20	21	0	8	1	4	3	5
Day	215	280	318	359	387	383	54	112	39	94	31	53
Dusk	31	20	48	30	32	57	5	21	11	9	4	7
Night	79	68	103	117	124	120	11	40	22	18	13	16
All incidents	364	430	505	555	614	604	75	193	76	127	51	82



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Table 3.26 No. of ships in incidents 1996 - 2001 by ship type

Ship type	1996	1997	1998	1999	2000	2001
COM Fishing	78	80	78	92	102	88
COM Hire & Drive	0	0	0	2	0	0
COM Hire & Drive (House)	1	6	9	3	4	4
COM Hire & Drive (Motor)	5	3	6	6	8	10
COM Hire & Drive (Other)	1	6	11	0	0	2
COM Hire & Drive (PWC)	6	4	6	7	7	5
COM Hire & Drive (Sail)	7	16	17	27	43	46
COM Hire & Drive (Speed)	0	4	2	1	2	0
COM Houseboat	1	1	4	8	7	10
COM Hovercraft	1	0	1	0	0	0
COM Motorboat	3	8	15	5	11	9
COM Non-passenger	11	23	24	14	67	28
COM Other	58	75	79	115	46	66
COM Paddle (row) boat	0	0	1	0	1	0
COM Passenger	68	76	92	112	126	163
COM PWC (jetski)	5	5	12	6	6	8
COM Sailboat	6	11	15	47	7	15
COM Speedboat	11	9	15	15	8	13
REC Houseboat	7	6	8	8	7	9
REC Motorboat	37	31	50	42	60	65
REC Other	13	16	13	15	16	29
REC Paddle (row) boat	2	3	3	0	5	1
REC PWC (jetski)	11	10	14	25	26	17
REC Sailboat	42	55	82	88	95	59
REC Speedboat	45	50	72	82	83	55
Not specified	9	8	13	7	10	34
Unknown ship type	7	13	9	10	3	12
No of ships by ship type	435	519	651	737	750	748

Table 3.27 Visibility in incidents 1996 - 2001 and year 2001 by region

Visibility	1996	1997	1998	1999	2000	2001	GC	BN	GL	MK	TV	CN
Not specified	31	48	61	72	91	40	11	23	5	1	0	0
Poor	50	50	56	52	64	60	11	12	13	10	7	7
Fair	57	59	74	74	95	111	6	29	19	30	8	19
Good	226	273	314	357	364	393	47	129	39	86	36	56
All incidents	364	430	505	555	614	604	75	193	76	127	51	82

Table 3.28 Weather in incidents 1996 - 2001 and year 2001 by region

Weather	1996	1997	1998	1999	2000	2001	GC	BN	GL	MK	TV	CN
Not specified	63	74	78	58	67	33	4	22	6	1	0	0
Clear	222	273	311	348	365	422	54	136	45	90	41	56
Cloudy	22	31	35	55	84	72	4	23	11	19	1	14
Flood	1	0	0	0	3	1	0	1	0	0	0	0
Hazy	11	6	12	6	15	14	2	4	1	3	2	2
Other weather	4	4	7	10	12	8	2	1	2	2	1	0
Rain	41	42	62	78	68	54	9	6	11	12	6	10
All incidents	364	430	505	555	614	604	75	193	76	127	51	82

Table 3.29 Wind in incidents 1996 - 2001 and year 2001 by region

Wind	1996	1997	1998	1999	2000	2001	GC	BN	GL	MK	TV	CN
Not specified	92	99	131	67	61	39	7	27	4	1	0	0
No wind	65	59	78	115	57	45	8	16	1	10	1	9
Light (up to force 2 / 1-7 knots)	79	112	128	142	169	213	25	72	22	35	24	35
Moderate (force 3-4 / 8-16 knots)	99	134	122	184	173	184	22	56	32	36	17	21
Strong (force 5-7 / 17-33 knots)	11	9	18	15	131	105	7	19	13	44	7	15
Gale (force 8 and above / more than 33 knots)	18	17	28	32	23	18	6	3	4	1	2	2
All incidents	364	430	505	555	614	604	75	193	76	127	51	82



Boating incident data: by year and region

Table 3.30 Boating incidents 1996 - 2001 by region

Region	1996	1997	1998	1999	2000	2001
Brisbane & SEQ	1721	2029	2174	1769	1845	1695
Gladstone	211	421	424	356	480	335
Mackay	111	76	121	65	40	68
Townsville	120	61	106	114	151	111
Cairns	168	216	118	147	216	160
Annual totals	2331	2803	2943	2451	2732	2369

Table 3.31 Boating incidents by callout reason 2001 by region

Region	Breakdown	Grounding	Medical	Fuel	Sinking	Drifting	Not specified	Other	Search	Flares	EPIRB
Gold Coast	642	87	34	63	37	36	17	6	4	1	0
Brisbane	434	46	107	39	30	31	32	30	15	4	0
Gladstone	206	27	14	24	16	3	15	13	10	3	4
Mackay	31	7	3	6	11	1	0	2	7	0	0
Townsville	68	7	5	8	10	5	3	2	3	0	0
Cairns	112	12	3	9	10	3	6	1	3	1	0
Callout reason totals	1493	186	166	149	114	79	73	54	42	9	4

Vessel registration data: by year and region

Table 3.32 Commercial and recreational registrations 1996-2001 by region

Recreational registrations						
Region	1996	1997	1998	1999	2000	2001
Gold Coast	13970	15007	16392	17544	18695	20130
Brisbane	57031	59927	63662	66986	70310	74018
Gladstone	20499	21378	22469	23430	24391	25826
Mackay	8529	9054	9692	10055	10417	11046
Townsville	12002	12418	13065	13610	14154	14989
Cairns	12030	12974	13816	14693	15570	16143
Totals	124061	130758	139096	146318	153537	162152

Commercial registrations						
Region	1996	1997	1998	1999	2000	2001
Gold Coast	558	656	693	728	727	727
Brisbane	1243	1394	1434	1585	1569	1596
Gladstone	588	667	716	768	744	752
Mackay	532	609	641	700	711	751
Townsville	345	378	413	480	473	466
Cairns	863	900	983	1074	1105	1123
Totals	4129	4604	4880	5335	5329	5415

Total registrations						
Region	1996	1997	1998	1999	2000	2001
Gold Coast	14528	15663	17085	18272	19422	20857
Brisbane	58274	61321	65096	68571	71879	75614
Gladstone	21087	22045	23185	24198	25135	26578
Mackay	9061	9663	10333	10755	11128	11797
Townsville	12347	12796	13478	14090	14627	15455
Cairns	12893	13874	14799	15767	16675	17266
Totals	128190	135362	143976	151653	158866	167567

Annex A

Definition of a marine incident and a serious injury incident

What is a marine incident?

Section 123(1) of the *Transport Operations (Marine Safety) Act 1994* states:

A “marine incident” is an event causing or involving -

- (a) the loss of a person from a ship; or
- (b) the death of, or grievous bodily harm to, a person caused by a ship’s operations; or
- (c) the loss or presumed loss or abandonment of a ship; or
- (d) a collision with a ship; or
- (e) the stranding of a ship; or
- (f) material damage to a ship; or
- (g) material damage caused by a ship’s operations; or
- (h) danger to a person caused by a ship’s operations; or
- (i) danger of serious damage to a ship; or
- (j) danger of serious damage to a structure caused by a ship’s operations.

What is a serious injury incident?

A serious injury incident is an incident where a person involved in a marine incident suffers any injury requiring admission to hospital.



Annex B

Guidelines for the categorisation of marine incidents

Category 1

A Category 1 incident has serious consequences. It triggers an “Issues” alert. Prima facie, a serious breach of maritime safety legislation or Criminal Code of Queensland is probable. A full investigation into all the circumstances is indicated. It is currently further described in the following terms:

- Total loss or theft of any ship of overall length greater than 15 metres.
- Stranding, collision or major fire involving a passenger ship.
- Stranding, collision or fire on board any ship of overall length greater than 24m
- An incident resulting in persons missing, death or serious injury.
- An incident involving a pilot or exempt master regardless of severity.
- Any other incident of major significance.

Category 2

A Category 2 incident includes an incident which, exempting actual impact or outcome of a Category 1 incident, has the same potential i.e. a close call incident involving

- operation of a ship in a manner which places it or other ships, passengers or crew at risk of a Category 1 event; or
- operating a ship contrary to its approved classification.

Category 3

A Category 3 incident will be of sufficient consequence and severity to indicate a possible breach of the controlling legislation and therefore justifying investigation to determine cause and lessons learned.

Category 4

A Category 4 incident is of low significance; where a minor breach of legislation may have occurred and where investigation is undertaken to establish or confirm the facts and the lessons learned.



For copies of the report or enquiries

Maritime Safety Education Unit
Maritime Safety Branch
Level 22 Mineral House
41 George Street
Brisbane Qld 4000

GPO Box 2595
Brisbane Qld 4001

Facsimile: (07) 3224 8718
email: maritime.safety@transport.qld.gov.au

