Compulsory wearing of lifejackets

Kim Klaka PhD, MRINA 5th August 2016

1. PREAMBLE

Let us move into the land of fantasy for just a few moments…. If 99% of all boat drownings were prevented by the compulsory wearing of lifejackets, anyone opposing it would be considered a bit strange at the very least. On the other hand, if compulsory wearing only saved 1% of all drownings, those in favour would be the ones considered strange. The reality lies somewhere between the two extremes so there is a judgement call to be made on the value of compulsion weighed against the constraints it brings on our personal freedom.

2. BACKGROUND AND SCOPE

This document is a submission to the DoT WA Recreational Vessel Safety Equipment Review of Regulatory Requirements ERG Draft 1 of 18 July 2016. It has been prepared without consultation with anyone else. It is illustrative rather than comprehensive, owing to shortage of time and money. The document places particular emphasis on the wearing of lifejackets on sailing yachts but most of the content is relevant to other types of recreational vessels.

I have used the words “guidelines” and” legislation” interchangeably. For the most part you can replace one word for the other without a change in meaning.

3. WHY IS THERE SO MUCH DEBATE?

Like everyone else, I hold an opinion on the matter, but this article does not put forward a position either for or against the compulsory wearing of lifejackets. It presents some facts and some objective analysis for you to consider. What becomes evident is the need for flexibility in any guidelines that are developed. The circumstances in which the wearing of lifejackets is appropriate vary from boat to boat, from person to person and from hour to hour.

The number of drownings from small powerboats (tinnies, half-cabin cruisers etc.) is very much greater than the number of drownings from cruising yachts and there is strong evidence that compulsory wearing of lifejackets reduces the number of drownings from those small powerboats. Unfortunately, the question of whether compulsion is effective or appropriate for other vessel types has been largely ignored in the pathway to legislating.

4. PUTTING IT IN PERSPECTIVE

The National Drowning Report (RLSS, 2010) shows that about 10 people drown each year from watercraft on the ocean or in harbours. That includes drownings from sailing yachts, tinnies, powerboats and kayaks; we don’t have the breakdown by vessel type. To put it in perspective, total drownings across Australia are about 280 per year, which includes rivers, beaches and swimming pools. So boat drownings on the sea account for less than 5% of all drownings in Australia.

Analysis of marine incidents in Australia during 2007 (NMSC, 2007) shows that of the 47 reported fatalities, 77% involved recreational motorboats and 21% involved commercial passenger vessels. By my reckoning this leaves just one fatality in the category covering all other boat types (which might

have been from a yacht or it could have been a commercial fishing vessel or a kayak). There were six fatalities the following year for the same “boats –other” group.

An analysis by Marine and Safety Tasmania of coronial records 1987-1999 showed just one fatality from a sailing yacht out of a total of 46 fatalities in recreational boats over the entire 13 years. It does not state if the one yacht fatality was a drowning or from some other cause.

A similar analysis in Victoria for the period 1999-2003 (NMSC, 2007) painted a less rosy picture – out of a total of 37 recreational boating fatalities in this 4 year period, 5 were from sailing boats. Clearly that is 5 too many, but it is not a huge number i.e. we are not in some sort of crisis.

The national boating usage study (NMSC, 2010) shows that 78% of people on sailboats wear a lifejacket sometimes and a further 12% always wear one. (The overall wear rate on all types of watercraft was about 15%.) This puts us at the highest wearing rate of all boat types except jet-skis. When you consider that it is often more appropriate to wear a safety harness than a lifejacket, this is an impressively high record.

Overall we seem to have a very low number of drownings from sailing yachts; let’s keep it that way!

5. RISK ASSESSMENT

Risk assessment for wearing of lifejackets is more straightforward than many other nautical risks. The primary aim is to keep the person afloat (the right way up) after they have fallen into the water. The consequence of not wearing a lifejacket when in the water is usually the same – death by drowning or hypothermia. The rare occasions when the consequence is reduced are when:

- the person is able to swim well and rescue is immediately to hand (recovery within a few minutes), or
- swimming to shore is feasible (perhaps 500m in calm conditions).

Therefore the only significant variable (besides swimming ability) is the likelihood of falling into the water.

6. CONSISTENCY OF GUIDELINES

There is no vessel where the risk of falling in the water does not exist – passengers have fallen from large cruise liners. Clearly it would be considered socially unacceptable for such passengers to wear life jackets whenever they are on deck, but what about the passenger on a 10m ferry? Or the non-paying passenger on a 8m power yacht? If any of the above are exempted, what criteria are being used? There is usually no increase in risk resulting from them wearing a lifejacket; it is more a question of what is considered appropriate. Why is it appropriate for a dinghy sailor to wear a lifejacket (OK, a buoyancy aid in this instance) but not a professional fisherman? There are more professional fishermen drowned each year than there are dinghy sailors, so the criteria do not include the level of risk. So what are they? The criteria for what is acceptable must first be identified before any assessment of the need for, and extent of, legislation can be made.

One very clear criterion is that wearing of a lifejacket is not required if an equal or better method of preventing drowning is used. A good example of this is the use of a safety harness on a yacht sailing offshore. The likelihood of being recovered from falling overboard is very low, regardless of whether a

lifejacket is worn. On the other hand, the likelihood of remaining on board is very high if a harness is worn. This is well illustrated in MAIB, 2006. In the case of solo boaters (power and sail), a safety harness is far preferable to a lifejacket. If they fall in the water there is virtually no chance of recovery, so prevention is the only realistic option.

Should the level of risk acceptable for recreational boating be any different from that accepted in commercial seagoing? It might be argued that a lower level of risk should be aimed for in recreational boating because the boaters are generally less trained and less experienced than professional seafarers. However, it could be argued that a recreational boater goes to sea out of choice rather than economic necessity and should therefore take increased responsibility for their own actions resulting from their choice.

The case for consistency across all recreational pursuits is compelling. Why should different levels of risk be accepted for powerboating, kayaking, sailing, rock fishing, surfing or swimming? Some of those activities are inherently more risky than others, in which case greater safety management is needed, but the final level of risk should be consistent across activities. It is inconsistent to require a boater to wear a lifejacket, but not the rock fisher likely to be swept to sea by a large wave.

7. BENCHMARKING

A measure of good legislation is that it encourages the behaviours it seeks to enforce. A useful benchmark for compulsory wearing of lifejackets is to consider the situation where a swimmer might reasonably be expected to be in the water alongside the boat. Clearly, the person already in the water is at greater risk than the person in the adjacent boat (non-swimmers, children and the infirm excepted). If the legislation requires the person in the boat to wear a lifejacket when the person already in the water does not have to, then the legislation is bad – it has failed to address the risk appropriately. Two examples are given below of undesirable outcomes that might occur if this benchmark is not applied:

- Two people in a 3m yacht tender powered by a 4hp outboard motor are going ashore from their yacht and one has forgotten their lifejacket. The marine safety boat approaches and they know they are likely to be fined, unless....they aren't required to wear lifejackets if they are swimmers, so the one without the lifejacket jumps into the water and swims ashore, alongside the tender. The legislation has resulted in behaviour that increases risk, which is the opposite of its intent; bad legislation.
- Every year a swimming race is held from the Perth mainland to Rottnest Island, a distance of approximately 10nm. Each swimmer or team of swimmers has at least one support boat. Team swimmers take turns to swim, rather like a relay race, with the changeover occurring at the support boat. There are over 2,000 competitors. Blanket compulsory wearing of lifejackets would require that team swimmers have to put on a lifejacket as soon as they come out of the water, then they can take it off as they re-enter the water. From a safety perspective, this is almost the exact opposite of what should happen. They are at greatest risk of drowning when they are in the water, not when they are in the support boat. Bad legislation. The event could,

of course, be granted an exemption, but on what grounds? The risks are no less than in the first example.

8. FACTORS AFFECTING THE NEED TO WEAR LIFEJACKETS

Area of operation

You would expect the fatalities to occur offshore where it is most dangerous and furthest from help, yet an analysis of recreational boating fatalities in Queensland for the period 2001-2005 (NMSC, 2006) shows the opposite - over half occur in smooth (and inland) waters. A study of Canadian boating showed a similar outcome - 63% of boating drownings occurred less than 15m from the shore (CSBC, 2004). The missing data required to interpret these figures is the number of boats operating in those areas, and the duration of their operation. The NMSC Boating usage study (2010) goes some way towards addressing this problem, but it needs further analysis to resolve the issue.

Weather conditions

Again, there is a lack of data, and the data that is available shows inconsistency with conventional wisdom. The same Queensland 2001-2005 data shows that fatalities are most likely on clear days, so does it follow that wearing of lifejackets is more important on clear days than on cloudy or rainy days? I think not – we need to know the number of boat-days spent in each condition. Without that information we could well find the statistics falsely infer that lifejackets are most effective when worn in daytime, in clear calm weather, in warm water etc. - the opposite of what might reasonably be expected.

Level of experience

You would expect inexperienced sailors to be at greater risk and there is good evidence to support this. A US Coastguard report (USCG, 1999) found that boaters with less than 100 hours of experience had a fatality rate of 64 per million hours, which decreased to 22 after 100-500 hours experience and was just 0.0018 for those with more than 500 hours experience. That's very convincing. So if experienced boaters are considered less at risk than inexperienced boaters, does it follow that holders of a Recreational Skipper's Ticket might gain exemptions from wearing lifejackets in certain situations?

Type and size of boat

Data from Queensland and Tasmania (NMSC, 2006) indicates that about 75% of fatalities occur in relatively small powerboats, which is similar to the results of a survey in Canada (CSBC, 2004). Is it the length of the boat that matters? Or the speed? Or some other factor? O'Connor, 2004 found that 31% of open and half-cabin motor boats involved with fatalities were overpowered. However, there is no data on how many of such fatalities were drownings. High speed is dangerous in terms of collision likelihood and consequence, but low speed can be dangerous in following breaking waves e.g. when crossing a bar. A large boat has more ability to resist capsize than its geometrically similar smaller sister-vessel, but a catamaran and a monohull of the same length have quite different capsize and swamping characteristics, with different likelihood and consequences (catamarans rarely sink).

New Zealand data shows that keel yachts are over-represented in fatality statistics (MSANZ, 1999), though later in the same report it is acknowledged that there is insufficient data in that category for the results to be statistically significant. This begs the question: if the number of fatalities is so small as to be statistically insignificant, why is legislation being considered for those categories?
All this leads to the unavoidable conclusion that the need to wear a lifejacket depends on individual circumstances that vary from boat to boat, place to place, person to person and hour to hour.

9. EDUCATION OR LEGISLATION?

In NMSC, 2006 the effects of a combined program of legislation and education on lifejacket wearing in Tasmania and Victoria are described. Both states introduced their legislation at the same time as they brought in a major educational campaign. The result was a reduction in the number of fatalities, but was this due to education or legislation? Probably a bit of both, but how much was due to legislation and how much was due to education? To answer this questions a study would be required of a region where only one of the two influencing factors is introduced at a time. Until that happens (unlikely), we have to rely on the statistically flawed method of comparing fatalities in regions with and without legislation. In the USA, 40 states have lifejacket legislation of some sort (CSBC, 2004) and have a boating fatality rate of between 4.8 and 6.2 deaths per 100,000 vessels (USCG, 2005, USCG, 2016). In contrast, the UK has no lifejacket legislation yet the fatality rate is a remarkably low - between 1.8 and 3.7 (and only 1.5 quoted in MSANZ, 1999). The rate for Australia is about 5 but varies from state to state.
In MSANZ, 1999 (p18) it was found that " insufficient or inappropriate operator knowledge was identified as a causal factor in 90% of fatal recreation boating accidents". This indicates that an education program would have far greater impact than legislation, though it is hardly conclusive proof.

10. CONCLUSIONS

I suggest that this is how we should reach decisions on the matter:

- Circumstances of greatest risk and consequence should be targeted – rock fishers rather than boaters, and small tinnies rather than large seagoing vessels.
- The effectiveness of education programs should be considered as an alternative to legislation.
- The use of alternatives to wearing lifejackets (safety harnesses etc.) should be considered for many situations.

11. A FINAL THOUGHT

Something I find strange in many of the arguments put forward by statutory bodies favouring compulsory wearing of lifejackets is the statement "only x% of fatalities by drowning were wearing a lifejacket". The value of x varies from source to source, but is somewhere around 20% (e.g. it was 26% in the Victoria 1999-2003 analysis). Now the wearing rate of all recreational boaters is also about 20% (e.g. 17% in Victoria in 2005). So the proportion of people who drowned whilst wearing a lifejacket is about the same as the proportion of people who didn't drown whilst wearing a lifejacket. How can this possibly be evidence of the need to wear a lifejacket? It actually implies the opposite –

you are as likely to drown if you wear a lifejacket as you are if you don't wear one. Perhaps we have never left the fantasy land of my opening preamble?

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