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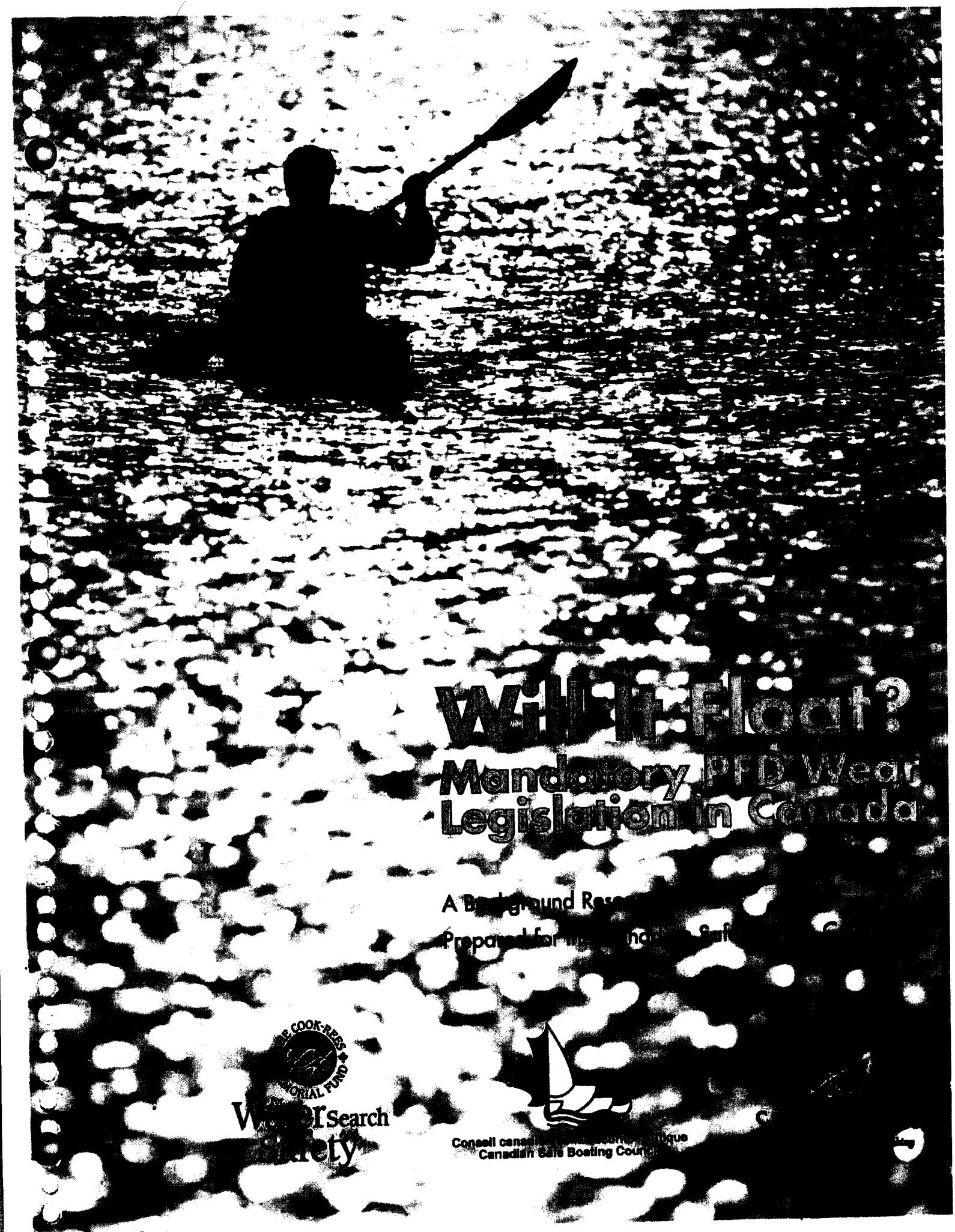

Will It Float?

Mandatory PFD Wear Legislation in Canada?

A Background Research

Prepared for the National Search and Rescue Secretariat

Conseil canadien de la sécurité nautique
Canadian Safe Boating Council

Will it Float? Mandatory PFD Wear Legislation in Canada

A Background Research Paper

Presented to

The Canadian Safe Boating Council

By

SMARTRISK

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Bibliographic Information:

Groff, P. and Ghadiali, J. 2003. *Will it Float? Manadatory PFD Wear Legislation: A Background Research Paper.* Toronto, ON: SMARTRISK

ISBN: 1-894828-44-5

TABLE OF CONTENTS

LIST OF FIGURES

ACKNOWLEDGEMENTS

The principal authors of this report have to acknowledge their indebtedness to a number of people who made it possible. First and foremost we must thank the rest of the research team. Thanks to Dr. Eden Cloutier for his analyses on the economic burden of boating related drownings. Thanks to Mr. Victor Opara for his legal analysis presented in Appendix I and summarized by us in Chapter 6 of this report. Thanks to Ms. (soon to be Dr.) Na Koshie Lamptey for her efforts in interviewing the Canadian Stakeholders, as reported in Appendix E and summarized by us in Chapter 7. In addition, we must thank her for her assistance in the development of the international survey instruments employed in the project, and for her coining of the main title. Thanks to Dr. Chris Brooks for his unwavering support and dedication throughout this project, his patient instruction about all things related to buoyancy, and cold-water immersion, and his careful reading of several drafts of this report.

We must also acknowledge our companions at SMARTRISK for their support on this project. In particular we must mention the patience of Michael Gemar who provided creative services and IT support in the production of this paper, including the development of the cover.

Our thanks to Susan Mackenzie at Health Canada for providing the data for the economic burden analysis.

We would also like to acknowledge our gratitude to the blind peer review volunteered by Jack Gallagher and Gordon Giesbrecht.

We would also like to thank The Cook-Rees Memorial Fund for Water Search and Safety for their generous financial support of this research.

Finally, we would like to acknowledge the members of the PFD Taskforce who provided much needed guidance. Without their oversight this paper could not have come to light.

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EXECUTIVE SUMMARY

In 2002, the Canadian Safe Boating Council struck a Lifejacket/Personal Flotation Device (PFD) Taskforce to examine the advisability of advocating for legislation concerning mandatory PFD use for recreational boaters in small craft. In October 2002, the taskforce contracted with SMARTRISK, a national injury prevention organization, to develop a background research paper summarizing the best available evidence pertaining to mandatory lifejacket/PFD use. This background research paper would then be used to inform a position paper on the topic of mandatory PFD wear legislation by the taskforce. Several lines of evidence were considered in order to examine the case for mandatory wear of lifejackets/PFDs for boaters in vessels under 6m while the vessel is underway.

Four blocks of research were conducted. These dealt with, respectively: the magnitude of the issue, the risk factors involved with particular emphasis on the role of PFD wear and the methods used to encourage it, the political and legal context within which mandatory wear legislation must be considered, and the likely public response to the introduction of legislation.

An assessment of the magnitude of the issue of boating related drownings revealed that on average 140 Canadian die each year in such incidents. This represents a societal burden of more than 2700 potential years of life lost to Canadians each year. An economic burden analysis conservatively estimated indirect costs in terms of lost productivity of $30 million annually, with total societal costs likely as high as $80 million or more.

Several risk factors for these drowning were identified. Potential points of intervention in boating behaviour which could impact drowning rates include increasing swimming ability, decreasing alcohol consumption, decreasing reckless behaviour and increasing the use of floatation devices. Of these, it was found that low PFD wear rates accounted for the greatest percentage of drowning deaths, and that increasing their rate would have the additional benefit of reducing drownings related to all other risk factors as well. Literature reviews, an international environmental scan, surveys of international and US boating safety advocates, and key informant interviews with Canadian stakeholders indicated that most attempts to boost PFD wear rates were unsuccessful. While there was little in the way of direct evaluations of the potential of mandatory wear legislation to increase wear rates available, data from the US and from Tasmania suggest that the rate of wear is directly related to the regulatory climate. In addition an anlysis of two parallel cases from other domains of injury prevention: seat-belts and bicycle helmets, provide additional support to the notion that mandatory wear legislation has the potential to be effective.

In the third block of research, literature reviews, an international environmental scan, surveys of international and US boating safety advocates, and key informant interviews with Canadian stakeholders highlighted potential barriers

CHAPTER 1: INTRODUCTION

In 2002, the Canadian Safe Boating Council struck a Lifejacket/Personal Flotation Device (PFD) Taskforce to examine the advisability of advocating for legislation concerning mandatory PFD use for recreational boaters in small craft. In October 2002, the taskforce contracted with SMARTRISK, a national injury prevention organization, to develop a background research paper summarizing the best available evidence pertaining to mandatory lifejacket/PFD use. This background research paper would then be used to inform a position paper on the topic of mandatory PFD wear legislation by the taskforce. Several lines of evidence were considered in order to examine the case for mandatory wear of lifejackets/PFDs for boaters in vessels under 6m while the vessel is underway.

The current background research paper examines the following issues:

- First, it must be determined whether there is a problem that needs to be addressed.
- Second, that mandatory PFD use is likely to address this problem.
- Third, that it is possible to successfully work toward such a regulatory solution.
- And finally, that there is evidence that such legislation could be successfully implemented.

Accordingly, the initial proposal was for four blocks of research (a copy of the proposal is provided in Appendix A).

RESEARCH BLOCKS

Block One

First, there was a need to collect and analyze the general data pertaining to the magnitude of the problem. Incidence rates of drowning related to boating and PFD use were collected and compiled from a number of sources. A brief examination of the social and human costs of boating fatalities was made. Finally, the economic burden associated with these events was modelled using methods previously applied at SMARTRISK to all classes of injury in the country.

Block Two

There was a need for a series of systematic literature reviews to establish the current evidence base for a mandatory wear law. The literature on PFD use and efficacy in preventing drowning has been summarized. Any literature pertaining to the efficacy of legislative measures to mandate PFD use in jurisdictions where this has occurred were examined, in the context of other potential interventions to promote PFD use, and other legislative efforts to mandate the use of injury prevention gear. In addition, a survey was conducted of various legislative jurisdictions which have considered similar legislation in

methodology as well as the findings are provided in Appendix E, and the Interviewer's Guide used in conducting the semi-structured interviews is provided in Appendix F.

Block 3: Legal Issues

In order to understand the legal context for any potential legislative solutions to address recreational boating drownings in Canada, a memorandum was developed that summarizes the legal issues pertaining to personal liability of the owner of a small craft in the event of drowning during the operation of his craft. Canadian superior courts' decisions and relevant statutory provisions on the issue were examined. Details regarding the methodology and findings for this legal memorandum are provided in Appendix I.

Block 4: Public Opinion Poll

In order to poll the Canadian public regarding their opinions on the notion of legislation requiring recreational boaters in small watercraft to wear a PFD while on the water, telephone interviews were conducted with 1,000 Canadians. A full description of the methodology and findings for this research are included in Appendix G. A copy of the survey is included in Appendix H.

PROJECT TEAM

The following people participated in the four blocks of research outlined above.

Dr. Philip Groff is the Manager of Research Development and Evaluation at SMARTRISK. He has a background in the psychology of human problem solving and has worked as a researcher within the Health Network of Canadian Policy Research Networks, and "Health and Everything". He oversaw the project.

Dr. Chris Brooks, internationally recognized authority on lifejacket/PFD use and cold water survival, served as a consultant on this project. Dr. Brooks has been a Navy captain, and head of the hospital at Canadian Forces Base Halifax. He is the author of *Lifejackets Through the Ages*.

Dr. Eden Cloutier is a noted economist and co-author of SMARTRISK's *The Economic Burden of Unintentional Injury in Canada* as well as numerous provincial economic burden studies. He assisted with the calculation of the economic burden of recreational boating-related drowning.

Ms. Jennifer Ghadiali, was a senior researcher for this project. She was responsible for the day-to-day administrative and logistic support of the project as well as collecting the literature for the reviews, developing and maintaining databases and synthesizing results. Ms. Ghadiali has an extensive background in both sociological research and marketing surveys and her expertise was invaluable in both the development and analysis of the various survey instruments and in the writing of this report.

first reviewed. This is followed by a summary of comments from key international and Canadian informants regarding the barriers and opportunities for PFD wear legislation. Next, the probable reaction of the Canadian public is discussed, based upon findings from past research studies as well as an opinion poll conducted for this background research paper.

Chapter 8: Conclusions and Recommendations
This final chapter reviews the key issues surrounding the notion of creating mandatory wear PFD legislation, and concludes with recommendations for consideration by the PFD Taskforce.

CHAPTER 2: MAGNITUDE OF THE PROBLEM

NUMBER OF RECREATIONAL BOATERS IN CANADA

Given that Canada is bordered to the east, west, and north by ocean, as well as the abundance of lakes, rivers, bays, and other waterways in Canada, it is not surprising that recreational boating is a very popular leisure activity among Canadians. Estimates suggest that as many as 10 million Canadians participate in recreational boating each year in Canadian waters.[i1-3]

INCIDENCE OF DROWNING WHILE ENGAGING IN RECREATIONAL BOATING

Although recreational boating continues to grow in popularity, it does involve some degree of risk. Despite the efforts of various organizations that have mounted boating safety education campaigns, and the introduction of requirements for boat operators to obtain a Pleasure Craft Operators Card and to have an approved PFD or lifejacket of the appropriate size for each person on board, many recreational boaters continue to lose their lives unnecessarily every year. Most of these drowning incidents could have been prevented.

In Canada, the primary source of information relating to drowning deaths is the Canadian National Surveillance System for Water-Related Fatalities, established in 1991 by the Canadian Red Cross, the Royal Lifesaving Society of Canada and the National Association of Coroners. All unintentional drownings and other water-related injury deaths in Canada are investigated by coroners or medical examiners, and an external cause of injury code (or E-code) should be assigned to each case.

The Canadian National Surveillance System for Water-Related Fatalities contains statistics relating to drownings from various causes, including boating, aquatic activities, bathing, falls into water, and land/air transport. As well, boating-related drownings are further broken down into those related to recreational activities, activities of daily living, and occupational activities. The report also contains data regarding other water-related injury deaths, including deaths attributed to injuries sustained in collisions in the water, air emobolism, immersion hypothermia, injuries sustained in diving or jumping into water, and land or air transport injuries.

However, as the focus of this background research paper is on recreational

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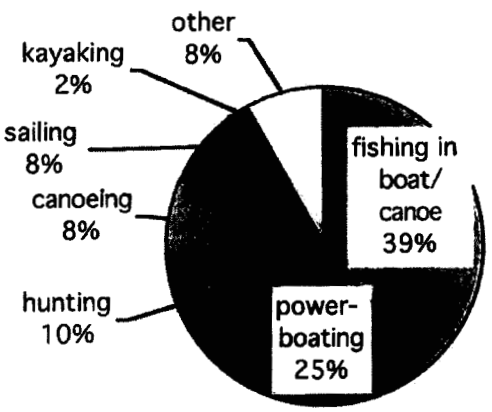
[i] Canadian recreational boaters utilize all sizes of vessels, from individual craft such as jet skis, to large vessels such as yachts. However, for the purposes of this background research paper, we have focused on vessels under six metres long. This would include personal watercraft (e.g., jet skis), kayaks, canoes, rowboats, rafts, small open powerboats, small sailboats, and sailboards.

PROFILE OF RECREATIONAL BOATING DROWNING DEATHS

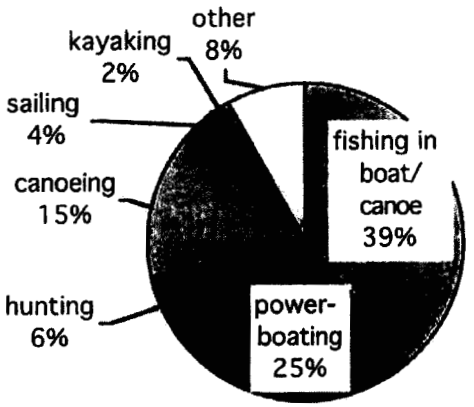
As shown in the charts below, drowning victims both in 1999 and over the period from 1999-2000 have primarily been engaged in fishing (39%) or powerboating (25%) when the incident occurred.[4,5] Most recreational boating drowning fatalities were associated with small open powerboats less than 5.5m in length or canoes, although canoe-related fatalities made up a smaller share of all drownings in 1999 (13%) versus the last 10 years as a whole (22%), and there was a slight decrease in drownings involving small open powerboats in 1999 (34%) compared with the 10-year average (38%).[4,5]

Figure 2: Recreational Boating Drowning Deaths in Canada by Activity and Type of Boat[iii]

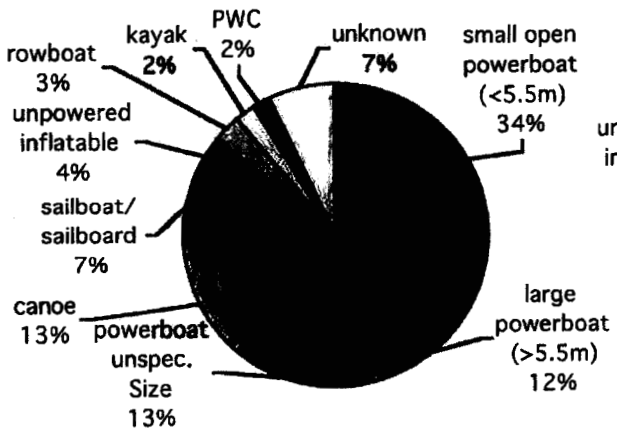
By Activity: 1999



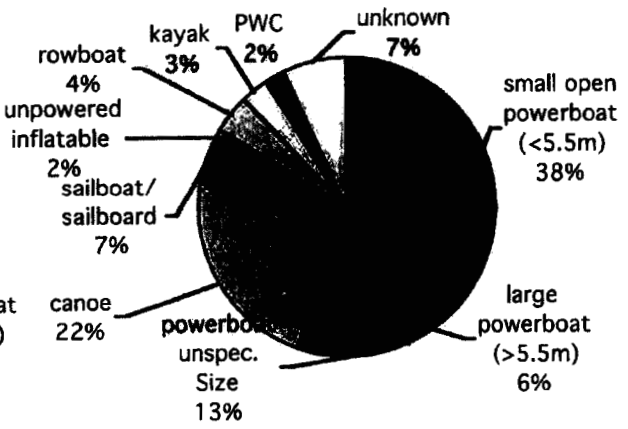
By Activity: 1991-2000



By Type of Boat: 1999



By Type of Boat: 1991-2000



[ii] **Canadian Red Cross, Visual Surveillance Report: 2001** Edition, 2001.
[iii] **Canadian Red Cross, Visual Surveillance Report: 2001** Edition, 2001.
Canadian Red Cross Society: What We Have Learned: 10 Years of Pertinent Facts About Drownings and Other Water-Related Injuries in Canada, 1991-2000, 2003.

A more reliable measure of international drowning rates for recreational boaters would be based upon exposure per million hours of boating. Unfortunately, this data is not readily available for many countries, which makes it difficult to gain a true understanding of how Canada's recreational boating drowning statistics compare to those in other countries.

INCIDENCE OF NEAR-DROWNING WHILE ENGAGING IN RECREATIONAL BOATING

Near-drownings are broadly defined as "survival, at least temporarily, after aspiration of fluid into the lungs."[7] However, the Canadian authority on drownings, the Canadian Surveillance System for Water-Related Fatalities, defines near-drownings as "when a drowning victim is rapidly resuscitated and survives to reach hospital."[4]

Even a small amount of aspirated water can cause damage to the lungs, which could ultimately lead to serious respiratory difficulties or even death if not treated medically,[7] and some near-drowning victims sustain brain damage due to a lack of oxygen to the brain.[4] The chart below shows the rate and number of hospitalizations for survivors of near-drowning boating incidents, as well as the number of in-hospital deaths associated with boating-related near-drownings for 1994-1999. It should be noted that boating incidents of all types are included (recreational, occupational, and daily living, though recreational drownings are far more prevalent).

preparing a summary report on this topic. However, data is not yet available from this initiative.

BURDEN OF BOATING DROWNINGS

Economic Burden

The social and human costs of the loss of human life in recreational boating drownings are incalculable. These tragic events have a devastating and long-lasting impact on the family members and friends of the victims. However, it is possible to estimate the indirect economic costs of boating drownings by using the human capital approach. Using this methodology, indirect costs are calculated as the forgone market wages[vi] in the working years from ages 15 to 64 years, inclusive, due to premature death.

In order to calculate the foregone market wages of drowning victims, the following data are required in addition to age-sex specific drowning statistics: the average annual wage, participation rate, average employment rate, real wage growth rate[vii], discount rate, and age-sex specific mortality rates.

The average annual wage used in the calculation of foregone wages was $31, 825 and was sourced from Statistics Canada (CANSIM, Matrix 4288). Data from Statistics Canada also provided the participation rate (75.87%) and the unemployment rate 7.64% (CANSIM, Matrix 3472) used in the calculations. The real wage growth rate was assumed to be 1% and the discount rate 3% for these calculations. And the age-sex specific mortality figures were obtained from Health Canada.

The other data required for the calculations are Canadian drowning statistics by age and sex. In 1999, Canada was using a classification scheme for injury called ICD-9 (International Classification of Disease, 9th Edition). In standard chart notation, all injuries are assigned a three-digit number from the E-Codes

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[vi] The estimate of foregone wages takes account of the fact that, for any individual, there is a probability that the individual could be a non-participant in the labour market or, if participating, that he or she is unemployed. Furthermore, the probability that an individual, had he or she not drowned, died from an unrelated cause during the working years is also taken into account. These are incorporated by adjusting the annual wage by the participation rate, one minus the unemployment rate and the probability of being alive at each future age, given an attained age at the time of the drowning. As is customary in these analyses, an average wage, participation rate and unemployment rate over the whole range 15 to 64 years was used.

[vii] Future real wage levels are assumed to increase by a real wage growth factor over all future periods. The economic burden is then calculated as the discounted net present value of all foregone future adjusted wages, where the discount rate is also held constant over all periods.

Figure 5: Economic Burden of Boating Drownings in Canada, 1999

TOTAL (MALES AND FEMALES COMBINED)					
Age Group	Population	Mortality Rates per 100,000	Deaths		Economic Burden
TOTAL	30,491,294	0.28	86		$30,156,552.86
MALES					
Age Group	Population	Mortality Rates per 100,000	Deaths	Average Age	Economic Burden
0	174,319	0.00	0	0	$0.00
1-4	763,674	0.13	1	3	$547,817.09
5-9	1,056,735	0.19	2	7	$1,185,914.87
10-14	1,040,682	0.10	1	12	$654,580.45
15-19	1,058,431	0.38	4	17	$2,709,833.04
20-24	1,052,217	0.57	6	22	$3,794,088.73
25-29	1,069,589	0.19	2	27	$1,164,175.31
30-34	1,181,600	0.51	6	32	$3,162,480.84
35-39	1,361,775	0.51	7	37	$3,266,478.59
40-44	1,283,695	0.78	10	42	$4,003,037.18
45-49	1,123,385	0.27	3	47	$982,651.83
50-54	976,317	0.92	9	52	$2,232,853.13
55-59	739,735	1.22	9	57	$1,449,668.87
60-64	604,068	1.16	7	62	$452,343.67
65-69	548,383	0.73	4	67	$0.00
70-74	446,314	0.45	2	72	$0.00
75-79	325,860	0.51	1	77	$0.00
80-84	177,236	0.56	1	82	$0.00
85+	119,396	0.00	0	90	$0.00
MALES	15,103,411	0.50	75		$25,605,923.61
FEMALES					
Age Group	Population	Mortality Rates per 100,000	Deaths	Average Age	Economic Burden
0	165,406	0.00	0	0	$0.00
1-4	725,720	0.14	1	3	$556,955.45
5-9	1,004,928	0.00	0	7	$0.00
10-14	985,901	0.10	1	12	$665,326.62
15-19	1,003,455	0.10	1	17	$688,743.04
20-24	1,007,545	0.00	0	22	$0.00
25-29	1,043,620	0.00	0	27	$0.00
30-34	1,156,999	0.17	2	32	$1,070,812.22
35-39	1,341,708	0.00	0	37	$0.00
40-44	1,283,179	0.08	1	42	$406,601.28
45-49	1,128,130	0.27	3	47	$988,777.33
50-54	982,734	0.00	0	52	$0.00
55-59	755,491	0.13	1	57	$163,413.32
60-64	629,636	0.00	0	62	$0.00
65-69	592,830	0.00	0	67	$0.00
70-74	542,871	0.00	0	72	$0.00
75-79	462,647	0.22	1	77	$0.00
80-84	299,341	0.00	0	82	$0.00
85+	275,742	0.00	0	90	$0.00
FEMALES	15,387,883	0.07	11		$4,550,629.25

for those who sustain permanent brain damage from a lack of oxygen while underwater.

The estimates produced for this background research paper represent an extremely conservative estimate of the economic burden associated with boating drowning deaths; and this estimate only represents the economic impact and cannot touch on the social impact of boating drownings.

Another economic analysis study has calculated the annual cost of recreational boating drownings for Canada, including both the indirect costs of loss of productivity as well as direct costs for medical treatment, funeral services, etc.[14] This study used cost estimates by age and sex from U.S. data and applied them to the Canadian recreational boating deaths for 1991 and 1992, with the assumption that the average costs per drowning would be similar in the two countries. This study estimated that the total average annual cost of all recreational boating drownings in Canada for 1991 and 1992 was about $80 million.[14]

Potential Years of Life Lost

Another way of examining the "cost" of boating drownings is to calculate the potential years of life lost due to these tragedies. This is calculated by subtracting the actual age at death from a standard age of death (usually age 75) and then multiplying this figure by the number of deaths. Using an average age of death for 1999 of 75 for both males and females (from Vital Statistics, Statistics Canada), there are a total of 2,353 potential years of life lost for male boating drowning victims, and 414 years for female victims. Thus, a grand total of 2,767 potential years of life were lost to Canadians in 1999 due to boating drownings.

CHAPTER 3: RISK FACTORS ASSOCIATED WITH BOATING-RELATED DROWNINGS

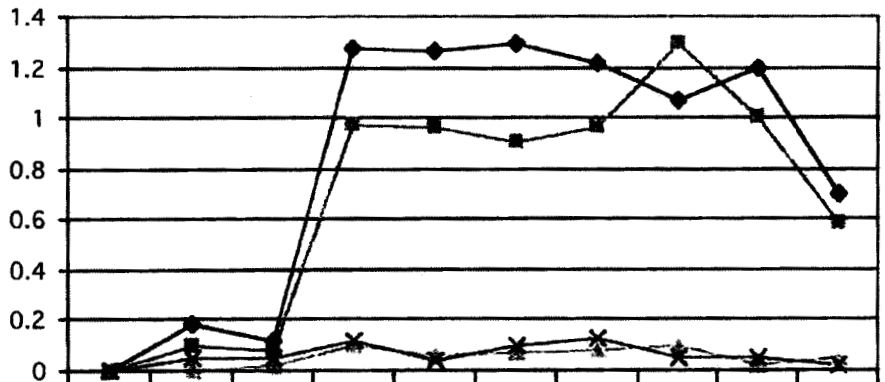
PERSONAL FACTORS

Age and Gender

There are some very definite patterns in recreational boating drowning deaths in Canada. For instance, adult males comprise the vast majority of victims year after year. The distribution of recreational boating drownings by age and sex is presented in the chart below for the past 10 years. Though the rate of drownings among male recreational boaters has declined during the 1996-2000 period, compared with the 1991-1995 period, drowning rates continue to be significantly higher for males than for females.

In 1999, males accounted for 90% of all recreational boating drowning victims,[4] even though they accounted for only about 50-60% of all recreational boaters in Canada, according to some estimates.[15, 16] Stated another way, drowning is about 9 times more likely among males than females.

Figure 6: Rates of Recreational Boating Drownings in Canada by Age and Sex, 1991-2000[viii]



	<1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75+
Males 1991-1995 (N=686)	0	0.18	0.12	1.27	1.26	1.29	1.22	1.07	1.2	0.7
Males 1996-2000 (N=579)	0	0.1	0.08	0.97	0.96	0.9	0.96	1.29	1	0.58
Females 1991-1995 (N=42)	0	0	0.02	0.1	0.06	0.07	0.08	0.1	0.02	0.05
Females 1996-2000 (N=55)	0	0.05	0.05	0.12	0.04	0.1	0.13	0.05	0.05	0.02

PFD. While 10% of all Canadian drowning victims in 1999 wore a PFD, not a single aboriginal drowning victim was wearing a PFD in 1998 or 1999.[4]

Swimming Ability

Interestingly, an examination of Canadian recreational boating fatalities in 1999 shows that only 14% of those who drowned were identified as non-swimmers or weak swimmers.[19] However, the swimming ability of a large percentage of victims was not known, and when only those drowning victims whose swimming ability was known are factored in, a larger proportion of the drowning victims in Canada in 1999 (59%) were swimmers than non-swimmers (41%).

There is considerable evidence that even those who are good swimmers can experience great difficulty in cold water, so swimming ability in warm water is not necessarily a good indicator of survival in cold water.[7, 20] Clearly, increasing boaters' experience in the water, and level of swimming ability are not the only or necessarily best ways to reduce the incidence of recreational boating-related drowning.

Lack of Boating Safety Training and Inexperience

Although data relating to the link between boating safety training and boating drownings does not seem to be available in Canada, there is considerable evidence from an analysis of drowning reports in the United States to suggest that it can be a major contributing factor to boating fatalities. In a report outlining boating accident statistics for the year 2000, the United States Coast Guard reported that 47% of all boating fatalities occurred on boats where the operator had not completed a boating safety education course. And when only the cases in which the education of the operator is known are considered, 84% of the boating fatality victims had not received any boating safety training.[21]

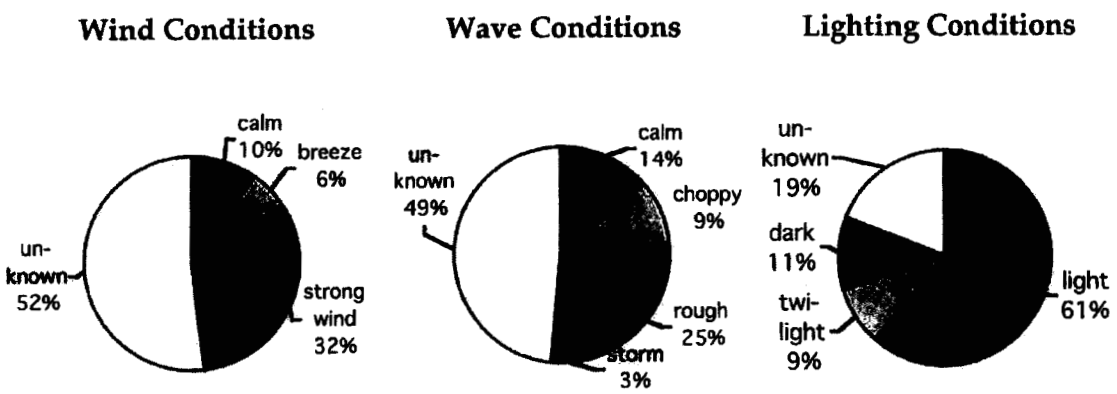
There is also evidence that boaters with more hours of experience on the water are less likely to be involved in a boating accident. According to the United States Coast Guard, the average recreational boater logs an average of 240 exposure hours per year.[22] Exposure hours are calculated based upon the number of days the boat is used per year, the number of hours per day the boat is used, and the number of occupants of the boat. The United States Coast Guard reported that when only the fatalities in which the victim's experience was known were factored in, 45% of boating fatality victims had under 100 hours of boating experience.[21] Another report by the U.S. Coast Guard focusing specifically on hours of experience also found that hours of experience is negatively correlated with boating fatalities.[22] Specifically, the study reports that boaters with less than 100 hours of operating experience had a fatality rate of 64 per million hours, which is three times higher than the rate of 22 fatalities for those with between 100 and 500 hours of experience. And the fatality rate for those with over 500 hours of experience is extremely low at .0018 deaths per million hours. [22] Another report based on California boating fatalities found that operator inexperience played a role in 40% of all boating fatalities.[23]

Weather and Boating Conditions

Wind, wave, and light conditions each may contribute to the likelihood of drowning, as they can affect the operator's ability to maneuver the watercraft, the stability of the craft and the likelihood of capsizing or a boat occupant falling overboard. As well, adverse conditions could affect a person's ability to stay afloat, locate and don flotation devices, and their ability to swim or assist in their own rescue.

In 1999, 32% of all recreational boating drownings occurred during strong wind conditions, 28% occurred during rough or stormy wave conditions, and 20% occurred during twilight or after dark.[4]

Figure 9: Recreational Boating Drownings in Canada by Wind, Wave, Lighting Conditions, 1999[xi]



BEHAVIOURAL FACTORS

Alcohol

In many ways, alcohol consumption is even more dangerous when operating a watercraft than a motor vehicle. In fact, research has shown that due to factors associated with the marine environment (such as motion, vibration, engine noise, sun, wind, and spray from the water), only one third of the amount of alcohol that makes a person legally impaired on the road is sufficient to make a person equally impaired on the water.[24] Drinking alcohol produces certain physiological responses, which clearly interfere with a person's ability to safely operate a watercraft. Alcohol consumption impairs judgment, the ability to focus and process information, as well as reaction time.[24] At the same time, peripheral

[xi] Canadian Red Cross, Visual Surveillance Report: 2001 Edition, 2001.

Reckless Behaviour

Many drownings appear to be attributable more to recklessness or poor judgment than environmental factors. Investigation into the cause of all drowning fatalities in 1999 revealed that the boat was overloaded in 10% of all drowning incidents, someone stood in the boat in 8% of all drownings, the boat operator made an abrupt turn that may have contributed to 6% of the deaths, the boat itself was unsafe in 6% of all cases, and the boat was speeding prior to 2% of all drowning incidents.[4]

Figure 11: Recreational Boating Drownings in Canada by Risk Factor[xiii]

Cause of Incident	1999 %
Strong winds	32
Rough waves	30
Boat overloaded	30
Standing up in boat	8
Engine trouble	7
Abrupt turn	6
Current	6
Unsafe boat	6
Fell overboard, boat kept going	3
Collision object/person	3
Collision boats	3
Embarking/disembarking	3
Speeding	7
Urinating	7

Note: There may be multiple risk factors per incident

[xiii] Canadian Red Cross, Visual Surveillance Report: 2001 Edition, 2001.

becomes increasingly difficult as the body cools down, and increased swimming efforts lead to greater body cooling.[20]

Long-Term Responses/Hypothermia (After 30 minutes)

If a person who has been unexpectedly immersed in cold water survives the first two phases of physiological responses, the next threat is hypothermia. Water is an excellent conductor of heat, so a person in cold water will cool two to five times faster than in the same air temperature, and this cooling is worsened by waves, currents, or swimming.[7]

After being immersed in water below body temperature (37 C), deep body temperature will begin to fall until eventually reaching hypothermic levels.[20] As the deep body temperature falls, death may occur either because the victim lapses into unconsciousness and drowns or due to cardiac arrest.[20] However, even before hypothermia sets in, a decline in deep body temperature from 37 C to 35 C can result in a significant decline in physical and mental capabilities that could interfere with self-rescue efforts.

The rate that this decline in core body temperature occurs depends on a number of factors such as the water temperature, clothing insulation, state of physical fitness, amount of body fat, body mass, rate of agitation of the water, and diet prior to immersion.[20] However, typically the body temperature will not cool to hypothermic levels in the first 30 minutes of immersion.[7] In 5 C water, the deep body temperature of a lightly dressed adult will fall 2 C to 35 C in about one hour.[7] In water that is 10 C, a 2 C drop in body temperature would take approximately two hours, and in 15 C water, core body temperature would reach 35 C in three to six hours.[7]

Although there have been some remarkable cases of victims being resuscitated after being accidentally immersed in cold water and their deep body temperatures falling to extremely low levels (as low as 13.7 C in one case), more typically, death occurs from cardiac arrest once the core temperature of the victim falls to about 24 C.[20]

Thus, a person's ability to put on a personal flotation device after being unexpectedly immersed in cold water could be severely impeded. Depending upon the water temperature and the length of time they are immersed, the person could experience: hyperventilation, inability to breath hold, numbing of the limbs with reduction in grip strength, manual dexterity, and muscle coordination, swimming difficulties, and feelings of panic or confusion.

One expert in drowning prevention, summarizes the situation very concisely:

> A regulation that requires passengers and operators of small vessels to carry lifejackets in the boat, but not wear them is ineffective, and does not prevent drowning. As has clearly been demonstrated ... as the victim is suddenly immersed in cold water, the cold shock causes a huge inspiratory gasp and s/he starts to hyperventilate while struggling to

CHAPTER 5: INCIDENCE OF PFD USE AND PUBLIC ATTITUDES TOWARDS WEARING PFDS

As discussed in the previous chapter, PFDs can be an effective tool for preventing drownings, but only if they are worn, not carried on board. This chapter will focus on the incidence of PFD usage as well as attitudes of Canadian recreational boaters towards wearing PFDs, focusing on the key reasons why some boaters choose not to wear flotation devices.

INCIDENCE OF PFD USE

Unfortunately, while there is little doubt of the efficacy of lifejackets or personal flotation devices (PFDs) in keeping someone afloat, there is little evidence that they are, in fact, being worn by the group at-risk.

One study comprised of males aged 15 to 35 in Western Canada reports that nearly half (47%) of the respondents claimed they wore a PFD or lifejacket at all times while they were on the water during their last outing. Another 16% said they wore a PFD or lifejacket for some of the time during their last outing but took it off for comfort reasons, to engage in activities such as swimming, or when they did not perceive a high risk of drowning, such as when the boat was not moving. The remaining 37% admitted they usually do not wear a lifejacket.[26]

However, other research found that, overall, only 33% of recreational boaters wear a PFD while on watercraft under 6m in length.[2]

Another national study provided a considerably lower estimate of PFD usage in Canada. An observational study undertaken by the Coast Guard found that only 21% of boaters in Canada wear a lifejacket or PFD.[2]

The wide disparity in estimates of PFD usage may relate to methodological differences in these studies. For instance, one of the telephone studies cited above was conducted with males aged 15-35 in Western Canada, the other telephone study was national and conducted with adults of both genders, and the observational study was national and included both male and female recreational boaters of all ages. There were also differences in time of year these research studies were conducted as well as how recreational boaters were defined. However, perhaps the most important methodological distinction between these studies is the fact that the telephone studies were based upon self-reported data while the other study consists of observational data. Thus, there is always the possibility that respondents of the telephone studies may have over-reported their PFD usage and provided socially acceptable answers as opposed to answers that are 100% accurate. At the same time, while the observational study conducted by the Coast Guard was based upon a fairly sizeable sampling of recreational boaters (N=4,806 persons), and efforts were made to ensure that a representative sample was observed (observations took place on a variety of

one accompanying adult wore a PFD.[42] Similarly, other research also found that children were much more likely to be observed wearing a PFD when an adult on board was also wearing a PFD.[45]

However, it is unclear whether the reverse is true, and adults are more likely to wear a PFD when children are on board. One research study with Canadian recreational boaters found that the majority (68%) of adult respondents indicated that they are willing to set a good example for children by always wearing a lifejacket when children are on board.[27] Yet a U.S. study based on observational data found that adults were no more likely to be observed wearing a PFD if children were also on board than those observed on watercraft with no children were present.[45]

Similarly, it seems that the operator of the boat sets the tone for passengers. One research study with Canadian recreational boaters reports that 58% strongly agreed that they always wear a lifejacket if the operator of the boat is wearing one, and 89% claim they definitely would wear a PFD or lifejacket if they were requested to do so by the boat operator.[27] This is consistent with the findings of an observational research study which reported that if the operator of the boat was observed wearing a PFD, the passengers were more likely to be wearing a PFD, and if the operator was not wearing a PFD, any passengers observed were also unlikely to be wearing a PFD.[2] Unfortunately, though one research study found that while 88% of boaters claim to always carry a PFD or lifejacket for every person on board, only 52% insist that everyone wears one.[27]

BARRIERS TO WEARING PFDS

Reasons for <u>not</u> wearing a flotation device while participating in recreational boating seem to be based upon boater perceptions about PFDs that fall into five broad categories:

1) there is a low risk of drowning
2) wearing a PFD restricts movement and interferes with performance of activities
3) wearing a PFD is uncomfortable
4) PFDs are unattractive or unfashionable
5) wearing a PFD is a sign of fear

Perception That There is a Low Risk of Drowning Without a PFD

There is little doubt that perception of risk and attitudes toward risk-taking play as important a role in this issue as in other injury prevention issues. Telephone interviews conducted with male recreational boaters between the ages of 15 and 35 found that about nine in 10 were "looking for a physical challenge" and about three in four believe that "taking risks is part of living." However, about four in five agreed that "taking unnecessary risks is foolish" and a little over one in four claimed that "there is no sense worrying about things that probably won't

and sun tanning activities by some.[47] One study reports that 30% of the recreational boaters interviewed agreed (either strongly or at least somewhat) that wearing a lifejacket "restricts movement too much."[27]

Improving the design of lifejackets and PFDs to improve freedom of movement would clearly have a positive effect on likelihood of usage. Research with male recreational boaters in the target demographic shows that about three in four agree that "more people would wear a lifejacket if they weren't so bulky and restrictive."[25, 26]

Perception that PFDs are Uncomfortable

The most common reason given by those who do not wear lifejackets or PFDs is that they are uncomfortable.[25, 26, 46, 47] Primarily, it is the bulkiness of PFDs that contributes to the perception that PFDs are uncomfortable.[25, 26, 47] However, some of the complaints relate to body temperature. Some feel that wearing PFDs is too warm on a hot and sunny day[25, 26], and 28% of those in another study agree strongly or somewhat that "wearing one makes me too hot."[27] Observational reports provide support for these complaints about wearing a PFD in the heat. When the temperature was below 65°F, 33% of boaters observed in one U.S. study were wearing a PFD in contrast with 29% when the temperature was between 65° and 80°F.[45]

Others dislike wearing PFDs because they say PFDs feel cold and clammy when wet or because they say that it is too bulky to wear a jacket over a PFD, and thus they find it uncomfortable to wear a PFD in cool or windy weather.[47]

One study with males in the target demographic found that 10% of those who do not personally wear a lifejacket under all circumstances while boating claimed that they would always wear a lifejacket if it was more comfortable.[26] Another national study of Canadian recreational boaters reports that 74% of all respondents suggested that making lifejackets more comfortable, easier to fasten, and less bulky would be the best way to encourage usage.[27] Unfortunately, there seems to be only limited awareness of new styles of lifejackets and PFDs that are more comfortable.[27, 47]

Perception that PFDs are Unattractive or Unfashionable

Another complaint about PFDs and lifejackets that is offered as a reason for not wearing them is that they are unfashionable, unattractive, and unflattering.[26, 27, 46, 47] Although concern about esthetics does not seem to be a significant barrier to wearing a PFD or lifejacket for the majority of recreational boaters (or at least few are willing to admit it), there is a segment for whom it is influential. This view is particularly prevalent amongst younger boaters who may be more self-conscious about how they look in a PFD or lifejacket.[27]

Some research suggests that improving the attractiveness of lifejackets and PFDs would likely improve wear rates. In a study that examined the attitudes of males aged 15 to 35 regarding PFD use, 49% were in agreement with the statement that "more people would wear a lifejacket if they were more attractive."[26] Similarly,

CHAPTER 6: EFFICACY OF VARIOUS METHODS OF ENCOURAGING PFD USAGE

As was discussed in previous chapters, PFDs can be an effective tool for preventing drownings, but only if they are worn, not carried on board, and there are numerous reasons why boaters resist wearing PFDs. This chapter will focus on the efficacy of various methods of encouraging boaters to wear PFDs, and thus reduce their risk of drowning. The chapter begins with review of the current legislative requirement in Canada for carrying PFDs on board recreational watercraft and the impact of this legislation for encouraging PFD usage. This chapter will also summarize the success of various educational and social marketing initiatives, incentive programs, and changes to PFD designs and regulations in terms of persuading boaters to wear PFDs. Next, the efficacy of legislative efforts will be explored, including a summary of the legal justification for introducing mandatory PFD wear legislation in Canada.

There have been a number of proposals for encouraging PFD wear.

CURRENT REGULATIONS

In Canada, as well as in many other countries around the world, the law requires that personal flotation devices be carried aboard recreational watercraft. Specifically, the Small Vessel Regulations require that there be a sufficient number of Canadian approved flotation devices of the appropriate size for each person on board a pleasure craft.[49] However, there is no law requiring occupants, on board watercraft, to actually wear a flotation device. As was discussed in a previous chapter, while the vast majority of recreational boaters do comply with the law and carry flotation devices for all persons on board,[27] observational studies suggest that only 21% of adult recreational boaters actually wear a PFD.[2] Thus, the current legislation does not seem to be sufficient to encourage the majority of recreational boaters to wear rather than just carry PFDs while on the water.

EDUCATION, SOCIAL MARKETING, AND INCENTIVES

Mandatory Boater Education

Given the ability of lifejackets/PFDs to potentially save lives, and the evidence that those at risk are not using them, an obvious strategy to encourage usage is to better educate boaters about the risks they are undertaking.

For instance, it might reasonably be hypothesized that those who take a training course on boating safety might be more likely to engage in safety precautions such as wearing a lifejacket or PFD. In Canada, operator competency

called "Sport the Vest" that used paid advertising and professionally produced television commercials, was fairly successful in communicating key messages.[36] Survey results with members of the general public found that 60% recalled the key message of the campaign at the end of each summer the campaign ran.[36]

However, reaching the target group and message recall may not necessarily translate into behaviour change. Despite the multitude of social marketing and public education campaigns designed to increase PFD wear rates in Canada, wear rates remain relatively low. The findings of one research study suggest that campaigns that simply provide proof that PFDs and lifejackets save lives will not be sufficient to motivate many recreational boaters to wear them. In this study, such solid proof of the efficacy of flotation devices would be persuasive for less than one half of the boating population.[27]

There are numerous examples of social and marketing campaigns producing only marginal increases in PFD wear rates, although there is clearly a great need for more rigorous evaluations of educational campaigns. In one evaluation of a drowning prevention campaign using educational strategies to target children in King County, Washington, it was found that after the campaign, ownership had increased from 69% to 75% but PFD use had increased from 20% to only 29%.[52] However, it is unclear whether this increase can be linked to the campaign.

As well, one evaluation in Washington found that PFD use increased slightly following an educational campaign focused on increasing PFD wear rates, from 20% in 1992 to 31% in 1994.[45] But, it has not been established whether this increase is PFD usage is related to the educational campaign.

Evaluation of the "Stay on Top of It" campaign in the King County, Washington area suggested that children's life vest use did not increase significantly following this three-year education multi-media campaign since life vest use was already very high amongst children prior to the campaign.[52] Another evaluation of this same social marketing campaign in King County, Washington, concluded that while PFD use for children did not increase significantly following the intervention, adult PFD wear rates increased somewhat, from 14% to 25%.[45]

As well, comparison of the findings of U.S. PFD Wear Rate Studies conducted in 1997 and 1999 reveals that there was no significant change in wear rates between 1997 and 1999, despite the fact that numerous organizations had specifically focused on the importance of wearing PFDs in their safety messages to boaters.[55]

In Minnesota, one report suggests that observational studies indicate that PFD wear rates have increased from 13% in 1984 to 51% in 2002, and during this period, public service announcements were run on television and the radio and weekly press releases were released during boating season, each highlighting the importance of wearing a PFD.[36] However, it is not known whether this increase in PFD usage is attributable to the educational efforts.

Educational efforts in Australia have also been discouraging. In the community of Victoria in Australia, in spite of the implementation of a comprehensive,

those who bring in old/worn-out PFDs.[36] California also places safety posters advertising safety messages at marina entrances, launch ramps, on docks and other strategic locations to reach recreational boaters.[36] Oregon provides lifejacket safety information online and publicizes drowning statistics, highlighting how many of the victims were not wearing PFDs.[36] In Kentucky and Mississippi, messages about PFDs are delivered via television shows.[36] Texas uses a poster/video public service announcement to remind people that drownings occur very quickly ("it only takes a second").[36] Connecticut presents a PFD Fashion Show every year to publicize the range of PFDs available for different sports and activities.[36] In Maryland, the annual Christmas Boat parades include a float with a sign stating "Lifejackets Save Lives," and the patrol boat contains "PFD Panda" and people wearing lifejackets.[36] Montana distributes water safety packages to families containing information, stickers and an iron-on decal for kids.[36] In Vermont, marine enforcement officers distribute water bottles with slogans such as "Paddle Smart" and "Wear Your Lifejacket" to recreational boaters.

A number of other initiatives were also mentioned by National Association of State Boating Law Administrators representatives when they were asked in a recent survey for this background research paper to indicate any non-legislative methods that successfully encouraged PFD use (see Appendices B and C for a copy of the questionnaire as well as a full discussion of methodology and findings). NASBLA representatives from Oregon, Alaska, and Wisconsin claimed that the provision of coupons for free ice cream to children who were spotted wearing a PFD stimulated PFD usage. Similarly, a representative from Georgia indicated that they were able to increase PFD usage by printing slogans on Lifesavers candy and handing it out to children wearing their PFDs. Other giveaways were apparently effective as well at increasing wear rates. In Georgia, t-shirts were given to children found wearing their PFDs, while in Nevada, cash and prizes were awarded to vessels in which all occupants were voluntarily wearing their PFDs (in a promotion called "it pays to wear your lifejacket"). The NASBLA representatives had the impression that these efforts were effective in encouraging the usage of flotation devices, but they did not offer any specifics regarding the degree to which wear rates increased to support these claims.

Other NASBLA representatives in Idaho, West Virginia, California indicated that they believe that public service announcements (via radio, TV, newspapers) successfully increased PFD usage in their respective states. A NASBLA representative from Maine suggested that boating safety education courses had stimulated PFD usage in that state. As well, NASBLA representatives from Georgia, Massachusetts, Montana, New Hampshire, California, and New Mexico also claimed that educational efforts had paid off in terms of encouraging recreational boaters to wear PFDs. In California, children in grades K-12 receive education about the importance of wearing PFDs, and adults are targeted at boat shows. In New Mexico, K-12 students are exposed annually to a boat safety education program with an emphasis on how little time is required to drown in a boating accident and the time that it actually takes to put on a PFD in a boating accident. These messages are also reinforced for younger children in a colouring

In 1997, PFD standards were changed to allow inflatable PFDs to be used for rowing and paddling.[28] This change was implemented in order to increase usage of PFDs among these target groups since both lifejackets and Inherently Buoyant PFDs are considered by some to interfere with rowing and paddling activities that require full range of motion. It is not yet clear whether this change in standards has had the desired impact, namely increasing PFD wear rates and decreasing the number of drowning deaths. Further changes to the standards, such as lowering somewhat the minimal buoyancy requirements might also combat the public opinion that PFDs must be bulky and uncomfortable and thus boost wear rates.

LEGISLATION

Another approach that could be considered in order to address the issue of increasing PFD wear rates is introducing legislation that would make it mandatory for persons on board small recreational watercraft to wear a PFD while on the water. Aside from the potential to increase PFD wear rates, some argue that another benefit of this approach would be that enforcement of mandatory wear legislation would actually be simpler, faster, less intrusive, and less expensive than regulations that stipulate that a PFD of the appropriate size must be present for each person on board a recreational boat.[4] The reasoning is that compliance could be verified from a distance rather than by stopping boats to check whether flotation devices are present. However, it should be noted that there are multiple purposes for enforcement on the water, such as verification of operator sobriety, and competency training, which would still require stopping boats and interacting with occupants.

Some jurisdictions have introduced mandatory wear PFD legislation, and this will be discussed in depth in the next chapter. However, it is useful to first examine the impact of other types of safety legislation as perhaps one can estimate the likely success from similar measures to legislate protective gear to prevent other classes of injury. These include Boating While Intoxicated legislation, mandatory helmet use for cyclists, or seat-belt laws for motor vehicles.

Boating While Intoxicated Legislation

Many of the states in the United States have introduced Boating While Intoxicated (BWI) legislation, although some laws are more stringent than others, which provides an opportunity to evaluate the impact of legislation by examining boating fatality statistics both before and after legislation was introduced among states with strict legislation versus those with more lenient legislation. The National Association of State Boating Law Administrators conducted a research study in 1990, after many states had introduced BWI legislation, in order to assess the impact of this legislation. The report concluded that there was a higher percentage of decline in accident fatalities in states with more stringent BWI laws versus those with more lenient BWI laws (for example, less stringent blood alcohol content standards or less rigorous enforcement).[32] This finding suggests that the boating community may adapt and change their

October 1979 in which they enforced the seat-belt legislation to the limit, and this was publicized via the news media. The result was an increase in seat-belt usage from 58.5% to 80%.[57]

Another potential barrier for any safety legislation to overcome is public opinion. Some research suggests that although a large segment of the Canadian population initially objected to the creation of mandatory wear legislation for seat-belts on the grounds that it violated their rights, this opposition was relatively short-lived. As an example, public support for the mandatory seat-belt laws in Saskatchewan increased from 54% prior to the enactment of the law to 75% 13 months after the law was proclaimed.[57] Presumably this shift in public opinion came about partially because the public became accustomed to wearing a seat-belt and also thanks to education campaigns publicizing the reduction in deaths and injuries attributable to increased seat-belt usage.

It should be noted that the segment of the population that Ontario's seat-belt legislation had the smallest impact on initially was teenagers.[60] According to one observational study, "shoulder belt use by teenaged drivers and teenaged or younger passengers was only slightly and temporarily affected by the law."[60]

Bicycle Helmet Legislation

The impact of bicycle helmet legislation provides another useful comparison. In 1996, British Columbia enacted a law requiring bicyclists of all ages to wear a helmet when riding on a public roadway. An evaluation based on observational data conducted in 1995 (the year preceding the legislation) and 1999 (three years after the law was introduced) suggests that this legislation had a significant impact on helmet use in the province. This study reports that the likelihood of a cyclist wearing a helmet in 1999 was double to triple the likelihood in 1995 for males and females, adults and children, those in metropolitan and non-metropolitan areas, and for all classes of bicycles. [61] Helmet usage among commuters was already high before the legislation, with 60% observed wearing a helmet in 1995. This increased to 75% in 1999. Usage by cyclists in recreational areas increased from 48% in 1995 to 74% in 1999. And the most dramatic increase in helmet usage was amongst those observed in neighbourhoods. For this group, helmet usage increased from 39% in 1995 to 72% in 1999.[61]

Similar legislation was enacted in Halifax in 1997. An evaluation of this legislation found that the rate of helmet use climbed from 36% in 1995 and 38% in 1996 to 75% in 1997, 86% in 1998 and 84% in 1999. This impact was sustained, even though no helmet-promoting media education campaigns were mounted in the jurisdiction after 1997.[62]

The evidence above indicates that legislation increases the rate of helmet use. The more important question is does helmet legislation decrease head injury rates? There are two studies that have reported a reduction in head injury rates after helmet legislation. They both used a time series design without a concurrent comparison group and therefore, the criticism is that the reduction could have been due to a general downward trend in head injury rates.[63, 64]

handed down by judges in earlier court cases that are similar would be examined, and then the principles of earlier decisions would then be applied to the case in question in order to formulate a judgement.[69] Civil liability is determined by a branch of common law, known as tort law.[69] Tort law refers to that body of the law that specifies the circumstances in which an individual is likely to be found liable for any damages that result from their actions, whether intentional or through negligence.[70] Legal recourse based on tort law is oriented towards compensation for damages suffered.[69]

The legal justification for introducing mandatory wear legislation rests on the question of whether existing tort law clearly deals with the issue of liability in the event of a boating incident involving injury or death and how negligence for such incidents is determined. This issue was examined in great detail for the purposes of this background research paper. (For a more detailed summary of the findings, please refer to Appendix I.)

In tort law, it is necessary to establish several interrelated factors in order to determine the liability of the boat owner/operator in any incident involving injuries or death to a passenger:

1. Establishment of duty of care
2. Establishment of whether "standard of care" was breached
    a) "reasonable person" test
    b) "emergency" test
3. Establishment of injury suffered
4. Establishment of rational connection between owner/operator's conduct and user's injury
    a) "but for" test

In order to illustrate these factors that determine liability, it is useful to examine a particular case from 1966: Horsley et al vs. MacLaren et al.[71] The boat owner/operator was MacLaren, and he had six guests aboard his 30-foot cabin cruiser at 6:30 p.m. on May 7, 1966. One of the passengers, Matthews, got up from his seated position at the bow of the boat, walked along the cat-walk of the vessel, lost his balance, and then fell into the water. One of the other passengers alerted the others that Matthews was overboard, and upon hearing the news, the boat owner/operator, MacLaren, put the engine controls in neutral, then in reverse, backing to within an estimated five feet of Matthews. Other passengers attempted to throw a life-ring to Matthews, and to reach out to him using a six-foot pike pole. However, Matthews appeared to be unconscious and did not respond to these efforts. Meanwhile, the boat had drifted further from Matthews, and then was again reversed to a closer position. At this point, after three or four minutes had elapsed since Matthews went overboard, Matthews was seen to be face-forward in the water, and disappeared under the surface. In response, two other passengers, Horsley and Jones, dove into the water to attempt to rescue Matthews. Jones' spouse then took over control of the boat and swung the boat around until she could be retrieved from the water. MacLaren then resumed the controls and manoeuvred the boat so that Horsley could be pulled out of the water. However, Horsley was unconscious and was unable to

reasonableness. The Court had to consider the question of whether the manoeuvre undertaken by MacLaren followed appropriate rescue procedures, and whether or not this affected the likelihood of Matthews surviving. The Court observed that MacLaren had failed to comply with the "man overboard" rescue procedure. However, two experts who testified estimated that the appropriate rescue method would have taken two minutes or more. The approximate time from the moment that Matthews fell overboard until his body disappeared beneath the water was three or four minutes. Thus, the Court concluded that MacLaren's rescue efforts did not significantly worsen Matthews' chances of survival, citing the fact that had Matthews been conscious, he could have grasped a lifejacket thrown to him when the boat was first reversed and a lifejacket was thrown. The Supreme Court of Canada also approved this decision.

Another concept, known as the "emergency test," must be considered in determining an appropriate standard of care. Specifically, this concept suggests that errors in judgment may be excusable and understandable in moments of extreme stress in an emergency. Accordingly, both the Ontario Court of Appeal and Supreme Court of Canada have frequently taken the context into account and have overlooked conduct that would normally be considered below the required standard of a reasonable person. Thus, it is noteworthy that the emergency test lowers the acceptable standard of care which boat owners/operators owe to their passengers, thus limiting their duty of care to passengers. This lowering of acceptable standard and limitation of duty makes it difficult to ascertain whether the boat owner would be found negligent in any case involving an injured or drowned passenger on his or her watercraft.

In the test case, Horsley et al vs. MacLaren et al, the emergency test appears to have played a prominent role in the decisions at both the Ontario Court of Appeal and the Supreme Court of Canada. One of the most important determinants of the owner/operator's liability in this case was whether the application of the wrong rescue procedure (backing toward the victim rather than approaching him bow-on) amounted to negligence. If this was deemed to be negligence, the owner-operator would therefore be liable. However, if MacLaren's actions were judged to be an error of judgment excusable by the extenuating circumstances in the emergency, MacLaren would not be held liable. The majority of both courts decided that MacLaren's method of rescue, though an error in judgment, did not constitute negligence given the confusion of the sudden and tragic occurrence.

The next issues that must be resolved in determining the boat owner/operator's negligence in an incident involving his or her watercraft are the establishment of injury suffered by a passenger and the connection between the boat owner/operator's conduct and the passenger's injury. In tort law, it must first be proven that a passenger sustained a material injury, and second, that this injury was a direct result of the actions (or inaction) of the boat owner/operator. Typically, establishing whether or not an injury was sustained by a passenger is easily accomplished. However, proving a causal connection between the actions

CHAPTER 7: LIKELY EFFICACY OF MANDATORY WEAR LEGISLATION FOR ENCOURAGING PFD USAGE

In the previous chapter, various approaches to increasing PFD wear rates were reviewed, including the introduction of safety legislation. Since mandatory PFD wear legislation has not been introduced in Canada, it is not possible to conduct an evaluation in order to assess its efficacy in increasing PFD usage. However, other jurisdictions have introduced legislation mandating recreational boaters wear a PFD while on the water in small recreational watercraft (though legislation requirements vary considerably from jurisdiction to jurisdiction, and many laws pertain only to children).

Thus, in this chapter, we will review the legislation that has been implemented elsewhere and then will discuss the impact of this legislation, based upon available evaluation studies as well as feedback from international informants. This chapter will also contain a summary of what has been learned from key Canadian informants about the anticipated barriers and opportunities for introducing mandatory PFD wear legislation in Canada. We will conclude this chapter with a discussion of the probable reaction of Canadians to the notion of mandatory PFD wear legislation based upon previous research as well as research that was conducted specifically for the purposes of this background research paper. This opinion poll included many topics, including current watercraft and PFD usage, the degree of support or opposition for PFD wear legislation, and whether or not respondents would comply with PFD wear legislation if it were introduced.

IMPACT OF PFD LEGISLATION IMPLEMENTED IN OTHER COUNTRIES

Given the inability of educational campaigns alone to change behaviour, a number of jurisdictions have adopted regulatory measures, mandating the use of lifejackets or PFDs for some groups. Many of the states in the United States and the states of Victoria and Tasmania in Australia have each adopted some form of legislation mandating PFDs be worn on recreational watercraft (often for certain defined ages, for watercraft of a defined size, and for certain defined circumstances such as when not in an enclosed cabin or while the vessel is underway).

United States

As shown in the table below, most (40) U.S. states have legislated mandatory PFD use for children in small craft. However, some states' PFD wear laws are applicable only for vessels of a particular size, some are dependent upon whether or not the vessel is underway, and some exempt children who are in an enclosed cabin or below decks. As well, age requirements vary widely from state to state. Some states, such as Florida and Maryland, permit children as young as six or seven to ride in a recreational watercraft without wearing a PFD.

PFD Wear Legislation By State (cont'd)

State	State PFD Wear Legislation for Children	Circumstances and Age Requirements of State PFD Wear Legislation
Hawaii	No	None
Idaho	Yes	Children under 15 on boats less than 20 feet when boat is underway; PWC operators and passengers; water skiers
Illinois	Yes	Children under 13; PWCs
Indiana	No	PWC operators and passengers; water skiers
Iowa	No	PWC operators and passengers; water skiers
Kansas	Yes	Children under 13; PWC operators and passengers; water skiers
Kentucky	Yes	Children under 12 when vessel is underway; PWC operators and passengers; water skiers
Louisiana	Yes	Children under 13 on vessels less than 26 feet
Maine	Yes	Children under 13; PWC operators and passengers; water skiers
Maryland	Yes	Children under 7 when vessel under 21 feet is underway except when below deck or in an enclosed cabin; PWC operators and passengers; water skiers
Massachusetts	Yes	Children under 12; PWC operators and passengers; water skiers; canoeists/kayakers mid-September to mid-May
Michigan	Yes	Children under 6; PWC operators and passengers; water skiers
Minnesota	No	PWC operators and passengers
Mississippi	Yes	Children under 13 in boats under 26 feet while underway
Missouri	Yes	Children under 7; PWC operators and passengers
Montana	Yes	Children under 12 when vessel is in motion; PWC operators and passengers; water skiers
Nebraska	Yes	Children under 12; PWC operators and passengers; water skiers
Nevada	Yes	Children under 12 when vessel is underway and not in an enclosed cabin or below decks; PWC operators and passengers; water skiers
New Hampshire	Yes	Children under 6; PWC operators and passengers; water skiers
New Jersey	Yes	Children under 13 when underway and not in an enclosed cabin; PWC operators and passengers
New Mexico	Yes	PWC operators and passengers; water skiers; kayakers; canoeists; operators of rubber rafts

According to a National Transportation Safety Board report, the varying age requirements from state to state do not appear to be based on accident data or scientific research.[32] The age of 12 has repeatedly been linked to operator maturity in the marine community, and NASBLA has repeatedly called for children under the age of 13 to be required to wear a PFD based upon research regarding the physiological, emotional and motor skill changes that occur around the age of 12.[32] However, the age requirements for some states seem to have been chosen based on other factors such as the age at which children are required to wear seat-belts. In other states, the age stipulated in state legislation was the result of a compromise between those who oppose any age requirement and those who favour stricter laws.[32]

More recently, state PFD wear laws have been subsumed under an American federal statute. Effective as of March 29, 2002 there is a Federal Rule requiring any child under 13 to wear a PFD when on any type and size of recreational boating vessel.[72] The Federal legislation does not supercede state legislation, but instead adopts the applicable age set by a State statute within that state/territory/district. It is noteworthy that the above American legislation does not address the target group most at risk for drowning while operating a recreational boat, namely young adult men.

There seem to be few formal evaluations of the impact of legislation requiring children to wear a PFD. However, one U.S. Coast Guard study of PFD wear rates concluded that the wearing of lifejackets was directly proportional to current mandatory wear laws.[73] As well, analysis of drowning statistics reveals that the rate of children drowning in states that require children to wear lifejackets (1.22 for every 1,000 accidents) is lower than that of states that do not mandate PFD wear for children (1.31 drownings for every 1,000 accidents). Although these findings are not conclusive, the results suggest that PFD wear legislation increases the likelihood of wearing a PFD, and this may in turn have led to a decrease in the number of drownings in states with PFD wear legislation.

Comments from many NASBLA representatives in states with PFD wear legislation for children provide at least anecdotal support for the idea that the introduction of state PFD wear laws have increased PFD wear rates. When asked in a survey for the purposes of this background research paper (see Appendices B and C for a copy of the questionnaire as well as a full discussion of methodology and findings), comments from many NASBLA representatives in states with PFD wear legislation for children seem to suggest that PFD wear rates have increased following the introduction of legislation. U.S. respondents from 11 states said that they believe that PFD usage has increased considerably due to the introduction of mandatory PFD wear laws for children in their state. And representatives from another 11 states believed that PFD usage had increased slightly after enactment of PFD wear legislation for children. None of those interviewed held the belief that legislation had not had any impact or a negative impact on wear rates.

Unfortunately, none of the respondents cited any formal research studies or evaluations to corroborate their contention that legislation had made an impact.

Tasmania

The only other country that has introduced PFD wear legislation is Australia. The state of Victoria has enacted a PFD law that requires children under the age of ten to wear a PFD while the vessel is underway and when not in an enclosed cabin.[74] The state of Tasmania has introduced legislation that makes it mandatory for boaters of all ages to wear a PFD while on-board vessels under six metres in length while the vessel is under power and when not in an enclosed cabin or below deck.[31]

A representative from Tasmania participated in the international survey circulated to gather input from the international community for this background research paper. The sole Tasmanian respondent indicated that PFD wear rates have increased considerably since the enactment of mandatory wear legislation in 2001. Unfortunately, no details regarding evaluation results were provided, although the Tasmanian respondent claims that Tasmania now has a 95% compliance rate overall. Research conducted prior to the introduction of the legislation suggests that wear rates were already relatively high before the law was enacted (49% of adults and 88% of children routinely wore PFDs while boating).[31] Moreover, this respondent claimed to be pleasantly surprised that Tasmania has not encountered any significant issues or problems with enforcement of the legislation.

ANTICIPATED BARRIERS AND OPPORTUNITIES FOR INTRODUCING PFD LEGISLATION – ACCORDING TO INTERNATIONAL STAKEHOLDERS

In order to determine the potential barriers to the introduction of mandatory wear legislation for recreational boaters in Canada, a number of international experts from drowning prevention and recreational boating organizations were consulted, and this was supplemented by literature searches (see Appendices B, C, and D for a more detailed discussion of methodology and findings).

Barriers

According to respondents from jurisdictions that have already enacted PFD wear legislation, the biggest barrier they had to overcome pertained to a reluctance on the part of the government to create legislation. In fact, all of the respondents who have already introduced legislation indicated that the lack of enthusiasm from the government was at least a small barrier. For instance, one respondent said that the biggest barrier they had to overcome was that "legislators did not see it as a major issue." This individual said "several years of lobbying and effective presentations at legislative hearings... resulted in (our) success." Another person noted that while public resistance to PFD wearing was a barrier to creating state PFD legislation, it seemed that there was more legislative resistance than public resistance.

As well, most jurisdictions also had to deal with either resistance or a lack of enthusiasm from the general public. The majority (84%) indicated that, in their

PFDs despite the absence of legislation, which therefore provides little incentive to enact a law.

A lack of enthusiasm from the government also was rated as a critical barrier by some (60% identified this factor as a big barrier), but for others, this had nothing to do with the absence of PFD legislation in their jurisdiction. One respondent described the lack of government enthusiasm for PFD legislation in this way, "the current political climate within our (legislature) would not enact a bill such as this proposal." Respondents from one country without PFD wear legislation suggested that their government was seeking to reduce the amount of legislation in general and holds the view that water safety is up to individual boaters and is not a responsibility of the government.

Interestingly, concerns about enforcement of the legislation appear to be a much bigger issue among those jurisdictions that have not created PFD wear legislation compared to those that have. As one respondent noted, enforcement "takes a lot of effort at the same time that enforcement capacity is very small. Priority is low!" Otherwise, it does not seem as if conflicts or concerns about various aspects of legislation are key barriers preventing these jurisdictions from introducing legislation.

Some respondents from jurisdictions without PFD wear legislation cited a number of reasons why they believe that legislation is not required. For instance, some pointed to the relatively small number of drowning cases and suggested that the statistics do not merit the creation of legislation that would make it compulsory for all boaters to wear flotation devices. In the U.K. for example, one respondent commented that "incidents and accidents are not at a level to indicate that further legislation for the compulsory carriage of PFDs is required."

One Dutch respondent mentioned that swimming lessons had formerly been part of the school curriculum, and as a result, the majority of Dutch people in a certain age bracket know how to swim. This respondent concluded that this widespread swimming ability makes it unnecessary to create legislation mandating PFDs be worn by recreational boaters (although this clearly does not address the issue of water temperature and the effect of cold water on swimming ability).

As well, one German respondent mentioned that due to insurance requirements, individuals are forced to wear flotation devices so that they do not lose coverage. Another German survey participant suggested that the owner of the vessel is legally responsible for the safety of the crew or guests, and this essentially means that it is up to the owner to ensure that flotation devices are worn by passengers. Otherwise, he or she will be held responsible in the event of an incident.

Opportunities

Survey respondents were asked about what factors could or did facilitate the creation of PFD legislation. For those jurisdictions in which PFD legislation has already been introduced, having champions that could bring attention to the

Governments' awareness of either legal or economic rationale for legislation apparently was less influential in creating the mandatory wear law.

Jurisdictions that do not currently have laws requiring boaters to wear a PFD believe that the publicity from one or more drowning incidents could bring enough attention to the issue of drowning that it could pave the way for the introduction of legislation. Specifically, 95% speculated that drowning incidents in which PFDs were not used could play some role in facilitating the creation of PFD wear legislation. As one respondent said, "a 'media storm' about an incident or series of incidents can provoke both a political will and pressure from the public... some high profile incident might trigger the motivation to bring about legislation."

Pressure or enthusiasm from the general public and interest from the government in creating legislation were also perceived to be important in building momentum for legislation. Seventy-nine percent of all respondents from jurisdictions without PFD wear legislation consider support from the public as well as the government to be factors that could lead to the creation of legislation. One respondent suggested that most boaters feel safe in their boat without wearing a PFD and "nobody expects to end up in the water." This respondent noted that canoe, kayak and PWC enthusiasts have a greater expectation of ending up in the water, so they are more likely to accept legislation that would make it compulsory for them to wear a flotation device. The implication is that by educating users of other types of watercraft about their chances of unexpectedly capsizing or falling overboard, this may increase their acceptance of PFD wear legislation.

Seventy-eight percent also felt that if individuals or groups opted to become champions for legislation and brought attention to this issue, this could play some role the creation of mandatory wear legislation. One respondent from a country without any PFD wear legislation suggested that children tend to be very successful in the role of "safety ambassadors."

Again, as with the respondents from jurisdictions who have already introduced PFD wear legislation, those without such laws contend that making the government aware of the legal and economic arguments for the law is less influential than other factors.

One respondent from a state that already has enacted PFD wear legislation for children suggested that it is far easier to first introduce legislation targeting children before considering legislation that would also pertain to adults. The reasoning of this respondent is that "compliance is nearly universal and objections few." Another respondent in a state with child PFD wear legislation echoed this view and said that "we chose not to try for mandatory adult wearage because we know our legislators and the public would speak out against such a proposal." One other respondent from a state that has already introduced PFD legislation for children suggested being "prepared early on to compromise." It is presumed that this respondent is suggesting that it may be necessary to

Barriers and Opportunities

Cultural Attitudes

The cultural attitudes of both Canadians in general, but particularly recreational boaters, will have important implications for the likely success of the introduction of PFD wear legislation. Canadian stakeholders were asked whether Canada's cultural context and the cultural attitudes of recreational boaters would facilitate or hinder the introduction of legislation, and responses were somewhat mixed. While some respondents suggested that Canadians generally tend to be accepting of legislative solutions to social problems, or at least to legislation that is perceived to be justified and appropriate, others characterized Canadians as being resistant to legislation due to the value placed on freedom and independence. These individuals referred to the controversy that surrounded the introduction of gun registration, seat-belt laws, and bicycle helmet legislation as examples.

The willingness of recreational boaters to accept legislation also evoked differences in opinion. One respondent suggested that boating may be "one of the last frontiers" to experience regulation, and therefore, boaters may resist the introduction of any sort of legislation that would impinge upon their freedom and independence. However, another respondent held the opinion that recreational boaters are relatively accepting of legislation and cited the relative absence of opposition to Pleasure Craft Operator Cards as evidence. One other respondent claimed that previous boating regulations (such as the introduction of safe powering limits and regulation requiring mandatory flotation of boats under 6m) have contributed to declines in boating fatalities, which suggests that boaters must have accepted and complied with these regulations.

There was some discussion regarding the attitudes of recreational boaters towards wearing PFDs and implications for the prospect of PFD legislation. It was noted that PFD wear rates are much higher among users of watercraft such as kayaks and personal watercraft compared with other watercraft, and various explanations were offered. One respondent suggested that the recent trend toward colour coordination of PFDs with kayaks and PWCs has made wearing PFDs fashionable. Others suggested that these groups are more likely to wear PFDs based upon practical reasons such as lack of storage space to carry a PFD (in order to be compliant with existing legislation) and the expectation of PWC users and kayakers that they will be immersed in the water. The inference is that these watercraft users are unlikely to resist legislation. However, other respondents argued that some boaters have a sense of ownership over boating activities and would therefore be resistant to losing the right to choose whether or not to wear a PFD. Similarly, other older boaters who do not ordinarily wear a PFD may also be resistant to legislation simply because they are accustomed to boating without wearing one.

Communication Within Boating Community

Clearly, if the boating community itself could come to some degree of consensus regarding the need for mandatory wear legislation, this common voice would aid in any lobbying efforts. In order to achieve consensus, it is necessary to stakeholders in the boating community to communicate with each other and advance options (such as legislation) for drowning prevention. Three respondents mentioned the national Recreational Boating Advisory Council as a forum where stakeholders can discuss options such as legislation. Respondents also mentioned the Canadian Marine Advisory Council, the regional Recreational Boating Councils, and the Canadian Safe Boating Council as important communication forums. Each of these forums are perceived to have broad and overlapping memberships which would allow for discussion regarding legislation amongst a large number of interested parties which would clearly facilitate the creation of legislation. Several respondents also suggested that the World Congress on Drowning and the Italian Conference on Safety and Transportation would offer other opportunities for Canadian stakeholders to discuss the issues, with the added benefit that stakeholders could also learn from approaches taken in other countries. One respondent suggested that Canada could consider hosting the second annual World Conference on Drowning, which would present an opportunity to bring attention to the issue and possibly advance the pace of the policy process.

However, some respondents cautioned that other groups would not be represented in these boating related councils, such as: cottage owners, Northern Canadians, hunters and fishers, and other small vessel owners (many may not even perceive themselves as "boaters" as boating may be perceived more as a means to participate in some other activity for these groups). Thus, reaching this diverse group of boaters may be challenging, and may necessitate more costly strategies such as public announcements in print media, town hall meetings, notices in public spaces or canvassers in cottage areas. Reaching these diverse groups and building a consensus for mandatory wear legislation could therefore be a potential barrier to creating this legislation.

While some expressed concerns about assuring participation from some difficult-to-reach boating groups, for the most part, it seems that informants shared the opinion that the boating community has the ability to communicate with one another through various forums, which would facilitate the creation of legislation.

Communication to General Public

Generally, the Canadian informants interviewed shared the opinion that any legislative efforts must be accompanied by initiatives to educate the general public, and boaters in particular, about the need for mandatory wear legislation. Some supported the idea of public education on the basis that public support (of taxpayers and end users) must be well documented before an issue is placed on the policy-making agenda since politicians are driven by voter support. As well, one respondent supported the notion of public education since s(he) believes that an informed public would make wise safety decisions. Thus, public education

consequences such as injury or property damage have not been sufficiently studied. There was also some disagreement among respondents regarding whether or not sufficient research has been conducted regarding boater attitudes towards PFDs and whether or not mandatory wear legislation would actually impact wear rates and reduce drowning fatalities. One other respondent emphasized the need for the boating community to be educated regarding the physiological phenomenon of cold-water shock and how wearing a PFD can help to reduce the effects of cold water.

While many respondents believed that sufficient statistical evidence supporting the creation of mandatory wear legislation has been collected, others identified gaps in knowledge that they perceived should be addressed. However, the barrier may not be the absence of statistical evidence, but rather the vastness of the research. Perhaps condensing the drowning research and creating materials that would be appropriate for various audiences would facilitate the legislative process.

Enforcement Issues

Since Canada is such a vast country geographically, this could make enforcement of mandatory wear laws challenging. One respondent held the view that Canadian bodies of water exceed the capacity of enforcement agencies to effectively enforce all boating laws. However, it is evident that this geographical context does not negate the utility of regulations in the boating environment since Canada has not left this sphere unregulated and PFD carriage regulations currently exist.

Enforcement could prove challenging in light of resource issues raised by other respondents. Two respondents observed that marine law enforcement is not currently evenly distributed across the country, with most enforcement centred in Ontario. Respondents also explained that limited resources of police departments have contributed to a deficit in personnel to apply existing boating laws. Two respondents stated that the Coast Guard does not play an enforcement role, although one respondent suggested that the Coast Guard should be granted some responsibility in that domain.

Thus, most respondents have identified either human resource or financial issues regarding the enforceability of mandatory wear legislation that will need to be addressed since laws must be enforceable to be perceived to be legitimate.

Political Context

The current political context may also influence the success of any legislative initiative. Several informants expressed the view that politicians are driven by voter support and are wary of any legislative initiatives that may prove politically unpopular. Further, two respondents speculated that recent reactions to the federal gun registry will make policy- makers reluctant to initiate a policy process for PFD legislation. As well, two respondents mentioned that the limited budgets of the Coast Guard and Office of Boating Safety may negatively impact legislative efforts. One other respondent raised the uncertainty around Coast Guard management of vessel licensing as a concern. Specifically, this individual

Degree of Overall Support for Introduction of PFD Wear Legislation

The informants interviewed for this background research paper were asked about whether federal regulation is the best policy alternative to the problem of recreational boating drownings. Three respondents indicated that they were in support of mandatory PFD legislation as they strongly believe that PFDs save lives.

Two respondents argued for greater enforcement of existing boating laws rather than the creation of new regulatory proposals. However, even if enforcement was strengthened and this effort increased PFD carriage rates on boats, there is no guarantee that this would also increase wear rates.

Three respondents stated that legislation cannot stand alone but has to be integrated with other interventions to influence boating behaviour. Many respondents raised the issue of the importance of public education regarding the safety benefits and rationale for mandatory PFD wear, and maintained that this would increase public acceptance of the legislation.

One respondent interpreted the federal regulatory policy guidelines to mean that regulation should be a last resort in social interventions.

Another informant stated emphatically that society cannot (and should not) legislate common sense.

Respondents also offered opinions regarding specific aspects of the legislation. For instance, three respondents envisioned that mandatory wear legislation would require PFD use in all conditions for all ages.

However, some respondents interviewed were in favour of specifying conditions under which PFDs were required. Conditions suggested by respondents included depth of water, distance from shore, weather conditions, watercraft type, time of year, and swimming ability. The rationale for specifying conditions in which PFD wear is required varied. One person feared that a strict policy without exemptions would yield poor compliance. Four respondents argued that regulation should apply to small open vessels and singled out powerboats and canoes particularly in cold water in the spring and fall. Two respondents expressed a concern that any conditions specified by mandatory wear legislation would have to be logical to prevent mockery of the overall regulatory intent.

On the other hand, two individuals expressed the view that specifying particular conditions for PFD wear would make enforcement more difficult. Another respondent also raised the concern that creating legislation requiring PFD use in bad weather does not address the issue of the safety of boaters who are unexpectedly immersed in good weather.

Interestingly, none of the respondents interviewed favoured regulations for children only, which is the approach taken by the United States and one of the states in Australia. Four respondents justified this opposition to legislation for

powerful intervention. Legislation has been effective in other injury prevention domains, such as seat-belts[57, 58], and bicycle helmets.[61, 62]

Such Legislation Should be Feasible in Canada

A legal argument can be made for introducing mandatory wear legislation, which rests on the question of whether existing tort law clearly deals with the issue of liability in the event of a boating incident involving injury or death and how negligence for such incidents is determined (See APPENDIX I). The present study found that judicial standards are inconsistent and various levels of Canadian courts have used different standards to determine the liability of boat owners. In particular, the courts are not agreed on some of the factors that determine liability of boat owners/operators: reasonable person test, emergency test, and the but-for test. Consequently, given the lack of clarity regarding the responsibility for safety gear in tort law, this lends some support to the argument for creating legislation since it would improve the consistency of decisions and would assist the courts in measuring the extent of a boat passenger's negligence. Specifically, mandatory wear legislation would ensure that boat users who fail to wear lifejackets or PFDs would be consistently judged to be guilty of contributory negligence. This would likely motivate small craft users to wear lifejackets or PFDs when on the water, which would in turn reduce drownings.

In addition to legal justification, any regulatory proposal must address certain considerations such as: public will, the existence of a problem warranting federal intervention, evidence that regulation is the best alternative, evidence that benefits of regulation would outweigh costs, and that any regulation has the potential to be enforced (See APPENDIX E). We have addressed the existence of the problem, and the evidence that regulation is the best alternative above. We turn now to the issues of public will, benefits and costs of regulation and enforcement.

Public Will

In our survey of international stakeholders the biggest barrier identified to obtaining legislation for jurisdictions that have it, were a reluctance on the part of the government to create legislation related to resistance or lack of enthusiasm on the part of the public toward such legislation (See APPENDIX B). Similarly, respondents who represented jurisdictions that have not enacted PFD wear legislation also rated both a lack of public pressure as well as resistance amongst the public due to the value they place on personal freedoms as being the key barriers to introducing legislation.

There is a general belief among stakeholder groups both within Canada and abroad that the general public will be strongly opposed to any mandatory wear legislation. Our current survey demonstrated no such reaction. The vast majority (70-87%) of boaters and non-boaters of all ages supported the idea of mandatory wear legislation, with only 2-9% wanting it to be restricted to children, and only 5-7% being opposed (See APPENDIX G).
Additionally, Canadians surveyed indicated that if PFD wear legislation were enacted, the vast majority (84-93%) would comply with the law under all

any harder to enforce than the current mandatory carry legislation, as the former requires carrying the PFDs in a more visible location than the latter.

RECOMMENDATIONS

Four general conclusions arise from this report namely: boating related drownings warrant action, PFD wear is the risk factor to address in preventing boating related drownings, mandatory wear legislation is the intervention to employ to increase PFD wear rates, and finally that such legislation should be feasible in Canada. It is thus the recommendation of these authors that:

The PFD Task Force, and the Canadian Safe Boating Council as a whole, work toward mandatory PFD wear legislation.

However, the research also suggests that the climate is not quite ready for adoption of such legislation, at least among key stakeholder groups. Thus should the Canadian Safe Boating Council decide to move forward in promoting legislation, it is recommended that they develop a strategy of research and public education in support of (and in parallel to) working toward this end. Specifically we recommend that the PFD Taskforce:

Craft a timeline for achieving milestones in the policy creation process. The timeline should incorporate the meeting schedules of recreational boating forums so that deliberations on mandatory PFD legislation can proceed in a concerted fashion.

Identify a champion organization respected by stakeholders in recreational boating and identified as an experienced lobby group to lead a promotion initiative for mandatory wear legislation. The CSBC is likely the best candidate for this role.

Partner with their counterparts in other jurisdictions such as Tasmania to conduct evaluations of the efficacy and cost-benefits associated with mandatory wear legislation, where it has been enacted.

Assess the feasibility of hosting a future World Congress on Drowning as a way to raise the public profile for the issue

Draft a list of stakeholders that should be included in policy consultations

> For example, consider deeper engagement with the healthcare, public health and injury prevention networks in development of an policy coalition

Demonstrate voter support for a legislative initiative to policy makers through public consultations, such as town hall meeting, and through involvement of public representatives in any coalitions that would work toward legislation

> Strategize on methods to capture the input of boating constituents who do not have representation in existing boating organizations and councils

- Given the large proportion of boating related drownings involving alcohol, are there parallel approaches that could be taken to pursuing mandatory wear legislation, with this particular "at-risk" group.

- Would lowering some of the buoyancy standards to create even more comfortable PFDs or other floatation aids boost wear rates? Could this be done without compromising safety?

- Given the low general knowledge about recent changes to PFD standards and designs, what impact would increasing public awareness of the new designs have on wear rates?

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APPENDICES

APPENDIX A: PROPOSAL

APPENDIX B: INTERNATIONAL ENVIRONMENTAL SCAN

APPENDIX C: INTERNATIONAL ENVIRONMENTAL SCAN—SURVEY FOR U.S. RESPONDENTS

APPENDIX D: INTERNATIONAL ENVIRONMENTAL SCAN—SURVEY FOR INTERNATIONAL RESPONDENTS

APPENDIX E: KEY INFORMANT INTERVIEWS WITH CANADIAN STAKEHOLDERS

APPENDIX F: KEY INFORMANT INTERVIEWS WITH CANADIAN STAKEHOLDERS—INTERVIEW GUIDE

APPENDIX G: OPINION POLL RESULTS

APPENDIX H: OPINION POLL—SURVEY

APPENDIX I: LEGAL ISSUES

APPENDIX A: Proposal

By

P. Groff, PhD

In addition to age, there is also an association between use and the nature of the craft being operated. For example, over 95% of kayak operators do wear a PFD, while the use for those in canoes or small utility/skiffs drops to 62.5% and 42.4% respectively.[3] One US study of personal water craft (PWC) operators found that 97% wear lifejackets, and that this likely contributes to the lower drowning rates of the operators of this class of vehicle. It is noteworthy that again, those who do not use a PFD while operating their PWC are at a much higher risk of drowning: 77% of PWC-related drownings involve an operator not wearing a lifejacket.[8]

In general, with the exceptions of kayaks and PWCs, such as SeaDoos, lifejackets and PFDs are infrequently worn. Overall, their use in boats under 6m in length averages 32.8%.[3]

Despite the above-cited literature it has been suggested that several gaps remain in the database with regard to prevalence and determinants of PFD wear.[2]

Attitudes and Behaviour

There is little doubt that perception of risk and attitudes toward risk-taking play as important a role in this issue, as in other injury prevention issues. For example, despite the fact that there seems to be little evidence that swimming ability is a strong predictor of the outcome, in many of these recreational boating related drownings,[1] people seem to feel that lifejackets or PFDs are only for those who have not yet learned to swim. In a survey of young men in the demographic group most at-risk, the vast majority felt they did not need a PFD because they can swim well.[9]

There is also a perception that experienced boaters are not at risk. Focus groups studying boaters who operate small craft frequently (at least 6 times in the previous season) found that the majority feel lifejackets are not required if a boater is skilled, and that they are really only for children who are still learning.[10] This is in spite of findings that neither past boating experience nor formal training have been shown to uniformly enhance boating safety.[11]

Additionally, there is the sense with small craft operators, as is accepted practice on larger ships, that the important thing is that lifejackets or PFDs be present, not that they be worn. A survey of boaters in the target demographic found that 64% feel safe as long as their PFD is "in reach".[12]

The most common reasons given by the young men, most at risk for a boating-related drowning, for not wearing lifejackets or PFDs is that they are uncomfortable and unfashionable.[9]

Finally, there is evidence of modeling behaviour in lifejacket/PFD use, with a demonstrated correlation between one person wearing a PFD in a boat and others in the same boat wearing one.[12] This modeling effect is even more

It is noteworthy that the above American legislation does not address the target group most at risk for drowning while operating a recreational boat, namely young adult men. There have been a few studies conducted in this country to determine what the public response to framing such a law would be. Focus groups conducted in Canadian cities on the general issue of low lifejacket/PFD usage rates have suggested an acknowledgement among boaters that legislation is likely the only way to enforce use. It was suggested that this would be the most effective strategy as most boaters are inclined to obey the law.[10] A telephone survey in western Canada showed that 50% of the target group (young males) would support a law requiring lifejackets or PFDs.[14]

As noted above, there have been no thorough evaluations to date of legislative measures for lifejacket/PFD use. However, perhaps one can estimate the likely success from similar measures to legislate protective gear to prevent other classes of injury. An evaluation was conducted of legislation requiring bicycle helmet use enacted in Halifax in 1997. It found that the rate of helmet use climbed from 36% in 1995 and 38% in 1996 to 75% in 1997, 86% in 1998 and 84% in 1999. This impact was sustained, even though no helmet-promoting media education campaigns were mounted in the jurisdiction after 1997.[18]

The CSBC Lifejacket/PFD Taskforce

The Canadian Safe Boating Council has expressed a desire to develop a position paper that will provide the evidence base addressing the need for mandatory wear among small boat operators in Canada. They have constructed a Lifejacket/PFD Taskforce to examine this issue and to solicit the writing of this position paper.

Proposal

The current proposal is to address the needs of the Taskforce for a position paper summarizing the best available evidence pertaining to mandatory lifejacket/PFD use. In order to build the case for mandatory wearing of lifejackets/PFDs for boaters in vessels under 6m while the vessel is underway, several lines of evidence will have to be considered.

In general, this position paper will need to make the following arguments. First, that there is a problem that needs to be addressed. Second, that mandatory PFD use is likely to address this problem. Third, that it is possible to successfully advocate for such a regulatory solution. And finally, that there is evidence that such legislation will be acceptable to the general public. Accordingly, we are proposing four blocks of research to address each of these issues.

The above proposal is predicated upon a number of dependencies and assumptions. Among these are the availability of adequate data speaking to the various issues concerned. Another dependency will be the ability of the project team to develop effective partnerships with and solicit the assistance of key stakeholders in the area of water-safety. Finally, there would be the need to be free to consider other alternatives should the preponderance of the evidence turn out to argue against mandatory wear legislation.

Project Team

Dr. Philip Groff is the manager of research development and evaluation at SMARTRISK. He has a background in the psychology of human problem solving and has worked as a researcher within the Health Network of Canadian Policy Research Networks, and "Health and Everything". He will oversee the project.

Dr. Chris Brooks, internationally recognized authority on lifejacket/PFD use and cold water survival, will serve as a consultant on this project. Dr. Brooks has been a Navy captain, and head of the hospital at Canadian Forces Base Halifax. He is the author of *Lifejackets Through the Ages*.

Dr. Eden Cloutier, noted economist and co-author of SMARTRISK's *The Economic Burden of Unintentional Injury in Canada* as well as numerous provincial economic burden studies, will assist with the calculation of the economic burden of recreational boating related drowning.

Dr. John Lewko, Director for the Centre for Research in Human Development, Laurentian University, and chair of SMARTRISK's Research Advisory Committee, will assist with the collection and analysis of the behavioural information. An experienced evaluator, Dr. Lewko will also assist with the meta-evaluation issues identified in this project.

Mr. Terry Albert, Director of Policy and Planning at the Canadian Medical Association, and former senior researcher with the Health Network, Canadian Policy Research Networks, will assist with the analysis of the policy context for the proposed legislative intervention.

Ms. Hope Russell, a student of health policy and management with a specialty in health informatics, will be the research assistant for this project. She will be responsible for the day-to-day administrative and logistic support of the project as well as collecting the literature for the reviews, developing and maintaining databases and synthesizing results.

A medical student undertaking a research practicum with SMARTRISK during the tenure of the project will provide additional support. A law student will be

The travel, communications and meeting expenses were based upon at least one trip for Dr. Groff and one for Ms. Russell to visit Dr. Brooks to consult his data holdings, and library of lifejacket/PFD literature. In addition, conference calls will be held occasionally to keep the team connected, while a project listserv and Web site will serve for more frequent updates and document sharing. Any meeting expenses for the project advisory committee will also be included in this figure.

Data acquisition expenses refer to costs to retrieve necessary data from the Canadian Institutes of Health Information, and Health Canada Vital Statistics.

Supply costs include computer supplies, office supplies, photocopying expenses, postage, and any miscellaneous expenses incurred, not specifically covered by other budget items.

Market research expenses cover the direct expenses of polling through a national research institute such as Omnitel, and is based upon current rates for 3 closed and 1 open-ended question to be administered to a random sample of 1000 individuals, nationwide as part of another regular polling event.

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required, on the order of **$7500.00**. This has not been reflected in the above budget.

APPENDIX B: International Environmental Scan

By

P. Groff, PhD
J. Ghadiali, MA

Questionnaire

Two surveys were developed, one for the United States, and one for respondents in other countries around the world. The two surveys were very similar, although the wording was modified in the survey for the United States to be appropriate for collecting information about state rather than federal legislation since most individual states have their own PFD wear legislation. As well, an additional question was added to the U.S. survey to address the impact of the recent introduction of federal PFD legislation for children under the age of 13.

The surveys were designed to be approximately 15 minutes in length and include the following topics.

For all respondents:
- whether or not there is currently any legislation requiring recreational boaters to wear PFDs, or whether such legislation is being developed or considered
- relative importance of various factors that are or were barriers to creating PFD wear legislation
- suggestions for overcoming barriers to legislation
- relative importance of factors that would help or already helped to create PFD wear legislation
- description of other non-legislative initiatives that have successfully encouraged PFD use

For those with state/national PFD wear legislation:
- when legislation was enacted
- type of watercraft legislation pertains to
- age groups legislation pertains to
- type of flotation device required by legislation
- whether legislation was modified during review phase before being finalized, and if so, in was it made more stringent/less stringent
- rating of how supportive general public has been regarding PFD legislation
- rating of what impact legislation has had on usage of PFDs
- description of results of any evaluations conducted after introduction of legislation
- description of any enforcement issues encountered

A copy of the surveys sent to respondents in the United States and in other nations is included in Appendices C and D.

Participants

Sample Selection

Country/State	Number Who Completed Online Survey	Number Who Provided Information Via Email/ Telephone/Fax
United Kingdom	2	1
United States	30	1
Alabama	2	1
Alaska	2	1
Arizona	2	1
Arkansas	2	1
California	2	1
Colorado	2	1
Connecticut	2	1
Delaware	2	1
District of Columbia	2	1
Florida	2	1
Georgia	1	1
Hawaii	1	1
Idaho	1	1
Illinois	1	
Indiana	2	
Iowa	1	
Kansas	1	
Kentucky	1	
Louisiana	2	
Maine	1	
Maryland	2	
Massachusetts	1	1
Michigan	1	1
Minnesota	2	1
Mississippi	1	1
Missouri	1	
Montana	1	
Nebraska		
Nevada	1	
New Hampshire	1	
New Jersey	1	1
New Mexico	2	1
New York	1	1
North Carolina	1	
North Dakota	1	1
Ohio	1	
Oklahoma		
Oregon		
Pennsylvania	1	

Jurisdictions Without Either PFD Carriage or Wear Legislation

Other countries, such as the United Kingdom, Sweden, and Germany have very little regulation for leisure boating, and do not even require that flotation devices are carried on-board, let alone worn, by recreational boaters. In the United Kingdom, leisure boats under 13.7 m in length are not even required to carry flotation devices.[1] As a representative of the Royal Yachting Association (RYA), a national association for leisure boating in the UK, observed:

> There is a very strong perception of the importance of personal freedoms in the UK and very particularly in the leisure boating world. There is no perception in the UK at the moment that further legislation regarding PFDs is required. This is largely due to the fact that incidents and accidents regarding leisure boats are not at a level to indicate that further legislation for the compulsory carriage of PFDs is required.

Further, according to the representative of the RYA, "education, not legislation" is the approach favoured in the UK, and this was echoed by a representative of the Royal Life Saving Society (RLSS). The RYA respondent noted that this approach has successfully encouraged many leisure boaters to voluntarily wear a PFD, and stated that "it is common practice in the UK among all boaters, windsurfers etc. to wear PFDs for everything but calm weather cruising on large keeled boats during daylight hours."

In Germany, a high-ranking individual in the German Lifesaving Federation notes that "voluntary donning of lifejackets... is a widespread behaviour." This respondent suggested that due to insurance requirements, individuals are forced to wear flotation devices so that they do not lose coverage. Another respondent from Germany also suggested that the owner of the vessel is legally responsible for the safety of the crew or guests. Thus, according to this respondent, "in case of accident, he will be prosecuted if he has not acted according to common sense. This means for example not having used or made available type-approved lifejackets."

One Swedish respondent explained the lack of regulations requiring boaters to either carry or wear PFDs by saying "we strongly believe in voluntary actions." As well, this individual suggested that voluntary compliance is now too low to consider introducing legislation as there would be too much opposition. The view of this respondent was that voluntary compliance must be in the 50-60% range before legislation can successfully be introduced.

Jurisdictions with PFD Wear Legislation

The United States and Australia are the only countries in which some states have chosen to create legislation mandating PFD use amongst boaters. However, all of the state laws in the U.S. mandating that approved PFDs be worn pertain only to children of a specified age, not to adults. As well, in many states, the child is

noted that courses in water safety and educational messages are delivered via the school curriculum and he believes that this has resulted in high PFD wear rates amongst children. However, this respondent concludes that since adults were not exposed to similar educational efforts in their childhood, they are consequently more resistant to wearing flotation devices. Thus, the implication is that if adults were better educated about water safety and the importance of wearing PFDs, they may be less resistant to PFD wear legislation. Accordingly, this respondent suggested that the approach that may be chosen in his country given the current resistance to legislation is to focus on education of adult boaters rather than legislation.

Some jurisdictions indicated that the absence of champions for the legislation or conflict relating to the issue of what ages should be mandated to wear flotation devices were barriers, although most jurisdictions rated these factors as smaller barriers.

Only one of the representatives from jurisdictions with PFD wear legislation indicated that the fact that drowning prevention was not as high a priority as other political issues was a big barrier, although seven respondents suggested that this was a small barrier to the creation of legislation. One person in particular noted that the decline in boating fatalities in the past 20 years contributed to a lack of "a sense of urgency regarding boating safety."

Virtually all of the jurisdictions with existing legislation indicated that there was little or no conflict surrounding other aspects of the legislation such as the type of flotation device or what level of government should be responsible for introducing legislation, and very few had any concerns about enforcement of the law.

Figure 1: Relative Importance of Various Barriers for Jurisdictions Who Have Already Introduced PFD Wear Legislation

	Big Barrier %	Small Barrier %	No Barrier %
There is little enthusiasm for legislation from the government at the federal or provincial/state levels (N=6)	50	50	-
The public strongly believes in personal freedoms and would be resistant to this legislation (N=24)	46	38	17
There is little public pressure or enthusiasm for legislation (N=24)	46	33	21
There is no individual or group that is trying to bring attention to this issue (N=24)	21	29	50
There is conflict about who the legislation would apply to (e.g. children only vs. adults) (N=24)	21	25	54
Drowning prevention is not as high a priority as other issues (N=24)	4	29	67

Figure 2: Relative Importance of Various Barriers for Jurisdictions Who Have Not Already Introduced PFD Wear Legislation

	Big Barrier %	Small Barrier %	No Barrier %
There is little public pressure or enthusiasm for legislation (N=20)	70	25	5
The public strongly believes in personal freedoms and would be resistant to this legislation (N=20)	65	35	-
There is little enthusiasm for legislation from the government at the federal or provincial/state levels (N=10)	60	-	40
There is a concern that legislation could not effectively be enforced (N=20)	30	25	45
There is no individual or group that is trying to bring attention to this issue (N=20)	25	40	35
There is conflict about other aspects of the legislation (N=20)	20	10	70
Drowning prevention is not as high a priority as other issues (N=20)	10	25	65
There is conflict about whether the legislation would be national, state/provincial, or local (N=20)	10	5	85
There is conflict about who the legislation would apply to (e.g. children only vs. adults) (N=20)	10	5	85
There is conflict about the type of flotation device that would be mandatory (N=19)	-	16	84

Other Barriers to Creating PFD Legislation

Some respondents from jurisdictions without PFD wear legislation cited a number of reasons why they believe that legislation is not required. For instance, some pointed to the relatively small number of drowning cases and suggested that the statistics do not merit the creation of legislation that would make it compulsory for all boaters to wear flotation devices. In the U.K. for example, one respondent commented that "incidents and accidents are not at a level to indicate that further legislation for the compulsory carriage of PFDs is required."

One Dutch respondent mentioned that swimming lessons had formerly been part of the school curriculum, and as a result, the majority of Dutch people in a certain age bracket know how to swim. This respondent concludes that this widespread swimming ability makes it unnecessary to create legislation mandating PFDs be worn by recreational boaters (although this clearly does not address the issue of water temperature and the effect of cold water on swimming ability).

"as many stakeholders as possible," and seeking support from boating clubs and organizations and fishing lobby groups, and the respondent from Tasmania credited the thorough public consultation as being the key reason the legislation was passed without difficulty. Another respondent emphasized the importance of obtaining the support of marine dealers, as they have a powerful lobby group in the respondent's state, and they were initially resistant to the law due to concerns about personal freedoms of boaters being violated.

Governments' awareness of either legal or economic rationale for legislation apparently was less influential in creating the mandatory wear law.

Figure 3: Relative Importance Various Factors Played in Facilitating Creation of Legislation for Jurisdictions Who Have Already Introduced PFD Wear Legislation

	Big Factor %	Small Factor %	Not a Factor %
Key individuals or groups bringing attention to this issue (N=24)	71	21	8
An incident or series or incidents that bring attention to drowning prevention (N=24)	46	46	8
Enthusiasm for legislation from the government at the federal or state/provincial levels (N=24)	46	33	21
Pressure or enthusiasm from the public to create legislation (N=24)	42	29	29
If policy makers or the government were informed about the legal argument that requiring boaters to wear lifejackets or PFDs is the prudent and responsible thing to do (N=24)	13	58	29
If policy makers or the government were informed about the economic/financial costs of boating drownings (N=24)	8	46	46

As shown in the table below, jurisdictions that do not currently have laws requiring boaters to wear a PFD believe that the publicity from one or more drowning incidents could bring enough attention to the issue of drowning that it could pave the way for the introduction of legislation. Specifically, 95% speculated that drowning incidents in which PFDs were not used could play some role in facilitating the creation of PFD wear legislation. As one respondent said, "a 'media storm' about an incident or series of incidents can provoke both a political will and pressure from the public... some high profile incident might trigger the motivation to bring about legislation."

Pressure or enthusiasm from the general public and interest from the government in creating legislation were also perceived to be important in building momentum for legislation. Seventy-nine percent of all respondents from jurisdictions without PFD wear legislation consider support from the public

f) If policy makers or the government were informed about the legal argument that requiring boaters to wear lifejackets or PFDs is the prudent and responsible thing to do
____ Big Factor ____ Small Factor ____ Not a Factor

6. If you indicated that any of the potential factors listed in the previous question could or did help to create lifejacket/PFD legislation in your state, please provide details below. Please also describe any other factors that would help or already helped to create lifejacket/PFD legislation. *PLEASE DESCRIBE BELOW*

7. Are there any other methods other than legislation that have successfully encouraged lifejacket/PFD use in your state? If so, please provide details below. *PLEASE DESCRIBE BELOW*

IF YOUR STATE ALREADY HAS LEGISLATION:
PLEASE ANSWER REMAINING QUESTIONS

IF YOUR STATE DOES NOT CURRENTLY HAVE LEGISLATION:
PLEASE SKIP TO LAST PAGE AND COMPLETE QUESTIONS 19 - 22

For those of you who live in a state that has already created legislation making lifejacket/PFD use mandatory for boaters in small water craft, we would like to ask several more questions in order to understand the sort of legislation your state has adopted.

8. What month and year was this legislation created for your state?

Year: _____ Month (if known): _____

9. What sort of boat or water craft does this state legislation apply to (e.g. boats under a certain length)? *PLEASE DESCRIBE BELOW*

10. What age groups does this state legislation apply to (e.g. children versus adults)? *PLEASE DESCRIBE BELOW*

16. Please describe any evaluation results that may have been collected regarding this state legislation since it was created. *PLEASE DESCRIBE BELOW*

17. Please describe any problems or issues your state has experienced with enforcing this legislation. *PLEASE DESCRIBE BELOW*

18. Would it be possible for you to send us a copy of your state's legislation, or could you tell us how we can obtain a copy on the internet or from another source?

    ____ will send a copy of legislation

    ____ obtain legislation on internet SPECIFY: _____

    ____ obtain legislation from another source SPECIFY: _____

ALL RESPONDENTS:

19. In March 2002, a new federal legislation was created that would make it mandatory for children under the age of 13 to wear a personal flotation device while a recreational vessel is under way (when not below deck or in an enclosed cabin). What impact, if any, has this federal legislation had on your state, and what impact do you anticipate it will have in the future?

20. Please add any further comments you wish.

21. Please fill in your name and address information below:

    Name: _____

    Organization/Company: _____

    Address: _____

    _____

    City/Town: _____

    State/Province: _____

    ZIP/Postal Code: _____

    Country: _____

    Email address: _____

APPENDIX D: International Environmental Scan – Survey For International Respondents

By

P. Groff, PhD
J. Ghadiali, MA

Lifejacket/PFD Legislation Survey

1. Does your country/state/jurisdiction currently have legislation requiring boaters in small water craft to wear lifejackets/PFDs? If not, is legislation being considered or developed? *PLEASE WRITE OR TYPE AN 'X' BESIDE YOUR RESPONSE BELOW*

   ____ My country/state/jurisdiction has already created lifejacket/PFD legislation

   ____ No legislation is being considered currently

   ____ Legislation is being considered at this time

   ____ Legislation is being developed at this time

   ____ Other *PLEASE DESCRIBE:*

2. Whether or not your country/state/jurisdiction has created legislation requiring boaters in small water craft to wear a lifejacket or PFD, what are or were the barriers to creating this legislation? For each of the potential barriers to creating legislation listed below, please indicate whether it is or was a big barrier, small barrier, or not a barrier at all. *PLEASE WRITE OR TYPE AN 'X' BESIDE YOUR RESPONSE FOR EACH STATEMENT BELOW*

   a) Drowning prevention is not as high a priority as other issues
   ____ Big Barrier ____ Small Barrier ____ Not a Barrier

   b) There is little public pressure or enthusiasm for legislation
   ____ Big Barrier ____ Small Barrier ____ Not a Barrier

   c) There is little enthusiasm for legislation from the government at the federal or provincial/state levels
   ____ Big Barrier ____ Small Barrier ____ Not a Barrier

   d) The public strongly believes in personal freedoms and would be resistant to this legislation
   ____ Big Barrier ____ Small Barrier ____ Not a Barrier

   e) There is no individual or group that is trying to bring attention to this issue
   ____ Big Barrier ____ Small Barrier ____ Not a Barrier

   f) There is a concern that legislation could not effectively be enforced
   ____ Big Barrier ____ Small Barrier ____ Not a Barrier

   g) There is conflict about whether the legislation would be national, state, or local
   ____ Big Barrier ____ Small Barrier ____ Not a Barrier

f) If policy makers or the government were informed about the legal argument that requiring boaters to wear lifejackets or PFDs is the prudent and responsible thing to do
____ Big Factor ____ Small Factor ____ Not a Factor

6. If you indicated that any of the potential factors listed in the previous question could or did help to create lifejacket/PFD legislation in your country/state/jurisdiction, please provide details below. Please also describe any other factors that would help or already helped to create lifejacket/PFD legislation. *PLEASE DESCRIBE BELOW*

7. Are there any other methods other than legislation that have successfully encouraged lifejacket/PFD use in your country/state/jurisdiction? If so, please provide details below. *PLEASE DESCRIBE BELOW*

IF YOUR COUNTRY/STATE/JURISDICTION ALREADY HAS LEGISLATION:
PLEASE ANSWER REMAINING QUESTIONS

IF YOUR COUNTRY/STATE/JURISDICTION DOES NOT CURRENTLY HAVE LEGISLATION:
PLEASE SKIP TO LAST PAGE AND COMPLETE QUESTIONS 21 - 23

For those of you who live in a country/state/jurisdiction that has already created legislation making lifejacket/PFD use mandatory for boaters in small water craft, we would like to ask several more questions in order to understand the sort of legislation your country/state/jurisdiction has adopted.

8. Has your country created lifejacket/PFD legislation at the national, state/provincial, or local level? *PLEASE WRITE OR TYPE AN 'X' BESIDE ALL RESPONSES BELOW THAT APPLY*

____ National ____ State/Provincial ____ Local

9. Which jurisdiction(s) in your country have created lifejacket/PFD legislation? *PLEASE WRITE OR TYPE YOUR RESPONSES BELOW*

State(s)/Province(s): _____

Local Jurisdiction(s): _____

17. Overall, what impact has this legislation had on the usage of lifejackets/PFDs amongst boaters in small water craft? Has this legislation.... *PLEASE WRITE OR TYPE AN 'X' BESIDE YOUR RESPONSE FOR EACH STATEMENT BELOW*

    ____ increased lifejacket/PFD usage considerably

    ____ increased lifejacket/PFD usage slightly

    ____ had little or no impact on lifejacket/PFD usage

    ____ decreased lifejacket/PFD usage

18. Please describe any evaluation results that may have been collected regarding this legislation since it was created. *PLEASE DESCRIBE BELOW*

19. Please describe any problems or issues your country has experienced with enforcing this legislation. *PLEASE DESCRIBE BELOW*

20. Would it be possible for you to send us a copy of your country/state/jurisdiction's legislation, or could you tell us how we can obtain a copy on the internet or from another source?

    ____ will send a copy of legislation

    ____ obtain legislation on internet SPECIFY: _____

    ____ obtain legislation from another source SPECIFY: _____

ALL RESPONDENTS:

21. Please add any further comments you wish.

22. Please fill in your name and address information below:

    Name: _____

    Organization/Company: _____

    Address: _____

    _____

    City/Town: _____

APPENDIX E: Key Informant Interviews with Canadian Stakeholders

By

N. Lamptey, MPH
P. Groff, PhD
J. Ghadiali, MA

purposive. The aim is to describe the processes involved in a phenomenon, rather than its distribution. A sample will aim, for example, to identify cases that will provide a full and sophisticated understanding of all aspects of the phenomenon. The aim is to select information-rich cases for studying in depth[1 p.42]

Finally, every respondent was asked to suggest further potential informants for the study.

Sample Size

The validity or generalizability of qualitative research hinges more on the illustration of concepts rather than individuals or the roles they represent. In contrast to a quantitative survey, sample size determination was a component of the iterative process of analysis. The endpoint, is not a predetermined sample size, but the collection of data to saturation for each category. This study succeeded in consulting 12 individuals representing 10 organizations. One respondent refused to participate and scheduling difficulties prevented a secured interview with two other candidates who were approached.

Sample Composition

The project sought the perspective of professionals and community groups that have a stake in the design of PFD legislation. Thus, the target populations for this study are the very actors whose efforts will shape the nature of drowning prevention.

The organizational roles of interviewed individuals are listed below.

Stakeholder	Organization
Policy Makers	Regulations and Standards, Office of Boating Safety, (Canada Coast Guard)
Researchers	Red Cross Survival Systems
Advocates	National Life Saving Society Ontario Life Saving Society Individual boat entrepeneur
Recreational Organizations	Canadian Power and Sails Squadrons Ontario Federation of Anglers and Hunters
Law Enforcement	RCMP OPP

Findings

Policy Agenda: Is mandatory wear PFD legislation on the policy agenda?

Media coverage of drowning fatalities stimulates increased attention to drowning but between these events, drowning and drowning mitigation strategies have less potential to capture a position on the public agenda without activity directed at influencing opinion-makers. Survey research can indicate to what extent drowning concerns the public, but the agenda of other stakeholders may be impacted by factors other than high-profile drowning events. For example, law enforcement agencies triage their activities based on the potential and immediacy of harm posed by societal phenomena over which they have jurisdiction. Drowning is usually fatal and on that basis may be perceived as deserving of high priority; but the proximal activity of drowning prevention through enforcement of mandatory wear of PFDs would present most law enforcement agencies with activity of less emergence than for example threats to security posed by illegal transport of goods and people. Agenda setting within the executive branch of the federal government apparently has explicit rationale as articulated by the Government of Canada Regulatory Policy. According to the Regulatory Policy, regulations do not emerge from a vacuum or the unilateral will of the government. The first requirement of the policy is consultation with Canadians so that the development of regulation includes public participation. Thus placement of a legislative strategy on the government agenda would likely have to begin with an appearance of the issue in the consultative bodies of the government relevant to boating safety such as the Canadian Marine Advisory Council and the Recreational Boating Advisory Councils.

Although two respondents anticipated support of a legislative initiative by the Canadian Coast Guard, politicians (in particular parliamentarians and federal ministers), enact legislation rather than agencies in the executive branch. Three respondents noted that politicians are driven by voter support and are wary of legislative initiatives that may prove politically unpopular. One respondent mentioned the historical experience with vessel licensing, which included opposition from northern and tourism industry constituencies. The vessel licensing proceedings may influence politicians' support for a legislative initiative. The respondents who optimistically expect a favourable reaction to a legislative proposal by the Coast Guard, might be cautioned by their colleague who remarked that the Coast Guard would not determine its position without strong data indicating public support and the life-saving potential of legislation. This assessment is in fact intimated in the Government of Canada Regulatory Policy, which requires any regulation to demonstrate a net benefit and efficient use of government resources such that they are employed where they might do the most good. Moreover, although advocates of legislation might expect a particular stance by regulators, the personal views of members of the executive branch theoretically is irrelevant because regulation is supposed to be based on the positions of stakeholders. Politically, the machinations of the legislative process may be facilitated by bureaucratic approval, but it is not supposed to be the starting point of the legislative process.

Influential Stakeholders: Who has influence in the boating community?

In line with the recognition of the CSBC as an important forum for discussion, respondents cited the Canadian Safe Boating Council as an influential body in drowning prevention. Respondents noted that the members represented large groups of people in the boating community. Within its membership, respondents named vessel and safety equipment manufacturers, and the powerboating community as notable constituencies. Respondents cited other organizations of influence that may not have CSBC membership including angling and hunting organizations, cottage organizations and the Canadian General Standards Board.

In contrast to the dictates of the Government of Canada Regulatory policy, which names the Canadian public as the key influential party in policy creation, respondents mentioned several federal government agencies and their employees as influential parties that would need to support a regulatory initiative in order for it to proceed expeditiously. In particular, respondents spoke of Fisheries and Oceans Canada including the Canada Coast Guard and the Rescue, Safety and Environmental Response Unit; Transport Canada including Marine Safety; Health Canada; Heritage Canada; the Solicitor General's Office; and Human Resources and Development Canada. At the provincial level, a respondent mentioned ministries of health and transportation as bodies that may need to receive more information about drowning. Another respondent stated that the boating community has not previously accessed the injury prevention network, health promotion experts, and health care providers. Thus the public health community might not consider the boating aspects of water safety in its programming. The recipients of the Red Cross Drowning Report may not be on the boating community's radar as stakeholders in a regulatory approach, but their interest in the publication suggests they may have contributions to deliberations. These organizations include regional health units, Offices of the Coroner, the Canadian Institute of Child Health, the Canadian Youth Foundation, Fitness Canada, the YMCA, outdoor sports shows, and the Diving Association. Finally, national enforcement agencies, the media, and corporate interests such as the insurance and the alcoholic beverage industry round out interested parties noted by respondents.

community have more potential to retain public attention. In addition to the suitability of content, the orientation of a concerted prevention message to particular audiences can impact its efficacy. One respondent suggested that one way to help build the momentum necessary to persuade politicians would be to initially target groups who are least accepting of a policy option. If these resistant groups decide to support the option then their representation could help build the critical mass of stakeholders who could advance the political process. Another respondent suggested that the female population who persuades children and spouses about the worthiness of prevention initiatives, is another constituency to consider in strategic public relations.

Limited resources count as one explanation for deficiencies in communication with the public and policy makers. Consistent public education to encourage PFD wear would require multimillion-dollar media campaigns for which the prevention community does not have sufficient financing. Two respondents explained that an education campaign to accompany a regulatory initiative would require print, radio and television media to inform the public of the regulatory expectations and enforcement. Suggested strategies for managing some of the cost associated with such a campaign include co-operative advertising and inclusion of media representatives in the prevention initiative. Co-operative advertising would pool the creative input and financial contributions of stakeholders. Media involvement would help uncover how the media could be engaged to support the initiative. Rather than merely responding to media calls after a drowning fatality, proactive consultation with media could help sustain drowning prevention messages and identify what elements of the drowning problem are likely to garner media coverage. A respondent offered that the national associations of broadcasters in radio, print and television could be engaged to use their networks in these opportune ways.

Dialogue with the law enforcement community may warrant special attention because of particular federal institutional changes. Restructuring of the marine and migratory bird enforcement unit of the RCMP in 1988 has left the federal agency without a full-time national marine coordinator. The ten provincial RCMP marine coordinators do not necessarily have formal chances to communicate with one another in national meetings. The jurisdictions of the provincial sections differ in how many bodies of water they encompass and the effective duration of the boating season. Therefore, marine activities naturally differ in emphasis between sections. Without a national marine section, consultation with the RCMP may have to incorporate correspondence through conventional or electronic mail with marine section coordinators to concurrently acquire input that is national in scope. In contrast, the Ontario Provincial Police force has a full-time marine coordinator. Thus solicitation of input from that organization may be more straightforward because the marine portfolio has an associated centralized position.

In addition to the law enforcement community, another group that may prove difficult to reach is the diffuse and diverse boaters who do not belong to a formal boating organization. Respondents identified northern Canadians, hunters and fishers, and small powerboat owners, particularly cottagers, as groups who may

II) Demonstration of need for federal intervention and regulation

Legitimation of a health concern: Do fatal recreational boating drownings represent a health risk?

The second requirement of the national regulatory policy involves justification of federal regulatory intervention. This includes demonstration of the existence of a risk or problem and elucidation of regulation as the best policy option. This study's respondents can not conclusively define the risks of boat-related drownings but can sketch how various stakeholders perceive the risk of boat-related drowning. As one respondent emphasized, "every human activity has some degree of risk." Therefore, the presence of a risk may not be as salient as its interpretation. Interpretations by different stakeholders of the magnitude of boat-related drownings will affect what responses they generate to address this risk. One respondent strongly opposed characterizing the risk of boat related drowning as a phenomenon that rendered recreational boating unsafe. Another respondent explained that vessel manufacturers may express resistance to messages promoting PFD or lifejacket wear because such promotions may imply that boating is an unsafe activity. In contrast, both respondents described recreational boating as a safe activity.

One of the components of risk interpretation is comparative assessment of activities. One respondent was not aware of the statistics of backyard pool and bathtub drownings and believed that the latter category represented a larger problem than recreational boat drownings. This misinterpretation suggests two possibilities. First, stakeholder knowledge of the fact that boat related drownings constitute the largest category of drownings in Canada will influence their perception of the magnitude of boat related drownings. This statement seems obvious. However, researchers whose work is entrenched in the epidemiology of drownings may not realize that stakeholders have different levels of exposure to drowning data. The detailed drowning statistics are theoretically widely available from the Red Cross Drowning Reports and accessible from the Red Cross website to anyone with an internet connection. Nevertheless drowning advocates can not expect everyone with an interest in boating to be similarly versed in the drowning epidemiology, because recreational pursuits that involve boating place different weights on the boating itself during the leisure activity. Second, the respondent has highlighted an opportunity for drowning prevention advocates to condense the vast drowning research into pertinent pearls to inform stakeholders as debate on legislation unfolds.

Respondents offered a wide array of opinions on the research that would frame discussions on mandatory wear legislation. Two respondents emphasized that a position paper on mandatory wear legislation would have to rest on facts gleaned from academically based research and connect the themes from prior studies. Four respondents felt that sufficient statistics currently exist to make a case in favour of legislation. One of these individuals believed that the strength of the Canadian drowning research actually distinguishes Canada from other countries contemplating drowning prevention options. Despite the strong

Is federal intervention justified: are there cultural imperatives concerning legislation?

The Canadian geographical and cultural context paints the backdrop of any discussion about whether federal intervention is justified. Cultural imperatives are one of the factors that affect the appropriateness and efficacy of policy options. First, one respondent noted the unique northern location of the country, which creates conditions of cold water and poor weather are situations that Canadian boaters could potentially face out of proportion to other nations. Despite climactic limitations, respondents stated that boating is a popular leisure activity that serves more than a transportation function. One respondent passionately characterized recreational boating activities as an integral component of the quality of life for some Canadians. The respondent explained that recreational boaters who want to pass on their pastimes to their children inherently desire the activity to be as safe as practically possible. In addition to inspiring devotion, boating in Canada perhaps contributes to less evident subtext in Canadian culture. One respondent believed that boating is so widely and frequently engaged by Canadians that it is not necessarily consciously thought about by participants. For example, fishing and hunting, were mentioned by two respondents as activities in which boating is secondary to the main pursuit. Although boating is involved in these pursuits, participants may not designate these recreational activities as boating. Thus in activities where boating is not specified as the prominent recreational component, injury prevention may not be focused on the boating component but other aspects of the activity. In contrast, some boaters identify themselves primarily as boaters and may have sought supplementary training in boating technique and safety.

Various notions of boating identity are not merely academic curiosities because they may affect how different groups of boaters respond to messaging on safety device wear. For example, one respondent commented that the stylishness and color coordination between recent generations of PFDs and personal watercraft (PWC) and kayaks, has contributed to high wear rates in those boating groups. The improved function and fashion appeal tailored to the specific needs of these vessels feed into the boating identity of kayakers and PWC operators. The same respondent also acknowledged that practical considerations of limited storage on these vessels may have initiated the high wear rates. Another respondent explained that immersion is expected in personal watercraft use. The pragmatic wear of PFDs in these conditions may have been reinforced by the "cool factor" associated with stylishly designed gear. In contrast, one respondent stated that young adult males who represent a high risk group for recreational boat drownings do not seem to find PFD or lifejacket wear appealing. The respondent was not sure whether the discomfort with PFD wear in this population was a cultural or psychological position of individual boaters. Another respondent ascribed this to participants' sense of ownership of boating activities and the right to decide whether to wear a PFD. The respondent believes that this attitude is prevalent among young people who may be carefree

The Canadian Political Context

In addition to the cultural attitudes and practices of the Canadian public the political landscape also affects the suitability of a regulatory approach to drowning prevention. A respondent described Canadian policy making as consultative, which mirrors the sentiments outlined in the federal regulatory requirements. However, the respondent remarked that this approach that is inclusive of different viewpoints results in a slow policy creation process. Two respondents claimed that recent reactions to the federal gun registry will render policy makers reluctant to initiate a policy process for PFD legislation. Other developments more specific to the boating context were cited as politically salient. Two respondents believed that the limited budgets of the Coast Guard and Office of Boating Safety are current political problems. In addition, another respondent raised the uncertainty around Coast Guard management of vessel licensing as a pertinent issue. The respondent predicted public discomfort with the fees associated with licensing. The respondent continued that the impact on the popularity of the agency would make them reluctant to engage in other potentially unpopular measures. Finally, a peer described the effects of previous boating regulations on boating fatalities. Although the pleasure operator card experience is too nascent to evaluate, the respondent believes that safe powering limits, mandatory flotation of boats under 6m, and the development of wearable lifejackets and PFDs have contributed to declines in boating fatalities. Although proximal political events may seize attention and breed wariness of legislation, this respondents' observation suggests that the historical outcomes of boating regulations have positively improved the safety of recreational boat users.

While some respondents believed the particulars of the political context were barriers to regulation, two respondents believed that the current environment actually represents a window of opportunity. One respondent cited the reform of the Canada Shipping Act, which will presumably increase attention and energy directed at boating regulation in general. Another respondent believed that efforts of the Canadian and American Safe Boating Councils have influenced thinking on regulation, and that communication with PFD manufacturers and users have built momentum. Finally the national PFD legislation enacted in United States contributes to the putative impetus for regulation.
Whether or not momentum exists towards regulation, one respondent expressed frustration with the current situation given a decade's worth of drowning statistics. Nevertheless, other respondents cautioned that there would be negative repercussions if the production of legislation was rushed. They explained that the policy process might not engage all interested groups if legislation was adopted too quickly. Another respondent added that a rushed legislative decision would likely be rejected. They explained that without investments in consensus-building, legislative proponents would have difficulty documenting voter support to wary politicians. A colleague believed that legislation would stall if complimentary initiatives such as boater education were not simultaneously implemented. Finally a respondent predicted that a successful policy creation process would require an explicit time- table with sufficient time allotted to each stage and meeting to prevent unravelling of efforts.

targeting of campaigns could be matured and the continuity of campaigns could be improved throughout the year. One respondent also expressed concern with the content of safety messaging and cautioned that campaigns should not stereotype boaters as lawbreakers.

Three respondents argued that providing evidence to the public about the safety benefits and rationale for mandatory PFD wear would increase public acceptance of the idea. Respondents named statistical evidence and anecdotal demonstration of benefit as persuasive and referred to the historical experience with seatbelt legislation as a model. Respondents also pointed out that ticketing contributed to the development of seatbelt- wear habits. However salient differences with the seatbelt situation include the relative intrusion of a seatbelt on the act of driving compared to the restrictions imposed on boating activities by a PFD. Comparisons with the seatbelt experience should not overlook the time it took to increase compliance to current rates. Finally, one respondent posited that the marginal step to mandatory wear is smaller with PFDs than it was for seatbelts because the mandatory carriage requirements have already introduced users and manufacturers to the gear's presence in vessels.

The disclosures of opportunities for improvements in alternative measures are important because of their potential synergies with a regulatory option. Three respondents stated that legislation cannot stand alone but has to be integrated with other interventions to influence boating behaviour. One respondent interpreted the federal regulatory policy guidelines to mean that regulation should be a last resort in social interventions. Another respondent stated emphatically that society cannot legislate common sense.

Is regulation a preferred option under particular conditions?

Three respondents envisioned mandatory wear legislation that would require PFD use in all conditions for all ages. A colleague expressed concern that a strict policy without exceptions would yield poor compliance. Similarly, two respondents felt that any conditions specified by mandatory wear legislation should be logical to prevent mockery of the overall regulatory intent. In contrast, two respondents felt that specifying particular conditions for PFD wear would make enforcement more difficult. Respondents identified depth of water, distance from shore, weather conditions, swimming ability, body height and drowning risk as elements that could be considered in the specification of conditions requiring PFD wear. Two respondents stated that individuals on docked boats should be exempted from mandatory wear and that the regulation should apply to vessels underway at a rate greater than a troll speed. Four respondents felt that regulation should apply to small open vessels and singled out powerboats and canoes particularly in cold water in the spring and fall. However a peer questioned whether bad weather prepares boaters any more for the conditions encountered on unexpected immersion.

Four respondents commented that legislation directed solely at children would be inappropriate because children constitute a small proportion of fatal boat

Canadian cultural approach to social distribution has favoured centralized allocation rather than dedicated funding streams. These perspectives on the economic considerations of legislation consistently point to the federal government, but the costs associated with drowning including rehabilitation from non-fatal injury, and search and rescue on land and water are largely borne by that very entity.

IV) Enforcement

The federal regulatory policy requires the articulation of enforcement policies and the assurance of adequate resources for enforcement in proposed regulatory regimes. Thus the document sketches a position that laws must be enforceable to be legitimate. However one respondent observed that Canadian bodies of water exceed the capacity of enforcement agencies to effectively enforce all boating laws. Evidently, this situation does not negate the utility of regulations in the boating environment since Canada has not left this sphere unregulated.

Two respondents observed that marine law enforcement is largely centred in Ontario and in particular Southern Ontario and the Great Lakes. Six respondents identified the RCMP, five identified the provincial forces (OPP and Sûreté de Québec) and four identified municipal police departments as the main enforcers of boating regulations. Two respondents explained that persons designated by the minister can also apply small vessel regulations. This suggests an opportunity to address funding concerns raised by respondents. Respondents explained that limited resources of police departments have contributed to a deficit in personnel to apply existing boating laws. Federal funds to address the social costs of drowning could support not only existing enforcement agencies but additional ministerially designated entities. Two respondents stated that the Coast Guard does not play an enforcement role and one of these observers believed that the Coast Guard should be granted some responsibility in that domain.

References:

1. Rice, P. L. & Ezzy, D. Qualitative Research Methods: A Health Focus (Oxford University Press, South Melbourne, 1999).
2. Labonte, R. & Little, S. (Registered Nurses Association of British Columbia, Vancouver, 1992).
3. Privy Council. (Government of Canada).

APPENDIX F: Key Informant Interviews with Canadian Stakeholders – Interview Guide

By

N. Lamptey, MPH
P. Groff, PhD

Role Specific Questions

Who would be responsible for PFD legislation enforcement?

What would be the most appropriate form of legislation?

What are the consequences of moving too quickly for legislation?

Who are the key actors with influence?

Does Canada's federalist character affect the prospects for legislation?

Will legislation have to cross jurisdictions?

Is there momentum for regulation of PFDs?

Is there a window of opportunity for creating legislation?

Is drowning prevention on the agenda of policymakers? Why/Why not?

Is legislation the appropriate tool for drowning prevention?

Has the problem of boat related drowning been well described?

Is there an aspect of the case for legislation that has not been made?

Do information channels exist to communicate a concerted message for legislation to policy makers? To the public? To recreational boaters?

Do stakeholders have a forum to communicate with each other?

What does it cost to rescue individuals in small vessels at risk of drowning?

Should there be cost-sharing for the use of PFDs? Who should participate in the division of costs?

APPENDIX G: Opinion Poll Results

By

P. Groff, PhD
J. Ghadiali, MA

In addition, this firm uses a number of quality control measures to ensure high quality results, including survey pre-testing, project briefings, practice interviews, and monitoring by study supervisors and the call-centre manager.

Questionnaire

The survey was designed to be approximately 15 minutes in length and includes topics such as:

- current boating participation and PFD usage
- awareness of new PFD designs
- level of support or opposition to PFD legislation for various ages and types of watercraft
- probable compliance with PFD legislation (if it were enacted) for various types of watercraft
- demographics

A copy of the opinion poll questionnaire is appended to this report.

Participants

Sample Selection

In order to attain a representative sample of Canadians aged 18 and over (including all provinces and territories), households were randomly selected using Random Digit Dialing (RDD) sampling.

A disproportionate sample was used to decrease the margin of error in Canada's smallest provinces and territories, although the regions were weighted back to their true proportion of the Canadian population for analysis. Thus, quotas were developed to over-represent the population of some provinces/territories (Nunavut, Northwest Territories, Yukon, Prince Edward Island, New Brunswick, Newfoundland and Labrador, Nova Scotia, Manitoba, and Saskatchewan).

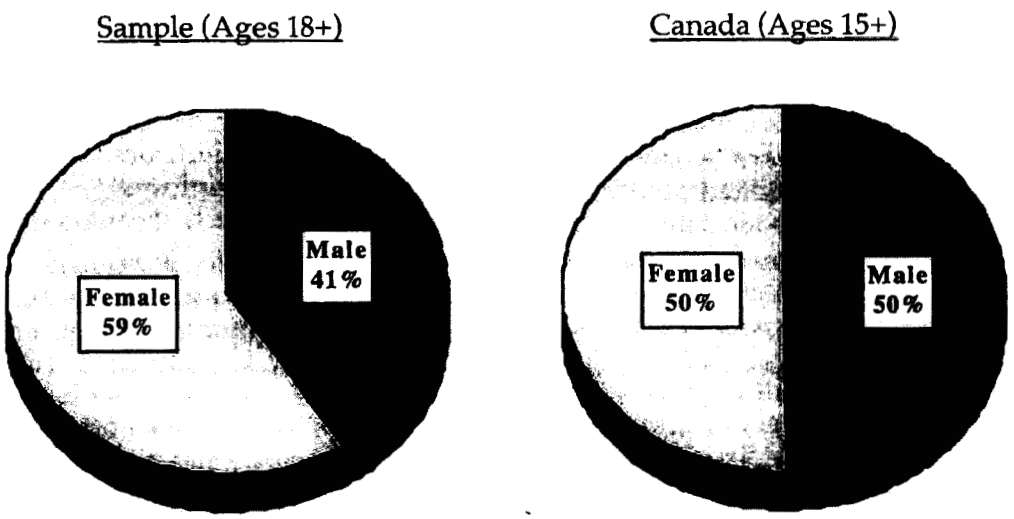
Sample Size and Composition

In total, the telephone survey was administered to a total of 1,009 Canadians aged 18 and over between February 28^{h} and March 10, 2003.

The margin of error for this sample size is ±3.1 percentage points, at a 95 percent level of confidence. (The margin of error is higher for regional and demographic sub-samples.)

The composition of the sample (age, sex, urban/rural residence) is compared to the composition of Canada's population as a whole in the graphs that follow (based on statistics from Statistics Canada's website www.statcan.ca).

Figure 6 - Gender Composition of Sample Vs. Canadian Population Aged 15 and Over

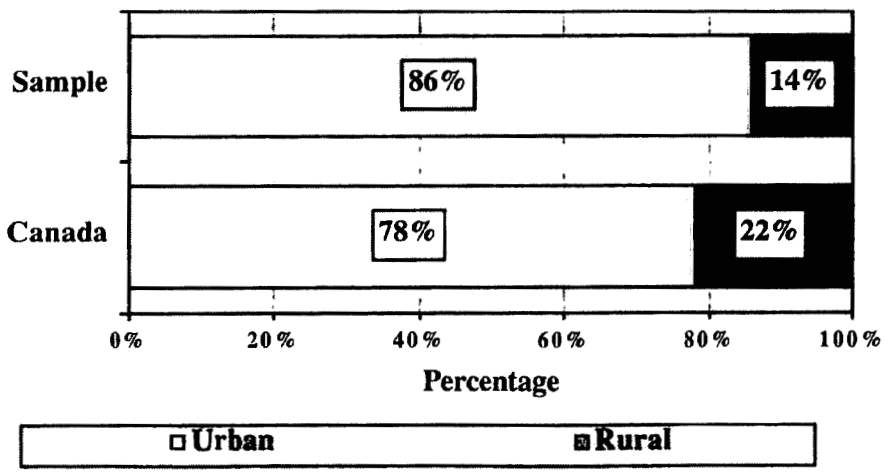


As the graphs above illustrate, the research sample slightly over-represents the female population, which is common in marketing research studies without gender quotas. However, this over-representation of female opinions should be kept in mind in interpreting results since both this research study and past research suggests that females are typically slightly more supportive of the notion of PFD legislation versus males.

The shown below, the research sample is slightly more urban than the Canadian population as a whole. This should be taken into account when the results are analyzed since urban and rural residents frequently hold differing views, and this may be the case with the topic of PFD legislation.

....1.1

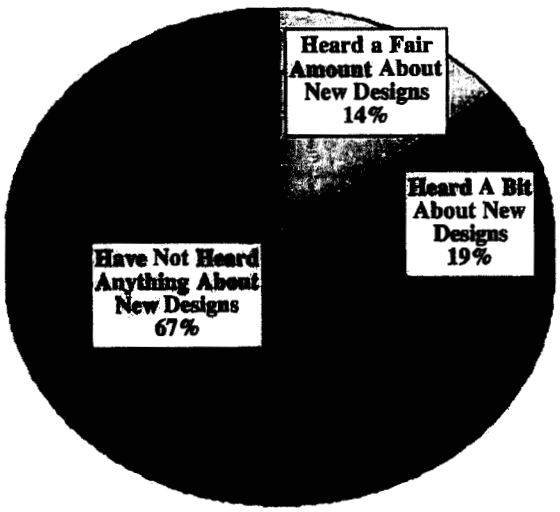
Figure 7 - Urban/Rural Distribution of Sample Vs. Canadian Population



Awareness of New PFD Designs

Respondents were asked about their familiarity with new PFD designs that were approved in Canada in 1997. Respondents were told that some of these new designs inflate on immersion in water, some are more light-weight, more comfortable, and available in a wider variety of colours than earlier designs.

Figure 14 - Awareness of New PFD Designs



As shown in the graph above, 67% respondents were unfamiliar with the new PFD designs, and another 19% claim to have heard a bit about the new designs. The remaining 14% claim that they had heard a fair amount about the new PFD designs.

The level of awareness of the new designs of each age, sex, and regional subgroup in the sample is shown in the chart below. Those who claim to be fairly informed about the new designs in PFDs tend to be younger (aged 18-24) males from the North, Atlantic Provinces or Quebec (see chart below). Those who claimed to have limited knowledge about the new PFD designs were more likely to be aged 25-44, female, from B.C., the North or the Atlantic provinces. Those with no prior knowledge about the new designs tend to be older (65+), about equally likely to be male or female, and from the Prairies or Ontario.

Figure 15 - Level of Support For Some Sort of Legislation Requiring Boaters to Wear a PFD At All Times When On The Water in a Small Watercraft (Under 6m)

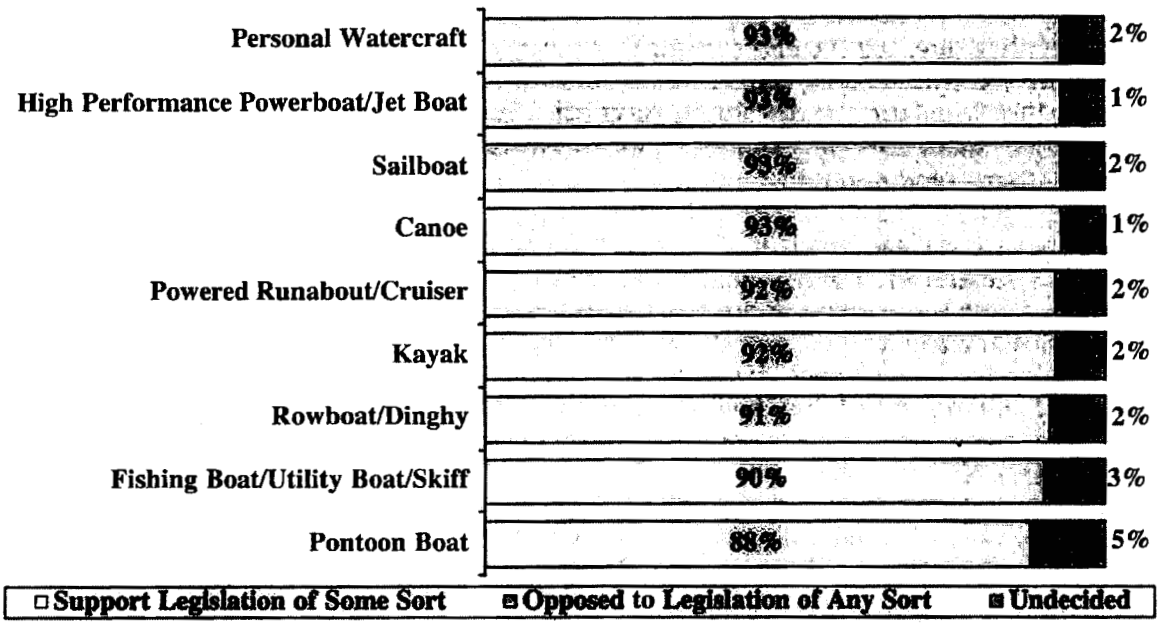


Table 8 - Level of Support For Legislation Requiring Specific Target Groups of Boaters to Wear a PFD At All Times When On The Water in a Small Watercraft (Under 6m)

	% Support Legislation For...				% Opposed to Legislation (for Any Group)	% Undecided
	All On-Board (All Ages)	Just Aged 17 & Under	Just Aged 12 & Under	One Person On-Board		
Personal Watercraft	87	3	2	1	5	2
Kayak	84	4	3	1	6	2
Canoe	82	5	5	1	6	1
High Performance Powerboat/Jet Boat	81	7	4	1	6	1
Sailboat	80	6	5	1	5	2
Rowboat/Dinghy	77	6	7	1	7	2
Powered Runabout/ Cruiser	76	6	9	1	6	2
Fishing Boat/Utility Boat/Skiff	74	8	7	1	7	3
Pontoon Boat	70	8	8	2	7	5

However, many of those who currently do not wear a PFD would support a law requiring all ages of passengers and operators to wear one at all times while underway and some would instead support legislation for either children or minors even if they themselves do not want to be "forced" by legislation to wear a PFD. For instance, amongst those who claim to never wear a PFD currently while on-board a high performance boat 41% claim to be in favour of legislation that would require all persons on-board small watercraft to wear a PFD. And amongst respondents who currently use runabouts/cruisers but never wear a PFD, 71% would support legislation requiring children or minors to wear a PFD while on the water in small watercraft.

There is no clear pattern of support for legislation by age groups, although support generally seems to increase by age of respondent for many types of watercraft.

There is a very clear pattern in response to legislation by gender, however. For every type of watercraft identified, female respondents were 8% to 17% more likely to be in favour of PFD legislation for all ages of boaters and watersports enthusiasts. While the majority of males support the idea of mandatory PFD wear for all ages and each type of watercraft, they are more likely than females to either oppose legislation altogether or to believe that legislation should be restricted to either children or minors, but not adults. For instance, 11% of males oppose PFD legislation for both fishing boats/utility boats/skiffs and pontoon boats, while 20% of males support PFD legislation for either minors or children while on-board fishing boats/utility boats/skiffs.

Support for legislation also varied fairly consistently by region as well, although the majority of respondents from each province agreed with PFD legislation for all ages of watercraft participants. Typically, respondents in Quebec and the Atlantic Provinces are most supportive of legislation for all ages, while those in Ontario and BC were slightly more likely to oppose any sort of compulsory PFD requirements.

Table 10 - Support for PFD Legislation for POWERED RUNABOUTS/CRUISERS According to Watercraft Usage, Current PFD Usage, Age, Gender, Region

	% Support Legislation For...				% Opposed to Legislation (for Any Group)	% Undecided
	All On-Board (All Ages)	Just Aged 12 & Under	Just Aged 12 & Under	One Person On-Board		
Watercraft Usage						
Recreational watercraft user	66	9	13	< 1	10	2
Non-user of any watercraft	82	5	6	1	4	2
User of powered runabouts/ cruisers	64	9	18	< 1	8	< 1
PFD Usage While On Powered Runabouts/ Cruisers						
Always	80	6	9	-	4	1
Occasionally	60	11	17	2	9	-
Never	10	16	55	-	19	-
Age						
18-24	71	16	5	3	4	1
25-44	76	6	10	2	5	1
45-64	76	5	8	< 1	8	4
65+	76	5	7	-	7	4
Gender						
Male	68	7	10	2	10	3
Female	81	6	7	1	4	2
Region						
B.C.	66	5	16	1	8	4
Prairies	75	9	5	2	6	3
Ontario	69	9	9	2	8	3
Quebec	87	2	8	-	3	-
Atlantic	85	5	4	1	4	1
North***	76	7	6	1	7	3

*** Unweighted data are used for North since the weighted sample (N=3) is too small for meaningful analysis.

Table 12 - Support for PFD Legislation for PONTOON BOATS According to Watercraft Usage, Current PFD Usage, Age, Gender, Region

	% Support Legislation For...				% Opposed to Legislation (for Any Group)	% Undecided
	All On-Board (All Ages)	Just Aged 17 & Under	Just Aged 12 & Under	One Person On-Board		
Watercraft Usage						
Recreational watercraft user	59	9	13	-	13	6
Non-user of any watercraft	78	7	4	2	4	5
User of pontoon boats	58	15	8	3	15	2
PFD Usage While On Pontoon Boats				-		
Always	57	11	25	-	-	7
Occasionally	**	**	**	**	**	**
Never	26	16	42	-	16	-
Age						
18-24	73	12	7	-	3	5
25-44	68	9	9	3	7	4
45-64	71	6	8	<1	8	6
65+	76	6	6	-	7	4
						-
Gender						
Male	61	12	9	2	11	5
Female	76	6	7	1	5	5
Region						
B.C.	63	5	10	1	10	12
Prairies	73	10	2	3	6	5
Ontario	66	12	8	2	8	4
Quebec	73	4	12	1	6	3
Atlantic	85	5	2	1	4	2
North***	72	5	9	1	6	7

** Percentage not calculated due to extremely small base.

*** Unweighted data are used for North since the weighted sample (N=3) is too small for meaningful analysis.

Table 14 - Support for PFD Legislation for CANOES According to Watercraft Usage, Current PFD Usage, Age, Gender, Region

	% Support Legislation For...				% Opposed to Legislation (for Any Group)	% Undecided
	All On-Board (All Ages)	Just Aged 17 & Under	Just Aged 12 & Under	One Person On-Board		
Watercraft Usage						
Recreational watercraft user	72	7	9	1	10	1
Non-user of any watercraft	88	4	3	1	3	1
User of canoes	62	7	15	1	13	<1
PFD Usage While On Canoes					3	
Always	84	3	6	1	6	1
Occasionally	36	21	26	-	17	-
Never	12	-	40	8	40	
Age						
18-24	85	5	7	-	2	-
25-44	80	6	6	2	5	1
45-64	82	4	5	1	7	2
65+	84	4	3	-	7	1
Gender						
Male	76	7	7	1	8	2
Female	86	4	4	1	4	1
Region						-
B.C.	71	5	11	-	10	3
Prairies	84	6	2	1	5	1
Ontario	77	8	7	2	7	1
Quebec	91	2	4	-	3	-
Atlantic	89	4	1	1	4	1
North***	79	4	5	3	7	3

*** Unweighted data are used for North since the weighted sample (N=3) is too small for meaningful analysis.

Table 16 - Support for PFD Legislation for ROWBOATS/DINGHIES According to Watercraft Usage, Current PFD Usage, Age, Gender, Region

	% Support Legislation For...				% Opposed to Legis-lation (for Any Group)	% Un-decide d
	All On-Board (All Ages)	Just Aged 17 & Under	Just Aged 12 & Under	One Person On-Board		
Watercraft Usage						
Recreational watercraft user	65	8	11	1	12	2
Non-user of any watercraft	85	4	4	1	4	3
User of rowboats/dinghies	61	12	18	<1	6	3
PFD Usage While On Rowboats/Dinghies						
Always	79	5	7	-	5	5
Occasionally	39	18	30	3	9	-
Never	35	18	35		12	-
Age						
18-24	77	7	11	1	4	-
25-44	77	7	7	1	6	3
45-64	77	5	6	1	8	3
65+	80	6	4	-	7	2
Gender						-
Male	68	9	8	1	10	3
Female	83	4	6	1	4	2
Region						
B.C.	66	5	13	-	11	5
Prairies	78	8	2	2	7	2
Ontario	72	8	8	1	8	3
Quebec	86	3	6		3	1
Atlantic	85	5	2	1	5	1
North***	76	6	5	2	7	3

*** Unweighted data are used for North since the weighted sample (N=3) is too small for meaningful analysis.

Key Reasons For Opposing PFD Legislation

Out of 1000 respondents, there were only 40 who were opposed to legislation for every type of watercraft listed in the survey, and these respondents generated a total of 138 comments as to why they are against this sort of legislation.

The key reasons for opposition are summarized in the table below. Most comments relate to an opposition to legislation in general or skepticism that legislation will be effective. Some comments also indicate that there may be certain circumstances or conditions under which legislation may be effective, but these respondents do not seem to feel that these circumstances are relevant to them. There are also several comments that relate to the perception that PFDs are awkward, uncomfortable and interfere with activities.

Table 18 - Key Reasons for Opposing PFD Legislation

	Number of times Comment Made
Opposed to Legislation in General/Doubt Efficacy of Legislation	68
Should be a personal choice/responsibility	44
Legislation will not make a difference/do not like government	16
Government regulates too many things already	6
No guarantee it will prevent deaths	2
Legislation Unnecessary for Certain Types of Watercraft	25
Some types of watercraft are safer	24
Have more control over some types of watercraft	1
Legislation Unnecessary for Certain Circumstances	17
If weather is calm, don't need to wear one	6
Not necessary if boat is stopped/moving slowly	6
Do not always need to wear one	2
Do not boat in deep water/rough water/dangerous water	3
	1
PFDs/Lifejackets Uncomfortable/Cumbersome	11
Lifejackets/PFDs interfere with ability to move around/work	8
Uncomfortable	3
Not everyone likes to wear one	3
Should be mandatory only for children	4
No reason/other single mentions	3
Don't know/no answer	5

are some variations in response according to membership in the various subgroups.

Respondents who do not currently participate in any activity involving watercraft are generally more likely than watercraft users to claim that they would comply with PFD legislation if they were to be a passenger or operator of a watercraft in the future. For instance, 94% of those who do not currently use any type of watercraft claim they would comply with PFD legislation if they were kayaking, compared to 79% of those who currently kayak. This pattern was evident for every type of watercraft except PWCs and high performance boats. For these two watercraft, nearly all users and non-users indicated that they were willing to wear a PFD. This is consistent with the pattern of response observed for support for PFD legislation, with non-users being more supportive than watercraft users. Since non-users of watercraft likely to do not feel that this legislation would be relevant to them, it is easy for them to say that they would comply with the law if they were to participate in boating or watersports involving watercraft in the future.

Although some current users of a particular type of watercraft tended to be slightly less likely to state that they would always wear a PFD on-board the watercraft if it were required by law, many claimed they would comply with the law under certain circumstances (ranging from 4% - 29%, depending on the type of watercraft).
As one would expect, respondents who claim they now wear a PFD all the time while on-board a particular type of watercraft are more likely to comply with legislation that would make wearing a PFD compulsory in the future. Similarly, those who claim they never wear a PFD currently while on-board a particular type of watercraft are also less likely to wear a PFD in future boating excursions, even if it is required by law. On the other hand, many (up to 50%) of those who do not currently wear a PFD claim they would wear a PFD if it was required by law. As well, a segment of those who now do not wear a PFD claim they would wear a PFD under certain circumstances if a law was enacted that made it mandatory. Thus, enacting legislation may be enough to persuade some of those who now resist wearing a PFD to begin wearing one.

While hypothetical compliance with PFD legislation does not increase by age in every case, for most watercraft, the greatest willingness to comply with the law is in the oldest age group surveyed (65+), while the youngest respondents (18-24) tend to be least willing to abide by the legislation.

As was the case with support for legislation, female respondents were 5%-10% more likely than their male counterparts wear a PFD while on-board all types of watercraft if this legislation were enacted. Although most males indicated that they would comply with PFD legislation, they were more likely than females to say they would wear a PFD under certain conditions at their discretion (as many as 14%), and they are more likely to resist wearing a PFD in spite of legislation requiring them to do so (up to 7%).

Table 20 - Hypothetical Compliance with PFD Legislation for POWERED RUNABOUTS/CRUISERS According to Watercraft Usage, Current PFD Usage, Age, Gender, Region

	Would Wear a PFD...		Would Not Wear a PFD Despite Legislation	Don't Know/ No Answer
	Under All Circum-stances	Under Certain Circum-stances		
Watercraft Usage				
Recreational watercraft user	84	10	5	1
Non-user of any watercraft	84	8	5	1
User of powered runabouts/ cruisers	78	10	5	-
PFD Usage While On Powered Runabouts/ Cruisers				
Always	92	8	-	
Occasionally	74	24	2	
Never	29	26	45	
Age			-	
18-24	75	21	4	-
25-44	86	9	4	<1
45-64	88	7	4	1
65+	92	4	3	1
			-	
Gender			-	
Male	83	11	6	1
Female	89	8	3	<1
			-	
Region				
B.C.	82	10	7	1
Prairies	89	7	4	1
Ontario	84	10	5	1
Quebec	88	10	2	
Atlantic	94	4	1	1
North***	85	12	3	1

*** Unweighted data are used for North since the weighted sample (N=3) is too small for meaningful analysis.

Table 22 - Hypothetical Compliance with PFD Legislation for PONTOON BOATS According to Watercraft Usage, Current PFD Usage, Age, Gender, Region

	Would Wear a PFD...		Would Not Wear a PFD Despite Legislation	Don't Know/ No Answer
	Under All Circum-stances	Under Certain Circum-stances		
Watercraft Usage				
Recreational watercraft user	79	11	7	3
Non-user of any watercraft	88	9	7	1
User of pontoon boats	65	29	5	-
PFD Usage While On Pontoon Boats			7	
Always	79	21	-	-
Occasionally	67	33		-
Never	44	39	17	
Age				
18-24	75	21	3	1
25-44	83	11	5	1
45-64	87	7	4	3
65+	90	6	3	1
Gender				
Male	78	14	6	2
Female	88	7	5	2
Region			-	
B.C.	81	11	5	3
Prairies	85	9	4	2
Ontario	83	11	4	2
Quebec	84	11	4	1
Atlantic	93	4	2	1
North***	87	9	4	-

*** Unweighted data are used for North since the weighted sample (N=3) is too small for meaningful analysis.

Table 24 - Hypothetical Compliance with PFD Legislation for CANOES According to Watercraft Usage, Current PFD Usage, Age, Gender, Region

	Would Wear a PFD..		Would Not Wear a PFD Despite Legislation	Don't Know/ No Answer
	Under All Circum-stances	Under Certain Circum-stances		
Watercraft Usage				
Recreational watercraft user	84	9	5	2
Non-user of any watercraft	92	3	5	1
User of canoes	79	12	6	3
PFD Usage While On Canoes				
Always	90	6	2	2
Occasionally	74	17	4	6
Never	29	29	38	4
Age				
18-24	78	18	4	-
25-44	87	8	4	1
45-64	92	4	2	2
65+	93	3	3	1
Gender				
Male	83	10	5	2
Female	92	5	2	1
Region				
B.C.	80	12	6	2
Prairies	90	6	3	1
Ontario	86	9	4	1
Quebec	93	5	1	1
Atlantic	95	2	1	1
North***	86	9	5	-

*** Unweighted data are used for North since the weighted sample (N=3) is too small for meaningful analysis.

Table 26 - Hypothetical Compliance with PFD Legislation for ROWBOATS/DINGHIES According to Watercraft Usage, Current PFD Usage, Age, Gender, Region

	Would Wear a PFD...		Would Not Wear a PFD Despite Legislation	Don't Know/ No Answer
	Under All Circum-stances	Under Certain Circum-stances		
Watercraft Usage				
Recreational watercraft user	81	11	7	1
Non-user of any watercraft	91	6	7	1
User of rowboats/dinghies	74	17	8	1
PFD Usage While On Rowboats/Dinghies				
Always	88	10	2	
Occasionally	62	26	12	-
Never	50	25	19	6
Age				
18-24	76	22	2	-
25-44	86	8	5	<1
45-64	88	6	4	2
65+	91	5	2	1
Gender				
Male	82	11	6	1
Female	89	7	5	1
Region				
B.C.	79	12	7	2
Prairies	88	7	4	1
Ontario	83	10	6	1
Quebec	92	6	2	-
Atlantic	93	4	2	1
North***	85	10	5	-

*** Unweighted data are used for North since the weighted sample (N=3) is too small for meaningful analysis.

Key Circumstances that Would Motivate Compliance with Legislation

Those respondents who indicated that they would wear a PFD (on any watercraft) under certain circumstances, but not under all circumstances were asked an open-ended question about what circumstances would induce them to wear a PFD. The responses to this question are summarized below.

Generally, poor weather conditions are more likely than any other circumstances to encourage PFD usage amongst those who are not inclined to wear a PFD under all conditions when on the water.

Other circumstances and personal factors that increase the perceived risk of drowning also have an impact on wearing a PFD. For instance, the type of watercraft, the speed it is moving, the depth of the water, the distance from shore, the presence of alcohol on-board, and concerns that the watercraft is overloaded were each mentioned by some as influencing them to wear a PFD. As well, feelings of vulnerability due to an inability to swim, poor health, a lack of confidence in the skills of the operator, or a general feeling of being "unsafe" will apparently prompt some to wear a PFD when they would not otherwise do so.

Interestingly, few comments related to the compatibility of PFDs with the activity being engaged in, although some mentioned that they would wear a PFD if it did not interfere with their activities. And relatively few conceded that the likelihood of the law being enforced would factor into their decision regarding whether or not to wear a PFD.

Key Reasons For Not Wearing a PFD In Spite of Legislation

As discussed earlier, the overwhelming majority of the sample indicated that they would wear a PFD either under all or certain circumstances if it were required by law. Few said they would disregard a law compelling them to wear a PFD. However, this small minority was asked about their reasons for being unwilling to comply with PFD legislation if it were to be introduced, and the results are summarized in the table below.

The dominant explanation for not wearing a PFD is that the respondents see no need to wear one. Some feel it is unnecessary to wear a PFD due to their "safe" boating practices, because they are "experienced" boaters, or since they feel that carrying one on board means they need not wear one.

Others disagreed with the principle of legislating PFD wearing, either because they feel it should be a personal decision or because they do not feel that legislation will be effective.

A surprisingly small number of mentions related to perceived comfort or functionality issues with PFDs themselves, although a few did raise these concerns. It is notable that swimming ability was not mentioned as a rationale for not wearing a PFD.

Table 29 - Key Reasons Would Not Comply with PFD Legislation

	Number of Times Comment Made
Lack of Perceived Need	38
Do not drive fast	10
Carry one on board just in case	7
Do not need one if water is deep	5
Do not need one in good weather conditions	5
Do not need one when boat is not in motion	4
Have been boating a long time/too experienced to need one	5
Do not go far from shore	7
Do not need one (unspecified)	2
Disagree with Legislating PFD Wear	38
Should be a personal choice/responsibility	18
Legislation will not make a difference/do not agree with gov.	10
PFDs Uncomfortable/Interfere with Activities	10
They are uncomfortable to wear	9
Cannot swim with one on	1
Would depend on the size/type of watercraft	1
No reason	1
Don't know/no answer	9

APPENDIX H: Opinion Poll - Survey

By

P. Groff, PhD
J. Ghadiali, MA

Breach of Standard of Care

The required standard of care is the conduct, which could be either action or omission to act, that conforms to the legally permissible or acceptable standard. In determining the legally permissible or acceptable conduct, the law looks at the prevailing procedural practice in society in the context of a reasonable man. In other words, the law considers how a reasonable man would react to the particular situation based on the peculiar circumstances of the time. This necessarily requires the law to take into account prevailing emergencies and deep frenzies that rend the air when sea accidents occur, the implication being that although a boat passenger is owed a duty of care which the boat owner/operator has breached by exhibiting standards which fail to conform to required standard, such a boat owner/operator may nevertheless be found not liable when the reasonable-man test and the emergency test are applied to the alleged breach of standard. On the other hand, it is not enough for the boat owner/operator to argue that he has done his personal best, if his so called personal best happens not to measure up to societal standard. The law is not concerned with morality and conscience, although generally law and morality appear inextricably intertwined. Notwithstanding setbacks to passengers' claims arising from enlarged application of 'reasonable-man' and 'emergency' tests, there are glaring cases where breach of legally acceptable standard is so obvious that justice herself, although blind, would nevertheless cry out if the law does not pronounce the boat owner/operator guilty.[26] We shall proceed to examine how the reasonable-man test and the emergency test have been applied in assessing alleged boat owner/operators' breaches of legally required standards in the sea transportation industry.

The Reasonable-Man Test

The reasonability test was applied in *Arland v. Taylor*,[27] where the Ontario Court of Appeal established that the standard of care that is to be applied in determining whether or not a defendant has been negligent is an objective one, and is the standard of conduct of "a reasonable and prudent man", i.e., a person of normal intelligence who makes prudence a guide to his conduct. The Court held that it is improper for a juryman to judge the conduct of a person in given circumstances by considering, after the event, what he, the juryman, would have done in the circumstances, and it is consequently misdirection in law for a trial judge to tell the jury to "place themselves in the driver's seat" and ask themselves whether they would have done or omitted anything that the defendant omitted or did. Laidlaw, J.A. defined 'a reasonable man' as follows:

> [A reasonable man] is a mythical creature of the law whose conduct is the standard by which the Courts measure the conduct of all other persons and find it to be proper or improper in particular circumstances as they may exist from time to time. He is not an extraordinary or unusual creature; he is not superhuman; he is not required to display the highest skill of which anyone is capable; he is not a genius who can perform uncommon feats, nor is he possessed of unusual powers of foresight. He is a person of normal intelligence who makes prudence a guide to his conduct. He does nothing that a

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[26] See for example, *Harris* v. *Pennsylvania R. Co., supra* note 23, the facts of which are laid out at *infra* note 41

[27] *Arland v. Taylor* [1955], O.R. 131 (Laidlaw, Aylesworth & F.G. Mackay JJ.A.), an action arising out of alleged negligence in the operation of a motor vehicle

action for damages in personal injuries suffered as a result of breach of contract or negligence caused by servants of the defendant boat corporation which caused her to break her hip in a shipboard accident. Mr. Justice MacKay of the Federal Court of Canada (Trial Div) in granting judgment to plaintiff, held the captain negligent in not slowing his boat by throttling back or perhaps even reversing engines as soon as he observed the larger wave ahead of the vessel:

> I find there was negligence on the part of Captain Touhy in his management of the "Ucluelet Princess" when it encountered a larger than normal wave as it sailed into the wind and waves. That negligence was in his failure to throttle back the engines more rapidly when he saw the larger wave approaching one or two boat lengths ahead. By all accounts he did the right thing but in my view his timing was too slow to avoid the danger that he himself foresaw as the vessel mounted and crested the wave. If, as his own testimony indicates, he throttled back the engines as the vessel mounted the wave, and not before, its forward momentum, underway at five knots as he estimated, would have reduced very little, if at all, before the bow was exposed above the water as the wave passed underneath the vessel. That left the Jacksons in the air and was the cause of Mrs. Jackson's fall to the deck and her injury.[34]

A similar incident appeared before the British Columbia Supreme Court in 1998 in the case of *Vrabic* v. *Kaczor*,[35] where the plaintiff passenger brought actions against the defendant boat operator for damages for back injury he suffered on boat operated by defendant when he was thrown into air by large wave and hit seat hard when he came down. Plaintiff passenger alleged that defendant boat operator had duty to warn him that wave was about to strike boat, which was larger than those previously encountered. The British Columbia Supreme Court held that no duty to warn existed in the circumstance as plaintiff failed to prove the existence of larger wave. The Court further held that even if larger wave existed, defendant boat operator had no time to warn plaintiff passenger and has no duty to warn him about ordinary risk inherent in recreational boating.[36] Another case that demonstrates the requirement of skill or competence on the part of an operator of small crafts is *Holomis* v. *Dubuc*.[37] In that case, defendant in landing an amphibious aircraft on an unmarked, fog-shrouded, wilderness lake collided with an unseen obstacle while taxiing to a stop. The collision tore a

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[34] *Ibid.*, at § 36

[35] *Vrabic* v. *Kaczor*, R28 1999 REISSUE Can. Abr. (2nd) at 712 § 3294; (April 20, 1998), Doc. New Westminster S0-40499 (B.C. S.C.)

[36] With respect, this decision appears to be contrary to laid down principles recognizing a duty to warn of the risk of danger. See for e g, *Rivtow Marine* Ltd. v. *Washington Iron Works*, [1974] S.C.R. 1189, 40 D.L.R. (3d) 530, where such duty was recognized. While the first assertion of the court in *Vrabic* that no duty existed because of absence of unusual wind appears sound in principle, its second assertion excluding duty to warn about ordinary risk seems unsupported by the concept of duty of care

[37] *Holomis* v. *Dubuc* (1974), 56 D.L.R. (3d) 351 (B.C.S.C.) (Verchere, J.)

whereas the approximate time from the moment that the deceased Matthews fell overboard until his body disappeared beneath the boat was three or four minutes and concluded that "whatever may be said in criticism of MacLaren's conduct, his efforts at rescue cannot be said to have worsened Matthews's condition. Moreover, when the boat was first reversed and brought to a stop, a life-jacket was thrown to Matthews who could have grasped it had he not then lost consciousness."[42] At the Supreme Court of Canada, the Court of Appeal's position was approved by the majority of the Court. Speaking for the Supreme Court of Canada, Ritchie, J. observed:

> In assessing MacLaren's conduct in attempting to rescue Matthews, I think it should be recognized that he was not under a duty to do more than take all reasonable steps which would have been likely to effect the rescue of a man who was alive and could take some action to assist himself.[43]

While the peculiar circumstances of *Horsley* appears to have encouraged the courts' legal gymnastics in their bid to figure out the breach of applicable rescue procedure, there are other circumstances where a passenger's drowning clearly depicts that a boat operator's breach of standard of care glaringly speaks for itself. The American case of *Harris* v. *Pennsylvania R. Co.*[44] is one of such cases. In that case, Harris was engaged by the defendant as a deck hand on September 26, 1929; on the night of September 29, 1929, he was drowned while engaged in the performance of his duties on a car float which was in tow of one of the defendant's tugs. The float carried a crew of seven, including James A. White, the mate, W. A. Sparrow, the fireman, and Harris, the deceased, who were on duty. The mate was in command of the vessel, and, at the time of the accident, was standing in the pilot house of the float which was located on an elevated bridge or structure above the main deck about the center of the vessel. From his station in the pilot house, he had a view of the main deck of the vessel, fore and aft; he was able within a few seconds to step from the pilot house to the side of the vessel, a distance of some 25 feet. The flotilla left Cape Charles in tow of the tug at 5:45 p.m., and arrived at the entrance to Little Creek at about 8:45 p.m. When it reached this point, a signal was received from the tug to cast off from the bow of the barge the steel hawser by which she was being towed. This manoeuvre was necessary in order that the tug might come along side the starboard side of the car float and be made fast to her, and proceed thence to the landing. It was the duty of Harris to cast off the hawser from the bow of the float. He had been joined by the fireman, Sparrow, who had come on deck in order to show Harris how to make fast the lines from the tug when she came along side, and also for the purpose of receiving the stern line from the tug and attaching it to the float. After the tow line had been cast off, Harris and Sparrow

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[42] *Per* Schroeder, J.A., for the court, in *Horsley (Appeal) supra* note 25 at 286 (Jessup, J.A. dissenting),

[43] See *Horsley, supra* note 32 at 547 (Laskin and Hall JJ. Dissenting)

[44] See *Harris* v. *Pennsylvania, supra* note 26 (Soper, Circuit Judge)

functioning as the master, driver or operator of the boat. This legal distinction was established in the most recent Canadian case on boat-owner and boat-operator liability for personal injuries and drowning suffered by passengers on board a boat: *Leggat Estate* v. *Leggat*,[46] an Ontario Court of Appeal case delivered on March 6, 2003. In that case, Douglas Leggat was hosting a number of his friends and business associates on September 14, 1996 at his cottage. His brother Donald Leggat had brought over a small portable television set from his own cottage to watch the hockey game, but the picture was so poor that, after the second period, Donald asked whether anyone wanted to go across the lake to Clevelands House, where there was proper television reception, to see the third period. Bertram Leggat and Robert Lishman opted to go; thereafter, Donald requested to use Douglas' boat, to which the latter consented. It was dark and wet when Donald Leggat set out across Lake Rosseau on that evening in the 21-foot motorboat (or SeaRay) owned by his brother Douglas. The boat, which Douglas had purchased some six weeks earlier, was fitted with a 5.7 litre mercury inboard/outboard motor. The driver's position was immediately behind the windshield. The dashboard housing the steering wheel and the boat's gauges was illuminated by panel lights. There was a 360 degrees white pole light inserted at the stern of the boat. A canvas canopy stretched back from the top of the windshield to cover the seating area. The canopy had a square immediately over the driver's position that could be unzipped to permit the driver to stand up and look over the windshield for better visibility. Douglas gave no instructions to his brother Donald that night about how to operate the boat. However, Douglas and his brother had spent most weekends as well as extended periods of time at Islands each summer since 1951, and he was well aware of, and relied on, Donald's boating skills. He had observed Donald operating a variety of powerboats in a variety of conditions, both by day and by night. He knew how familiar Donald was with the lake and particularly with the location of the Islands. Donald's evidence was that he went past the Islands by boat 100 to 200 times each season. In addition, Douglas had lent boats to his brother on many other occasions in the past and knew that Donald's own boat at that time was also a motorboat (or SeaRay). He knew that Donald was an able and experienced boat operator and he assumed that Donald would operate the boat that night in the same way that he or any other experienced operator would have done.[47] Contrary to Douglas' expectations, Donald after pulling out of the dock, very quickly lost his bearings and made a terrible navigational error. Moreover, he remained under the canopy without ever unzipping the canvas over the driver's position to stand up and look out over the windshield. The boat smashed headlong into a small rocky island. Donald had been travelling at a bow-raising speed of 20-25 kilometres per hour, and had not seen, or maneuvered to avoid the rock. Bertram Leggat was killed and Robert Lishman was seriously injured in the course of this collision.[48] At trial, Donald pleaded

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[46] *Leggat Estate* v. *Leggat*, [2003] O.J. No. 757 (Goudge, Doherty and Laskin, JJ.A.) ("*Leggat*").

[47] *Ibid.* at ¶¶ 7, 8 & 10.

[48] *Ibid.* at ¶ 2.

observed that all the above-mentioned sections of the *Canada Shipping Act* on which the trial judgment was anchored had been "repealed by amendments in 1998 and 2001 and replaced by the incorporation into the Act of the 1996 Protocol to Amend the Convention on the Limitation of Liability from Maritime Claims 1976."[53] Nevertheless, Justice Goudge of the Ontario Court of Appeal went ahead to appraise the applicability of those sections in the context of the case on appeal, assuming the sections had not been repealed. Justice Goudge observed that sections 566 and 567, which apply primarily to joint tortfeasors who injure an innocent third party, do not impose liability where otherwise there would be none[54] and that section 571 does not in anyway contain anything about the liability of an owner for the fault of his vessel. It was further observed that Rule 2 of the Collision Regulations does not purport to impose a liability on the owner that would not exist without the Rule.[55] It was also opined that the trial judge made two errors of fact in finding that Douglas Leggat expected his brother to drive the boat while seated under the cover unless there was a heavy rainstorm, and that Donald did in fact operate the boat as anticipated by Douglas. Both findings were not supported by evidence.[56] Goudge J.A. concluded in the following manner:

> In summary, therefore, an analysis of the particular sections of the Act does not support the conclusion that, individually or collectively, they impose a statutory liability on an owner for the fault of his vessel in the circumstances of this case. Thus I think the trial judge erred in finding Douglas Leggat liable on this basis. Having said that, *it is clear that Canadian maritime law permits the imposition of liability on an owner of a vessel on other bases.* Historically, the principle of respondeat superior rendered ship owners responsible for the acts of those they employed to navigate their ships on the high seas. That principle obviously has no application to this case. *However, it is also clear that liability can be imposed on an owner of a vessel on the basis of the ordinary principles of tort law.*[57]
>
> In conclusion, since it cannot be said that the Canada Shipping Act imposes liability for this incident on Douglas Leggat as owner, and since the trial judge's other findings cannot serve as a surrogate for the conclusion that Douglas Leggat was himself negligent and therefore liable, the trial judge's finding of liability against him cannot stand.[58]

One legal underpinning of this case remains that where a boat is not operated by its owner, the owner is nevertheless under a duty to ensure that the master,

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[53] See *Leggat, supra* note 48 at ¶ 30, *per* Goudge J.A., for the Court.

[54] *Ibid.* at ¶¶ 31-35.

[55] *Ibid.* at ¶¶ 36-39.

[56] See generally, *ibid.* at ¶¶ 50-53.

[57] *Ibid.* at ¶¶ 43 – 45 (emphasis added).

[58] *Ibid.* at ¶ 55.

The Emergency Test

The Courts have always taken into cognizance the prevailing peculiarities of accidental scenarios in arriving at their decisions. The emergency test complements the reasonable-man test, and both appear intertwined in many respects. It is not unusual to come across cases where the duty of care owed by a boat owner/operator to his passengers glaringly appears to have been breached, yet the former is not found guilty of such breach. One of the reasons that account for this exception is the application of the emergency test. That duty of care is a fact-sensitive principle which varies with the circumstances of each particular case was established by Lord Wilberforce in the English case of *Anns* v. *Merton London Borough Council,*[63] which restated the neighbourhood theory. Lord Wilberforce observed:

> the position has now been reached that *in order to establish that a duty of care arises in a particular situation, it is not necessary to bring the facts of that situation within those of previous situations in which a duty of care has been held to exist.* Rather the question has to be approached in two stages. First one has to ask whether, as between the alleged wrongdoer and the person who has suffered damage there is a sufficient relationship of proximity or neighbourhood such that, in the reasonable contemplation of the former, carelessness on his part may be likely to cause damage to the latter - in which case a prima facie duty of care arises. *Secondly, if the first question is answered affirmatively, it is necessary to consider whether there are any considerations which ought to negative, or to reduce or limit the scope of the duty or the class of person to whom it is owed or the damages to which a breach of it may give rise.*[64]

This restatement, apart from keeping alive Lord Atkin's vision that the category of negligence is not closed, reveals that the facts of each case has to be separately considered in making an argument of whether or not a duty of care exists in a particular situation. In other words, the existence of duty of care is a contextualised, as opposed to a mechanistic, concept. Moreover, the restatement lays down a two-way test that should serve as a threshold in duty of care analyses: the proximity test and negativing-factor test, both of which become cumulative rather than disjunctive once the first threshold is crossed. It is noteworthy that the Court's negativng-factor test was based mainly on policy considerations; however, in addition to policy considerations, as this memorandum illustrates below, the emergency test has emerged to be a negativing factor which limits the application of duty of care in certain situations to a reasonable extent absent policy considerations. The Canadian position on the *Anns* two-part test is best illustrated by the Supreme Court of Canada's decision in *Cooper* v. *Hobart.*[65] The Court in defining "proximity" in that case

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[63] *Anns* v. *Merton London Borough Council,* [1978] A.C. 728 ["Anns"]

[64] *Ibid.*, at 751, *Per* Lord Wilberforce (emphasis added)

[65] *Cooper* v. *Hobart* (2001), 206 D.L.R. (4th) 193 (S.C.C.) ["*Cooper*"], (a case determining whether the Registrar of Mortgage Brokers owed a duty of care to an investor who lost monies as a result of the unauthorized use by a mortgage broker.)

Appeal laid down the emergency test as follows:

> the test to be applied to [emergency reactions]... is not whether [the party] exercised a careful and prudent judgment in his response, but whether what he did was something an ordinarily prudent man might reasonably have done under the stress of the emergency.[70]

In a similar vein, legal scholars have not relented in drawing similar conclusions. According to Glanville Williams, a notable English scholar:

> Perfect foresight and presence of mind are not required [where a sudden emergency arises]. This rule, sometimes called the "agony of the moment" rule, is merely a particular application of the rule that the standard of care required of both plaintiff and defendant is that of a reasonable man.[71]

A case that vividly illustrates all the above paraphernalia of the emergency test is *Holomis* v. *Dubuc*,[72] which clearly reveals that during emergencies, standards of perfection are not required. In that case, the defendant, a pilot of an amphibious aircraft, in landing on an unmarked, fog-shrouded, wilderness lake collided with an unseen obstacle while taxiing to a stop. The collision tore a large hole in the metal covering of the hull in the area of the passengers' compartment, and water began to pour into the compartment. The deceased and two other passengers leaped into the lake through the open port door. The other two were rescued because they were wearing lifejackets but the deceased who was not wearing any lifejacket drowned. In an action against the defendant pilot, Mr. Justice Verchere of the British Columbia Supreme Court held that "...the principle that emerges is that the standard of perfection should not be applied to a conscious decision made hastily in an emergency..."[73]

In our case study *Horsley*, the emergency test appears to have played a prominent role in the decisions at both the Ontario Court of Appeal and the Supreme Court of Canada. One of the major issues before the courts, and which coincidentally seemed to be the most important since it was the ultimate determinant of the owner-operator's liability in that case, was whether the application of the wrong rescue procedure by the owner-operator, MacLaren, in backing to the drowning passenger, Matthews, instead of proceeding towards him bow-on amounted to negligence (in which case the owner-operator would be liable), or merely amounted to an error of judgment excusable by the then-prevailing emergency circumstances, in which case he would not be liable. The

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persons engaged in throwing snow on the fire in attempt to quench it. Plaintiff joined in this activity without having the presence of mind to use one of the available fire extinguishers which might have been capable of putting out the fire. The issue before the court was whether plaintiff's action amounted to contributory negligence or could be excused as a mere reaction to an emergency.

[70] *Ibid.* at 248

[71] See G. Williams, *Joint Torts and Contributory Negligence*, (London: Stevens, 1951), at 361

[72] *Holomis* v. *Dubuc* (1974), 56 D.L.R. (3d) 351 (B.C. S. C.)

[73] *Ibid.*, at 360, *per* Verchere, J.

road was blocked. However, the appellant having managed to pass through, left her car lights on. After assisting one of the injured survivors of the collision, the appellant ran along the left-hand shoulder to flag down any approaching vehicle with the aim of getting assistance. She began waving her arms to flag down an approaching tractor-trailer while the beam of her lights was still on. The driver of the Tractor-trailer, Slobodian, on seeing appellant, jammed on his brakes and, due to the icy road the vehicle jack-knifed and struck the appellant. The tractor-trailer was travelling at 58 m.p.h. with its lights on low beam. The appellant brought an action against the driver and owner of the tractor-trailer and the driver and owner of the car which had been travelling on the wrong side of the road. The Supreme Court of Canada, in granting judgment against the owner and driver of the car which had been travelling on the wrong side of the road, held that appellant was a rescuer to whom a duty was owed by the driver of that car and that the ensuing events were reasonably foreseeable consequences of the driver's negligence. However, applying the emergency test to the tractor-trailer driver whose vehicle jack-knifed and struck the appellant, the Court excused the action of the tractor-trailer driver as mere permissible error of judgment occasioned by the emergency of the time. According to the Court:

> As the event turned out, it was a mistake for Slobodian [driver of the tractor-trailer] to apply his brakes as he did and it is possible that if he had used the hand brake he could have kept his vehicle under better control, but he appreciated that there had been an accident just ahead of him and he was faced with a gesticulating woman on the side of the highway so *that he was acting in a moment of imminent emergency, and I do not think that his error of judgment can be classified as actionable negligence.*[78]

The benign application of the emergency test to boat owners/operators (and drivers generally) in the present era has the support of old judicial authorities. As far back as 1935 in *McMillan* v. *Murray*, the then Chief Justice of Canada, Sir Lyman P. Duff, observed that "if there was a mistake of judgment on [the driver's] part, it was an excusable mistake and the most unfortunate misadventure was an accident. The standards to be applied [in emergencies] are not standards of perfection."[79]

Conclusion

To summarize this subsection, it is noteworthy that the emergency test while benignly favourable to boat owners/operators has great implications for passengers. As could be inferred from the illustrations above, it lowers the acceptable standard of care which a boat owner/operator owes to his passengers and also limits the former's duty of care to such passengers. This lowering of acceptable standard and limitation of duty makes it

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[78] *Ibid.*, at 10, *Per* Ritchie, J. (with whom, Judson, Dickson, De Grandpre, and Martland, JJ. concur) while Pigeon, J. (with whom, Laskin, C.J.C., Spence and Beetz JJ agreed) dissent, (emphasis added)

[79] See *McMillan* v. *Murray*, (1935), 4 D.L.R. 666 at p. 667, [1935] S.C.R. 572 at p. 574, *per* Duff, C.J.C.

Establishment of Injury Suffered by Passenger, and

Rational Connection between Boat Owner/Operator's Conduct and Passenger's Injury

We deem it logically prudent at this juncture to merge the third and fourth factors because of their close interconnectivity. It is difficult to discuss each in isolation of the other. Therefore, in order to avoid distracting repetitions, a mixed analysis of both factors is engaged in this section. Where the negligent conduct of a boat owner/operator does not cause injury to any of the passengers, he is entitled to acquittal from all civil liability claims. It follows that a boat owner/operator cannot be liable in negligence merely for exhibiting rude or morally unworthy conduct which causes shame, humiliation or loss of respect to any of the passengers without more. In other words, non-material injuries are not actionable under this branch of tort law. There must be a material injury resulting from owner/operator's cause. Causation is an expression of the relationship that must be found to exist between the negligent conduct of the boat owner/operator and the injury to the passenger in order to justify compensation of the latter.[80] Not surprisingly though, almost all sea accidents result in one form of material injury – physical, emotional, psychological – or the other, death. Therefore, establishing the material injury suffered does not pose much problem to passengers, although establishing the 'actual' cause of the injury or drowning may appear tasking in some circumstances due to the 'rational connection' test. On the other hand, where a passenger is able to establish the cause of injury, boat owners/operators have constantly had recourse to the defence of contributory negligence as an exculpatory remedy. This defence claims that had the injured passenger acted cautiously by taking some precautionary measures to protect himself, he would not have suffered the harm. As we shall see below, the fact that a passenger was not wearing a lifejacket or PFD as at the time of the injury or drowning has always been alleged by boat owners/operators as a major cause of injury/death or at least an aggravation of it. However, the courts have viewed this defensive mechanism ambivalently just as they did when the seat belt defences first emerged. While some agree with boat owners/operators that non-wear of lifejacket or PFD establishes that the injured/drowned passenger was contributorily negligent, others do not embrace such deductive reasoning. Although we have reason to doubt whether want of lifejacket or PFD wear causes or at least increases the risk emanating from sea accidents sufficient to warrant a drastic remedy of holding the injured/drowned passenger partly liable for the harm he suffers, the courts' jurisprudence respecting this issue really makes such conclusion feasible. As our reasons for thinking so will presently appear in the discussion of the present issue, we need not anticipate them just at this stage.

The general rule respecting causation is that cause of injury is established where the plaintiff proves to the civil standard on a balance of probabilities that the defendant caused or contributed to the injury. However, where the subject-matter of the allegation lies particularly within the knowledge of the defendant, in the absence of evidence to the contrary adduced by the defendant, an inference of causation may be drawn. This rule was affirmed by the Supreme

[80] See *Snell* v. *Farrell*, (1990), 72 D.L.R. (4th) 289 at 298, (S.C.C) *per* Sopinka, J., for the court.

> It has long been established that a defendant is liable for any injuries caused or contributed to by his or her negligence. If the defendant's conduct is found to be a cause of the injury, the presence of other non-tortious contributing causes does not reduce the extent of the defendant's liability.[85]

Accordingly the defendant was held liable for the full loss. *Athey* case establishes the principle that the boat owner/operator has to take the injured or drowned passenger as he finds him. It is immaterial what the passenger's previous state of health was before the negligent conduct occurred. Once it is established that it was the boat owner/operator's negligence that led to the resultant injury/death, the boat owner/operator is liable.

A general inquiry into the theory of causation requires the application of the "but for" test which demands that the passenger show that but for the negligence of the boat owner/operator the injury would not have occurred. The "but for" test establishes a rational connection between the boat owner/operator's negligent conduct and the passenger's injury. This was the test applied by the Supreme Court of Canada in our case study – *Horsley* when the Court observed that:

> ...if the respondent [boat owner-operator, MacLaren] is to be held liable to the appellants [drowned passenger, Horsley, and his dependants], such liability must in my view stem from a finding that the situation of peril brought about by Matthews falling into the water was thereafter ... so aggravated by the negligence of MacLaren in attempting his rescue as to induce Horsley to risk his life by diving in after him.[86]

In other words Mr. Justice Ritchie's argument for the Supreme Court was that in order to hold the boat owner-operator, MacLaren, liable for the drowning of the passenger, Horsley, the rational connection must be established that "but for" the increased danger to which the drowning Matthews was exposed as a result of MacLaren's conduct in rescue attempt, Horsley would not have taken the risk of diving into the water to expedite the rescue of Matthews. Mr. Justice Ritchie proceeded to clarify this point:

> ...before MacLaren can be found to have been in any way responsible for Horsley's death, it must be found that there was such negligence in his method of rescue as to place Matthews in an apparent position of increased danger subsequent to and distinct from the danger to which he had been initially exposed by his accidental fall.[87]

The Supreme Court's application of the "but for" test resulted in the resolution of the issue in favour of the boat owner-operator, MacLaren. According to the Court, notwithstanding that the rescue procedure applied by MacLaren was not the most suitable, the evidence did not justify "the finding that any fault of his

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[85] *Ibid.*, at 238 §12, *per* Major, J. for the court.

[86] See *Horsley, supra* note 76 at 546, *per* Ritchie, J. for the court.

[87] *Ibid.* at 547, *per* Ritchie, J. for the Court.

"[t]he law is clear that a plaintiff succeeds if he can show that the fault of the defendant caused, or materially contributed to his injury."[93] It follows that once the conduct of a boat owner/operator materially contributes to a passenger's injury, the rational connection between the conduct and the injury is taken to have been established.

In the same vein, going by the principle in *Myers,* it appears that where a boat owner/operator fails to equip his boat with lifejackets/PFD, or even where such provision is met, fails to instruct his passengers on how to use the objects during emergencies, or it turns out that he supplies substandard lifejackets/PFD, the boat owner/operator will be liable for any injury/drowning suffered by a passenger. In *Delaney Estate* v. *Cascade River Holidays Ltd.,*[94] the appellant, wife of a drowned passenger, claimed damages for the death of her husband by drowning. The deceased was a passenger on a river rafting trip on the Fraser River operated by the defendant.[95] In May 1979 eight passengers boarded the van and drove up the Fraser Canyon to Lytton to board the raft. The defendant's reservation manager hurriedly obtained the signature of the eight passengers on a form entitled "Standard Liability Release"[96] although without adequate notice on the contents or implications of what they were signing. The rafts were assembled and lifejackets were provided for each passenger. The lifejackets supplied to passengers were of 21-pound buoyancy, in compliance with the Department of Transport requirement for small vessels. The raft collided in fast running water with a rock in the Fraser Canyon. Of the eleven people on board (eight passengers and three crew), three were drowned. The President of the defendant, Mr. Sims, recognized as early as 1973 that 21-pound buoyancy lifejackets were inadequate for trips on the Fraser River. This observation was based on his experience in rafting on the Colorado River where lifejackets of greater buoyancy were used. He corresponded with the Federal Department of Transport requesting information on lifejackets having buoyancy in excess of the Department's approved standards. The Department advised Sims that lifejackets of greater buoyancy could be used provided the rafts also carried Department of Transport approved lifejackets. In 1978 or early 1979, Sims knew that the Ancient Mariner Company of Vancouver manufactured lifejackets of 30-pound buoyancy and that other rafting companies operating on the Fraser River were using 32-pound buoyancy lifejackets. Uncontroverted expert evidence established that the government-approved lifejacket was not an adequate life-preserving device for very powerful and turbulent waters such as those of the 'Mighty Fraser,' especially when it is cold.[97] Immediately after the accident Sims

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[93] *Ibid.* at § 11, *per* Nemetz C.J.B.C. (in a separate judgment.)

[94] *Ibid.*, the Court was composed of Nemetz C.J.B.C., McFarlane and Taggart JJ.A.

[95] *Ibid.* at § 30

[96] *Ibid.* at § 3

[97] *Ibid.* at § 4

rock and was saved. The others were swept off the raft by the current. Delaney and two others were drowned. The other survivors were able to grab duffle bags or logs to obtain buoyancy in addition to the 21-pound life jackets."[104] If the majority of the Court was basing its exculpatory theory on the releases signed by the passengers alone, that would be a different argument, (although the general circumstances surrounding the passengers' signatures, especially Delaney's, are equally suspect) rather than making such a sweeping statement that the evidence did not establish that the inferior lifejackets contributed to the drowning. Fourth, it is not even open to the defendant to contend that it failed to obtain the superior lifejackets because it was merely abiding by the standard approved by the Department of Transport (although the defendant never raised such argument) because two months after the fatal accident with its consequential drowning, the defendant switched to the new superior lifejackets while the Department's regulations, as far as records are concerned, remained the same. In essence, there was no justification for Sims' (defendant's President) failure to equip his small vessel prior to the fatal accident. After a thorough review of the entire decision, the dissenting opinion of Nemetz, C.J.B.C. appears more logically convincing and accordingly preferable:

> A 32-pound life jacket admittedly would have given him [the drowned Delaney] greater buoyancy. The evidence is that it would have kept his head three to five centimetres (i.e. one-and-a-third to two inches) further above the water than did the 21-pound jacket. Of the eight people who did not drown, two clung onto the protruding rock and were saved. The other six were saved by holding onto duffle bags or other floating materials such as wood branches.[105]

A recurrent theme that has repeatedly reverberated in causation inquiry respecting the relationship of boat owner/operator vis-à-vis his passenger is whether the injured or drowned passenger was partly the cause (or contributed to the aggravation) of his own injury/drowning by not wearing a lifejacket or PFD as at the time of the accident. Contributory negligence was not a bar to recovery in an action based on alleged negligent operation or ownership of a boat resulting in personal injury or death.[106] The court could apportion liability in accordance with fault.[107] In other words, the defence of

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[104] *Ibid.* at § 5, *per* Nemetz, C.J.B.C.

[105] *Ibid.* at § 10, *per* Nemetz, C.J.B.C. (in a dissenting judgment)

[106] See *Ordon Estate* v *Grail* (1996), 140 D.L.R. (4th) 52 at 74 & 88 (Ont. C.A.) (Mckinlay, Catzman & Osborne JJ.A.), the Court particularly observed that "the common law contributory negligence bar should not be applied because it is grossly out of step with the current legal conception of what is fair." *Ibid.* at 74.

[107] See *Kwok et al.* v. *British Columbia Ferry Corp. et al.*, (1987) 20 B.C.L.R. (2d) 318 (B.C.S.C) (Cumming J.) (marine accident involving collision of a Ferry and a pleasure boat while Ferry was overtaking the pleasure boat. The Ferry was found liable for two-thirds of the injury for not observing duty of overtaking safely, while pleasure boat operator was found contributorily negligent to one-third of the injury for not keeping proper lookout.).

the deceased who was not wearing any lifejacket drowned. In an action against the defendant pilot, Mr. Justice Verchere of the British Columbia Supreme Court held that "...the deceased ... contributed to this unfortunate and tragic event by his conduct in the **comparatively brief period which** preceded it; and that in the circumstances ... **that conduct amounted ... to a breach** by the deceased of the duty that he owed **to himself to take reasonable care** for his own safety."[112] The Court's decision will be better appreciated when considered along with the tacit picture of the scenario leading to the unfortunate cataclysm:

> On shore, one of the passengers who had left the aircraft was found to have been towed to safety by clinging to the tail of the aircraft, but the other two were still missing. The defendant accordingly set out in search of them, at first by trying to paddle a log, and then by swimming with the support of a life-jacket. After approximately 15 minutes, he came upon one of the missing men making his way with the assistance of a life-jacket towards his, the defendant's shouting, *and he was told by that passenger that the other of them, not having had a life-jacket, had disappeared below the surface of the lake and was presumably drowned.* **There being no sign in the vicinity of the third passenger** or of anyone else, the **defendant accepted the report that was given to him** and thereupon guided **the floating passenger to the shore. About two hours** later, the group was **picked up and flown out by two aircraft which came in** for it and, still later, as I understand it, *the deceased's body was recovered from the lake. It was without a life-jacket then,* and that circumstance, coupled with the evidence of the passenger who was in the water with and talking to the deceased before the latter had disappeared from his view, makes it appear practically certain that the deceased failed to take a life-jacket from the aircraft with him. *It further appears, in my view, that the deceased's death must therefore, in all probability, be attributed to that circumstance, namely, his failure to take a life-jacket from the aircraft before leaping into the lake.*[113]

Based on its finding that the deceased was negligent in failing to appreciate the importance of and the need for a lifejacket in the circumstances,[114] the Court awarded damages of only 50% to the plaintiff. That is, the Court allocated the blames evenly between the deceased and the defendant pilot.[115]

Ten years after *Holomis,* the inquiry into contributory negligence theory received a detailed examination from the Alberta Court of Queen's Bench in *Chamberland et al.* v. *Fleming et al.*[116] In that case, the defendant Brost was operating a jet boat owned by the defendant Fleming, who was in the boat. Brost was an experienced operator of motorboats although he had never driven a jet boat

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[112] *Ibid.* at 355

[113] *Ibid.* at 357-58, *per* Verchere J., (emphasis added)

[114] *Ibid.* at 361

[115] *Ibid.* at 364

[116] *Chamberland et al.* v. *Fleming et al.* (1984), 12 D.L.R. (4th) 688 (Alberta Q.B.) (Girgulis J.)

motion. While it is not within the scope of this memorandum to analyze these cases, it is nevertheless deemed necessary to provide a compendious report of these seat belt cases since there are logical analogies that could be drawn between seat-belt wear and lifejacket/PFD wear.[121]

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[121] See for e.g. a brief sequential ordering of the seat belt cases: *Berrigan* v. *Wallace* (1988) 47 D.L.R. (4th) 752 (N.S.C.A.) (appellant while backing out of a driveway hit a tree. The respondent, who did not wear her safety belt, later suffered from nausea and headaches as well as loss of vision which she attributed to the accident. Held that there was contributory negligence on the part of the respondent for failing to use her safety belt, **which was a breach of the duty to take reasonable** care for one's own safety.); *Quinlin* v. *Steffens et al*, **[1980] O.J. No. 392 (Ont. H.C.) (plaintiff** sustained injuries when the car in which he was **a passenger hit a parked truck. Plaintiff and the** defendant driver were friends and were both **heavily drunk. The plaintiff was not wearing his** seat belt. Plaintiff's action was dismissed.); *Ohlheister et al* **v. *Cummings*, [1979] 6 W.W.R. 282** (Sask. Q.B.) (plaintiffs' suffered injuries when **their car was struck by defendant's vehicle.** Plaintiffs were not wearing their seat belts during the accident. Held that plaintiffs were 25% contributorily negligent in failing to wear seat belts.); *Froom* v. *Butcher* [1975] 3 All ER 520 (English C.A) (in a car collision, plaintiff was not **responsible for the accident** which was wholly attributable to the defendant's negligent driving. **However, plaintiff was not** wearing the seat belt which was fitted to his seat and suffered injuries to **the head and chest** which would have been avoided if he had been wearing his seat belt. Held that plaintiff is 25% contributorily liable for her injuries.); *Pasternack* v *Poulton* [1973] 2 All ER 74 (Q.B.D.) (plaintiff was given a lift by the **defendant in his car; plaintiff did not wear a seat** belt. As a result of the defendant's negligent **driving the car collided with a lamp post, which** shattered the windscreen and caused severe **injuries to the plaintiff's face. Held that plaintiff** was guilty of contributory negligence for not **wearing a seat belt.); *Jackson et al* v. *Millar et al* (1971)** 25 D.L.R. (3d) 161 (Ont. S.C.) (a 6-year-old **plaintiff suffered injuries while a passenger in the** defendant's car after being thrown out of the **skidding car. However, the plaintiff was not wea**ring a seat belt and sustained severe injuries, **including a compound fracture of the right femur,** fracture dislocation of the thoracic spine with **paraplegia at the level of the eighth vertebra, a right chest injury and a closed head injury. The right kidney was removed. Held that plaintiff was 10% contributorily negligent for failure to wear a seat belt.); *Yuan* v. *Farstad* (1967), 66 D.L.R. (2d) 295 (B.C.S.C.) (in a motor vehicle collision,** plaintiff's husband was killed and the plaintiff **injured. During the collision, plaintiff and her** deceased husband were not wearing seat belts **as a result they were thrown violently out of their** car. The deceased died of shock resulting from **internal bleeding and a collapse of his lungs due** to rib fractures. Held that although the collision was caused solely by defendant driver's negligence, deceased was 25% contributorily negligent for failing to use the seat belt fitted into his car.

Arguably, some countervailing arguments militating against the safety-consciousness theory exist, such as the fact that injured or drowned boat users can always have recourse to claims against the owner/operator of the boat where the latter's negligence triggered the casualty. Although this appears to be sound in principle, and equally the law in Canada, albeit theoretically; there seem to be some fluctuations in practice. Owners and operators of sea crafts may resort to waivers and releases, thereby defeating future claims of would-be victims.[1] It is also worth noting that the enlarged scope of the Good-Samaritan theory, which permits a rescuer to claim against the estate of a negligent victim in the event of the rescuer sustaining an injury or drowning while attempting to rescue the victim, makes the prophylactic measures proffered by this safety-consciousness analysis more prudently desirable.[2] Moreover, financial constraints might prevent some claimants from pursuing litigation within the legally stipulated period. In *Ordon Estate* v *Grail*[3] the Supreme Court of Canada had to determine a series of questions respecting the scope and effect of the *Canada Shipping Act*,[4]

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[1] See for example, *Coles* v. *Clarenville Drydock Ltd.* [1998] N.J. No. 265 (Nfld. S.C. - T.D) (L.D. Barry J.) (a case determining the effect of exclusionary clauses in a contractual agreement); *Delaney Estate* v. *Cascade River Holidays Ltd.* (1983) B.C.J. No. 476 (B.C.C.A.) (where the majority of the Court granted judgment in favour of the owner/operator of a small vessel as a result of a somewhat glaringly lopsided "Standard Liability Release" signed by passengers.)

[2] See *Horsley et al.* v. *MacLaren et al* (1971) 22 D.L.R. (3d) 545 at 558 (S.C.C.) (Judson, Ritchie, Hall, Spence and Laskin, JJ.) ["*Horsley*"] *per* Laskin, J. (as he then was) for the judicial foundation of this theory in Canada; See also *Corothers et al.* v. *Slobodian et al.* (1974) 51 D.L.R. (3d) 1 (S.C.C.) where an injured rescuer was allowed to recover from the estate of a negligent rescuee driver who unfortunately died at the scene of the accident. It is noteworthy that the expansive definition of the Good-Samaritan theory in liability matters formulated in *Horsley* by Laskin, J. (as he then was) in his dissenting judgment, found its way into the Supreme Court jurisprudence two years later in this *Corothers et al.* v. *Slobodian et al.* by which time, not surprisingly, Laskin, J. had risen to be the Chief Justice of Canada. Whether his elevated position assisted in bringing this theory into practical focus is certainly not addressed by the present analysis. However, it suffices to say that the principle of the Good-Samaritan theory as laid down in *Horsley* and interpreted in *Corothers* is the current law in Canada respecting liability issues involving rescue operations by third parties. The theory appears to be part of the general concept of contributory negligence, since in the absence of negligence on the part of the rescuee, he cannot reasonably be said to be liable to a third party rescuer who offered to rescue him.

[3] *Ordon Estate* v *Grail* (1998) 166 D.L.R. (4th) 193 (S.C.C.) (L'Heureux-Dubé, Gonthier, Cory, Mclachlin, Iacobucci, Major and Bastarache JJ.) (a case involving five separate actions for personal injury of two passengers and wrongful death of three passengers arising out of boating accidents in inland waters.)

[4] *Canada Shipping Act* R.S.C. 1985, c. S-9

transportation equally holds its own dangers; as such, accidents are not peculiar to seas alone. However this argument is belied by the fact that in road accidents chances of accessing Good Samaritans are higher than in sea accidents[9] and as such some unconscious road-accident passengers may still be resuscitated during humanitarian emergency interventions than otherwise would have been the case had such accidents occurred on the seas. It is common sense knowledge that drowning is generally caused by a person's inability to breathe when he is submerged under water. While it is also probable that a heart attack could cause drowning, a passenger's presence under water for whatever reason remains a primary cause. It is equally a common knowledge that if a person's head is above water level he will be able to breathe better and thus may eventually escape death. This is primarily achieved through lifejacket or PFD wear on board.

The safety-consciousness theory is further supported by practical realities that have engaged Canadian courts. The observation of the majority of the Ontario Court of Appeal in *Horsley*, which was adopted by the majority at the Supreme Court of Canada, that had Matthews not lost consciousness at the time the lifejackets were thrown to him, he would have grasped them and by implication saved his life[10] is a corollary to the argument that had Matthews been wearing a lifejacket/PFD at the time he fell overboard, he would not have died. In other words, the Courts' observation establishes a nexus between lifejacket/PFD and sea safety, and the correlative argument that absence of lifejacket/PFD is concomitant to casualty on board small sea crafts. The realization and appreciation of this nexus eliminates any existing conundrum or at least downplays any existing doubts respecting the rationality or ultimate advantage of legislating the mandatory use of PFD or lifejackets. Put differently, the safety of small craft users is highly dependent on the exercise of Parliament's duty to compel mandatory usage of lifejackets/PFD.

Dynamism and development, as essential elements of tort law, will also lend support to the safety-consciousness argument. Although echoes of the past still guide and affect the law of tort, tort law has always been amenable to creative changes in society. It may not validly be disputed that in order to meet up with the rapid socio-economic development which confronts the Canadian society, there must be some room, even if just a modicum, for alteration of certain current social ideas, where necessity so demands. That tort law is amenable to societal change has long been recognized by Prosser: "...change and development have come, as social ideas have altered, and they are constantly going on...[t]his

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[9] See *Corothers et al.* v. *Slobodian et al.* (1974) 51 D.L.R. (3d) 1 (S.C.C.), *cf. Kwok et al.* v. *British Columbia Ferry Corp. et al.*, (1987) 20 B.C.L.R. (2d) 318 (B.C.S.C)

[10] See Mr. Justice Schroeder's comments on the procedure followed by MacLaren in *Horsley et al.* v. *MacLaren et al* (1970) 11 D.L.R. (3d) 277 at 285-86 (Ont. C.A.) (Schroeder, McGillivray and Jessup, JJ.A.) ["*Horsley (Appeal)*"], which was affirmed at the Supreme Court of Canada in *Horsley, supra* note 6 at 552, *per* Ritchie J., for the Court

> defendant has wronged the plaintiff, the plaintiff can sue to have the wrong set right. The plaintiff does not step forward as a private enforcer of a public interest...The plaintiff sues literally in his or her own right as victim of the defendant's wrongful act.... the morality implicit in the relationship of doer and sufferer assigns the court a properly adjudicative function...Because tort adjudication involves justifications that pertain only to the relationship between the parties as doer and sufferer of the same harm, a court cannot impose on the relationship an independent policy of its own choosing. Rather, a court intervenes at the instance of the wronged party in order to undo or prevent the wrongful harm. Adjudication thus conceived makes explicit what is latent in the immediate interaction of the parties. *It does not involve the legislative selection of a course of action that will promote the general welfare.*[14]

However, far from Weinrib's conceptions, courts have sometimes looked to legislative enactments as motivating factors in judicial creativity. In other words, establishment of a legislative selective regime enables courts to figure out which areas of law are deserving of more judicial creativity in light of changing societal circumstances. In *MacDonnel* v. *Kaiser*,[15] Mr. justice Dubinsky of the Nova Scotia Supreme Court expressed his reluctance to judicial creativity in areas where the legislatures have not declared to be a creative zone. This invariably demonstrates that legislative selective regime is salient in certain respects and actually boosts judicial creativity, which is a necessary pill for the present dynamic Canadian society.

Several advantages are derivable from the safety-consciousness theory. One advantage of a legislative Lifejacket/PFD regime is that it would make for uniformity of decisions. So far, there appears to be no yardstick to assist the courts in measuring the extent of a boat passenger's negligence. The decisions of the courts in this respect appear to be somewhat swinging in a pendulum, and may be regarded as schizophrenic in some instances. While some are of opinion that a passenger who neglects to wear a lifejacket/PFD is contributorily negligent, others see such as a mere exercise of ones choice, which does not amount to negligence. Mr. Justice Oliver Wendell Holmes, an oft-quoted American jurist of high repute, desired legal progress through a piecemeal elevation of uniform standards of conduct so as to enable people to have a prior knowledge of what the law expects of them in order to strive to conformity. Although Holmes would prefer the fixed rules to emanate from the courts, that does not preclude the legislature, which primarily has such mandate, from enunciating such desirable fixed rules for the convenience of society. The

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[14] See E.J. Weinrib, "Two Conceptions of Tort Law" in R.F. Devlin ed., *Canadian Perspectives on Legal Theory* (Toronto: Edmond Montgomery Publications, 1991) 31-32 (emphasis added).

[15] *MacDonnel* v. *Kaiser*, (1968), 68 D.L.R. (2d) 104 (N.S.S.C.) (a case that refused to adopt a seat belt defence due to the court's doubts about the general effectiveness of seat belt as a safety device.)

always stressed that each occupant of the boat should be wearing a life-jacket. He also indicated that commonly people did not follow that advice.[20]

Further support is given to this argument by the rapid increase in use of seat belt which occurred dramatically after compulsory seat belt legislation came into being, and which consequently reduced road injuries and deaths.[21]

A further advantage of the **safety-consciousness theory inheres** from policy considerations: reduction in **sea injuries and drowning will reduce** the health burden of society and in turn **reduce government expenditure on** treatment of preventable sea injuries and autopsies aimed to discover causes of drowning.

There are equally advantages of deterrent effects that are derivable from a mandatory lifejackets/PFD regime. As was pointed out above, despite countervailing arguments in some quarters, tort law is noted for its support for societal changes. It would not be unreasonable to urge tort law to lend its avowed support to a legislative regime aimed to mandate small craft users to wear PFD. Notwithstanding that liability insurance is always available to serve as a deterrent mechanism, mandatory lifejackets/PFD wear is equally a good illustration of tort-law-deterrent mechanism. This is borne out of the fact that a compulsory lifejackets/PFD wear regime would enable boat owners and operators to rely on boat users' violation of the law (by not wearing lifejackets/PFD) as a defence to liability in cases of sea accidents. This will at least make it certain that those boat users who fail to wear lifejackets/PFD are guilty of contributory negligence. This would have the effect of reducing the damages they would otherwise have been awarded. The insurance companies will equally be relieved of some financial burdens. Accordingly, the reduction of plaintiff's tort recovery due to non-lifejacket/PFD wear is more likely to encourage small craft users to wear lifejackets/PFD when on board small crafts. Judicial encouragement for the use of safety devices is not new in Canada. As far back as 1933, the failure to use a safety rope was found to amount to contributory negligence.[22]

Conclusion

In summary, the various illustrations in Part I of this memorandum established that a passenger's failure to wear a lifejacket/PFD contributes immensely to the injuries and drowning that occur during sea accidents. Different judicial authorities reviewed in this memorandum have categorically demonstrated that various accidents occur on our inland waters, lakes and seas leading to lots of injuries and drowning. In reaction to

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[20] See *Chamberland et al.* v. *Fleming et al, Supra* note 18 at 699-700 (emphasis added)

[21] See *The Globe and Mail,* (23 June 1976) 5

[22] See *Carter* v. *Christ* (1933), 148 So. 714 (La.); See also Part I note 108 of this memorandum for a compendious collection of cases where Canadian courts have found passengers contributorily liable for failing to wear seat belts.

Table of Cases