Home Parliamentary Business Committees

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Inquiry into Strengthening Australia's Relationships with Countries in the Pacific region

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Submission by

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Proposal for a

Pacific Safe Ferry Project:

Similar to the Pacific Patrol Boat Scheme

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Proposal for a

Pacific Safe Ferry Project

THE PROPONENT: Neil Baird is a semi-retired publisher of international maritime trade magazines, books and a website and organiser of maritime trade exhibitions globally (See: www.bairdmaritime.com). From 2015 to 2017 he completed a PhD at the Australian National Centre for Ocean Research and Security at the University of Wollongong. The title of his thesis was "Fatal Ferry Accidents, Their Causes and Prevention". This work arose from a more than thirty-year study of passenger vessel accidents and extensive published writing on that subject of which he is widely known as one of the world's leading experts..

Arising from his doctoral research, Dr Baird has completed several projects with INTERFERRY (www.interferry.org) , the international trade association of ferry owners, mainly through its associated FerrySafe project. He has presented to and worked with the International Maritime Organization (IMO) and other international bodies such as the China Maritime Safety Administration. At a Pacific Islands Forum/IMO conference in Port Moresby in April 2018 he developed the Pacific Safe Ferry Project idea. It was discussed there with all delegates, who unanimously liked the idea. The New Zealand delegates took the idea back to their government, which has already acted on it, see article on *Te Kaniva* attached.

Disappointingly, unlike his experience with the New Zealand Government, he has received no response from the two Australian ministers to whom he has presented his proposal.

PROPOSAL IN BRIEF: Given the success of the two iterations of the Pacific Patrol Boat Scheme, it is proposed that a similar scheme should be implemented to address the problem of dangerous domestic ferries in the Pacific region. Australia is globally renowned for its design and construction of safe, comfortable, economical and reliable ferries.

By the expedient of slightly reducing cash aid to Pacific Island countries, it would seem logical to set aside funds to design and build appropriate safe ferries in Australia for donation to national governments to be operated under their ownership. That ownership could be afforded ongoing support from Australian crew training, delivery, maintenance and repair organisations.

Instead of benefiting foreign companies such as Toyota, more Australian aid money would be spent at home. The island nation recipients would receive much better, safer, more economical and reliable ferries than they are used to. Both donor and recipient nations would benefit and there would be little scope for assistance corruption. A "Win Win" result for all concerned.

The ferries need be neither large nor particularly fast, just sufficiently seaworthy and fast enough to get out of the way of bad weather. Nor need they be expensive.

Probably two vessel types, one Ro-Pax and one Pax only, should be developed. All other aspects of their design and construction could be standardised and kept as simple as possible.

Australia has several very reputable firms of naval architects and ship builders that could readily handle such a project. It is also home to similarly reputable support organisations. It is suggested that their talents and skills be utilised to significantly improve the safety standards of domestic water transport among our archipelagic Pacific neighbours. That, surely, would be a good aid investment.

BACKGROUND TO PROPOSAL: Extensive further information is readily available for any interested committee members. However, the attached material published on www.bairdmaritime.com since August 2018 should provide adequate background and explanatory information with which to start:-

1. Safer ferries for the Pacific Islands, June 2018.

2. 2018 – Another bad year for ferry fatalities, September 2018.

3. Australian ferry exports flourish, November 2018.

4. Statistical analysis of safety of ferry types, December 2018.

5. Tokelau receives new school waterbus from New Zealand, March 17, 2020.

WBW Editorial June 2018

Safer ferries for the Pacific islands

In April I was fortunate to be able to participate in an excellent Regional Workshop on Ship Safety Management in Port Moresby, Papua New Guinea.
Organised jointly by the International Maritime Organisation (IMO), the Pacific Community (PC) and the National Maritime Safety Authority (NMSA) of PNG, it was one of the most productive, sensible and realistic conferences I have ever attended. Congratulations are due to all concerned with its organisation.

While the workshop overall was concerned with all kinds of vessel safety, it soon became obvious that domestic ferry safety was foremost in the minds of most participants. That is unsurprising given the Kiribati disaster in January that killed 99

people and the still recent (2012) *Rabaul Queen* sinking in PNG that resulted in 350 fatalities. Both vessels concerned were owned by serially offending operators!

As I discovered from delving into the Baird Maritime Passenger Vessel Accident database while preparing for my presentation, the Pacific islands have a terrible record for domestic ferry safety. Indeed, since 1 January 2000, the PC member states have a slightly worse fatality record than either Indonesia or the Philippines which are, along with Bangladesh, generally regarded as the most dangerous places for ferry travel on the planet. Obviously, this is compared on a per head of population basis. Absolute numbers are not quite so terrifying given the tiny populations of most of the island nations other than PNG.

Even more frightening is the news of the importation of an ancient former BC Ferries Ro-Pax ferry to Fiji and the looming threat of three more. It seems that "political interference" has been a factor in that project. The first vessel is entirely inappropriate to Fijian climatic, sea and economic conditions. Apart from being 63 years old, it was designed for operation in sheltered waters in a rich country with excellent maintenance facilities and generally high crewing standards. It also happens to be so riddled with asbestos that it could not be sold in North America, even for scrap!

It became obvious as the conference proceeded that political interference was a major problem in many of the island nations. While closely related to comparative poverty, it is a separate but significant factor that severely inhibits ferry safety. Of course, in unusually archipelagic and comparatively poor nations such as the Pacific islands, Indonesia and the Philippines, the major causes of domestic ferry fatalities remain, unsurprisingly, unseaworthy and overloaded vessels.

Given the shocking safety record of elderly monohull Ro-Pax ships in developing countries – they accounted for 32% of fatalities globally from 2000 to 2015 – there is no doubt that the sale of ancient Ro-Pax ferries such as that to Fiji should be banned. The neighbouring island nation of Tonga knows of their dangers from the bitter *Princess Ashika* experience. That elderly and wholly inappropriate Japanese Ro-Pax vessel sank in 2009 with 78 fatalities.

An analysis of the BMPVA database also clearly shows that multihull ferries, when properly designed, constructed and maintained, are infinitely safer than their monohull counterparts. Their fatality toll is a tiny fraction of that of monohull ferries on every basis of comparison.

It is, therefore, painfully obvious that new, or at least good second-hand, catamaran or trimaran ferries would be the answer to the safety woes of the island nations. They need not be fast nor complex or sophisticated, just safe, stable, buoyant, reliable and low maintenance. FRP or steel construction should be possible as well as aluminium.

The obvious problem with this proffered solution is relative poverty. The island nations cannot really afford such vessels or the all-important crew training that should accompany their introduction.

There is, however, an obvious answer to that. The island nations and, for that matter, Indonesia and the Philippines are all significant recipients of aid from richer countries. Of course, much of that aid is poorly directed and administered and much is overly aimed at gaining strategic advantage. Donor countries, if they carefully thought about it, could get much better value for their aid dollars.

In the May/June issue of sister magazine *Ausmarine* I recommended that Australia and New Zealand, as world leaders in the design and construction of fast multi-hulled ferries, should introduce the provision of **appropriate** ferries into their aid programmes.

Now, having participated in the Port Moresby workshop, I have thought further. Other rich nations around the Pacific Ocean such as the USA, Canada, Japan, Korea, China and Singapore could beneficially modify their aid programmes to incorporate the provision of appropriate ferries to the dangerous archipelagic nations described above. Not only would they benefit the island inhabitants and tourists, their generosity would start at home by providing business for their own naval architects, ship builders and maritime colleges.

Rather than funding inappropriate cultural centres, roads to nowhere and basket weaving classes that have little or no economic or social benefit, why don't those rich countries re-focus their aid programmes on something more practical and valuable?

Neil Baird.

Work Boat World – Editorial - September 2018

2018 - Another bad year for ferry fatalities

To the end of July this year there have been 635 known fatalities arising from 18 ferry accidents. In reality there have probably been many more. It is looking likely to be another very bad year. This, very disappointingly, is despite the ever-increasing efforts of INTERFERRY, the Worldwide Ferry Safety Association, the Society of Naval Architects and Marine Engineers, the Lloyd's Register Foundation, IMO and a number of national and regional government organisations to improve ferry safety. Their safety message is obviously failing to penetrate.

Of course, these fatalities continue to occur in the countries that have been the most dangerous for at least fifty years. Those fatalities involved accidents that affected 18 vessels in ten countries. Of those countries, eight are poor or comparatively poor while Thailand and the USA are significantly richer. The latter two, rather incongruously, remain among the most dangerous dozen.

Indonesia remains one of the three most dangerous countries and, so far this year has "top scored" with six fatal accidents taking 324 lives or more than half the total. The USA, India and Russia have each suffered two fatal accidents. As often happens, one ship owner has become a "serial killer". The Kirabati vessel *Butiraoi* that disintegrated with the loss of 99 lives was a near sister ship to a vessel owned by the same man. His other ferry, the *Uean Te Rao II* similarly disintegrated in 2009 killing 35 people. Both were appallingly badly designed, constructed and maintained wooden "canoe" catamarans.

Fifteen of the eighteen fatal accidents involved capsizes. That clearly means the vessels were unstable or overloaded, or as is usually the case, both. At least there is some good news in that so far there have been no collisions. As usual, though, the primary causes have been human error. Unstable, overloaded and poorly maintained vessels that were poorly designed and constructed in the first place are the common factor in all cases. That is exacerbated by dreadful seamanship that is usually in the form of continuing on in the face of bad and worsening weather.

The saddest thing about all this death and destruction, which is largely ultimately the result of poverty, is that in the remainder of the world ferries continue to become significantly safer and more efficient. They are also becoming ever more competently crewed and better maintained. Apart from the obvious problem of conventional, monohull Ro-Pax ferries, which have caused 32% of ferry fatalities over the past 20 years, there is little wrong with the design and construction of modern ferries. Naval architects and ship builders generally have much to be proud of.

So, what can be done to improve the safety of ferry passengers in poorer countries? In this magazine we have become somewhat blasé about an apparently endless stream of new and mostly impressive ferries and tour boats. We almost never hear of any of them getting into anything other than human induced trouble. The Austal built *Sleipner* and RDM's *Kilimanjaro II* are exceptions that come to mind. Both were involved in accidents that resulted in numerous fatalities but in neither case was any blame attributable to designer of builder. Major operator errors were to blame both times.

Those two tragic exceptions very convincingly prove the rule that well designed and built modern ferries are very safe if properly operated. They are capable of carrying out almost any passenger carrying task anywhere. They can do so safely and economically.

There are two obvious factors that preclude their introduction into and safe operation in poor countries. The first is cost and the second is recruiting and training

competent crews to operate them. Neither of those problems are impossible to overcome. Indeed, interestingly, the Philippines, which traditionally has been one of the worst two countries on the planet for ferry fatalities, only produced one of this year's fatalities so far. The Philippines, mostly by its own efforts, is significantly improving both the quality of its ferry fleet and the competence of the people who operate them.

The Philippines is showing that even a comparatively poor and politically volatile country can make significant safety improvements. Even more notable is the fact that Bangladesh, which traditionally has been the most dangerous country for ferry travel, has not recorded a fatal accident so far this year. Neither the Philippines nor Bangladesh receives any significant foreign aid as far as ferry safety improvements are concerned. They pay for what they do achieve themselves.

While rich country aid would certainly be valuable, those two countries have proved that safety improvement can be self-generated. Probably the best solution would come from a combination of aid and self-improvement. That might assist even the poorest of countries to improve the safety of their ferries by obtaining the kinds of vessels, equipment and crew training that we take almost for granted in the pages of **Work Boat World.**

Neil Baird.

Ausmarine editorial November 2018

Australian ferry exports flourish

It may not be quite a boom but, nevertheless, exports of Australian designed and built ferries and ferry designs are flourishing. The major yards Austal, Incat and Richardson Devine Marine are all very busy with order books very near full. A large proportion of those new ferries are for export.

The global market for multihull ferries, both Ro-Pax and passenger only, is very strong. Apart from the also excellent Damen Shipyards of the Netherlands and Brodrene Aa of Norway, there is little foreign competition in that market. In any case, even if the vessels are not built in Australia, they will very likely have been designed here. Indeed, One2Three Naval Architects, Incat Crowther and Sea Transport Solutions, among others, are all seeing numerous ferries built to their designs in the United States, the United Kingdom, China, Indonesia, the Philippines and elsewhere. Expatriate Australian naval architect/shipbuilder Paul Birgan is busy in Thailand with some of his very economical vessels even being delivered to Australian owners.

While it is not quite as hot as in the mid-nineties boom, it is an exciting time and this market seems to have longer-term substance. Many orders are from repeat customers but, increasingly, new customers are following their lead as they realise how successful the Australian ferries are in operation. The market is now truly global

with a wide variety of configurations being delivered to a large number of countries on all continents except Antarctica – perhaps it will be next!

The current generation of ferries are highly refined with all the major builders and designers now having been in business for at least three decades. They know what they are doing and can build upon a vast body of knowledge that has been accumulated over that period. There is also now a significant body of owners with considerable experience of operating the multihull fast ferries that Australia

specialises in. Indeed, there are even a couple of owners who specialise in refurbishing and re-using second-hand Australian ferries.

The latter seem to be doing very well. Aluminium ships, if properly maintained, have very long lives and are relatively inexpensive to refit, re-furbish and modify. They can even be restored after suffering a major guided missile hit!

As well as refinement, Australian builders and designers are continually making production improvements that reduce both costs and delivery times. The aluminium fast ferry business has become pretty slick of late.

Gradually, the ferry owning world is awakening to the many distinct advantages of multihull ferries in terms of safety, economy, comfort, reliability and passenger preference as well as speed and turn-around times.

With around 2,000 ferry passengers dying in accidents annually, multi-hulled ferries, which have by far the best safety record of all ferry types, are gradually being acknowledged as the way to go. The Baird Maritime Passenger Vessel Accident database tells us that conventional, monohull Ro-Pax ferries, for example, are responsible for 33 per cent of ferry fatalities annually while multi-hulled ferries account for well under one per cent. Australian ferries have an almost unblemished record. The two significant fatal accidents involving them were both clearly due to operator error.

The Philippines, for example, which until recently was one of the world's most dangerous places for ferry travel, is changing dramatically. A new breed of Filipino ferry owners such as Archipelago Fast Ferries is changing the face and reputation of Philippines ferry travel with Australian designed catamaran ferries. Indeed, the Philippines has become a building hub for Australian designed fast ferries with Austal rapidly expanding its operation and output at its yard in Cebu. Other local builders are following Austal.

Most Chinese catamaran fast ferries have been designed or built in Australia, sometimes both. The Pearl River delta is replete with many dozens of them and many more are currently under construction.

Scandinavia, the United Kingdom, the Mediterranean, North, Central and South America, Tanzania, Nigeria, the Gulf and much of Asia are showcases of hundreds

of examples of Australian designed and/or built catamaran and trimaran ferries. There will be many more there over the next few years.

Although you wouldn't know it from the way the Australian government treats the aluminium ship building industry, Australian designed and built ferries have become an important export earner for the country. It is an industry with a distinct competitive advantage which the current low dollar enhances very effectively. It is a great but largely unappreciated contributor to the Australian economy. Long may it remain that way.

Neil Baird

Statistical Analysis of Safety of Ferry Types

By Neil Baird PhD

November 2018

Most vessels, including ferries, are at least adequately designed and built. The naval architecture profession and the ship building industry have little to be ashamed of. However, there are certain vessel types that are overly represented in the casualty statistics. Conversely, there are other vessel types that barely register in the casualty statistics.

It is important to note here that certain vessel types are inherently more vulnerable to human error than others. Obviously, those that are more vulnerable to human error are generally the same ones that are overly represented in the casualty statistics.

They, of course, are predominantly Ro-Pax and motor banca type ferries. Unfortunately, they also tend to be the vessels that are badly modified, badly maintained and badly operated. The most obvious of these are conventional, monohull Ro-Pax ships. They are usually the largest ferries so, when they are involved in accidents, they tend to lead to large numbers of fatalities.

Conventional monohull Ro-Pax ferries are estimated to represent between five and eight per cent of the total global ferry fleet yet, over the 16 years from 2000 to 2015, they were involved in 16 per cent of fatal ferry accidents. Those accidents resulted in a disproportionate 33 per cent of ferry fatalities over the same period.

It is impossible to determine how many motor banca ferries exist. However, the BMPVA database records their involvement in 13 "known" fatal accidents over the 10/11
same 16 year period. They resulted in 378 deaths, an average of 29 deaths per accident. Given their flimsy construction, indeed, since most are literally held together with string, that is unsurprising. Fortunately, they normally carry very few 10 passengers. The worst "known" motor banca accident was in 2015. It involved the *Kim Nirvana* that disintegrated and capsized in Ormoc Harbour, killing 113 people.

Impressively, the present Philippines government has banned wooden motor bancas from carrying passengers from the end of this year. Modern, strongly built FRP boats are being encouraged to replace them. That should be a significant improvement. Unfortunately, motor banca type boats continue to operate in large numbers in Indonesia. Their accident and fatality records remain obscure.

On the other hand, modern catamaran ferries, large and small, both fast and medium speed, Ro-Pax and Pax only, of which the global fleet is about 1,200 vessels, have an almost impeccable record. They were involved in far fewer than 0.5 per cent of fatal accidents and an even smaller percentage of fatalities. Further, 100 per cent of that tiny number of fatal accidents were clearly due to human error.

Apart from being inherently more stable, properly constructed modern catamaran or trimaran ferries have at least two multi-compartmented hulls and separate engine rooms. They have at least double the redundancy, for safety purposes, of conventional monohull ferries. Modern catamaran ferries have not been known to capsize or sink. No trimaran is known to have been involved in a fatal accident.

The statistics so far this year (2018) have been little different. No modern catamaran ferries have been involved in fatal accidents. That ignores the fatal accident in Kiribati that involved a double wooden canoe with a very weak bridging structure made of logs – hardly a modern catamaran!

There have, though, been 27 fatal accidents that have led to 983 fatalities. Of those, seven, or more than 25 per cent involved elderly, conventional monohull Ro-Pax ferries. They resulted in 335 fatalities or 34 per cent of the total. Situation tragically normal!

TOKELAU RECEIVES NEW SCHOOL WATERBUS FROM NEW ZEALAND

By **Baird Maritime** - March 17, 2020

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The Pacific Maritime Safety Programme yesterday celebrated the completion of a new school boat for the children of Tokelau, an island group in the South Pacific that is a territory of New Zealand, with a blessing ceremony attended by around 25 members of the South Island's Tokelauan community.

The boat, *Te Kaniva*, was blessed ahead of its journey to the atolls where it will be formally launched and blessed again in its future home of Fakaofo.

Children in Fakaofo have to cross a lagoon each day to get to school and the new boat will provide them with safe, reliable transportation.

The 12.5-metre school boat was built by Icon Custom Boats in Christchurch and was jointly funded by the Government of Tokelau and the Ministry of Foreign Affairs and Trade. The PMSP supported