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The 2019-20 summer bushfire on the New South Wales south coast caused massive damage to public and private property, bushland and livestock. The author, now the Shoalhaven Recovery into Resilience Project Co-ordinator, provides personal insights into the recovery effort and the follow-on path to resilience and future readiness. He discusses futuristic scenarios and alternative pathways and concludes by describing the biggest threats now faced in the aftermath of the bushfires.

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With limited guidance in the literature on leadership and resilience in a crisis, Dr Robertson has managed the Coronavirus Disease 2019 pandemic in Western Australia based on his prior experience of disaster management. Herein, he describes how he did this. He recounts the mistakes made and lessons learned as a guide to the management of future crises. Decision-making involves taking risks and you need to understand your risk appetite and that of those to whom you report.

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Resilience embraces crisis prevention and mitigation, dealing with crises decisively, and then societal rebuilding, repairing, reconstructing and healing. The New South Wales government established Resilience NSW in 2020 in the wake of the state’s worst ever bushfire season to guide the preparation for and recovery from future natural disasters, disease epidemics and the like. Herein, the Commissioner for Resilience describes the 2019-20 bushfire crisis and recovery processes, stressing the importance of emotional resilience and social cohesion.

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AI at War provides a practical understanding of artificial intelligence (AI) and its application to warfare, especially naval warfare.

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Corporal Daniel Keighran, 6th Battalion, Royal Australian Regiment, was awarded the Victoria Cross for his actions during the Battle of Derapet, Afghanistan, on 24 August 2010.

FRONT COVER:
A Victorian State Emergency Service vehicle drives off an Air Force C-17A Globemaster III aircraft, after being delivered from Melbourne to Geraldton in Western Australia, along with four other vehicles and stores on 19 April 2021 to assist with the clean-up in the wake of Tropical Cyclone Seroja. The theme of this issue of United Service is preparing for, managing and recovering from crises and disasters. [Photo: LSIS Kieran Whiteley, Department of Defence].
President’s Column

This is my second opportunity to provide a message for our Journal. I restate my belief that the excellent quality of United Service is a true highlight of the Institute, and I am committed to ensuring that it continues to both flourish and evolve.

As we slowly emerge into a post COVID-19 world and face Australia’s more unstable geopolitical environment, it is even more important that we make very considered and strategically relevant decisions that contribute positively to the future of the Royal United Services Institute (RUSI) both in New South Wales and nationally. Here follows a selection of my ideas on actions we should take.

• We need a very strong and effective RUSI nationally, so that we can effectively relate to and influence our Canberra-based senior politicians and the Australian Defence Force leadership, to support our role of informing debate on defence and security issues.

• The community’s acceptance of online communications and activities means that any RUSI activity or publication now can be widely accessible and can reach a global audience.

• We need to clearly differentiate common-interest, national issues from local or regional issues, and then design different communication platforms to serve both aspects. For example, United Service could be readily adapted to serve our national interests, leaving more frequent regional media (e.g. state-focused bulletins) to deal with local interests and concerns.

• We could then seek contributors and influence viewpoints from the wider global community and still target and serve our local interests and needs.

We need to constantly improve our journal’s relevance to Australia’s emerging strategic environment. Accordingly, I invite your ideas to assist us meet challenges such as:

• developing and presenting United Service so that it becomes a valued resource focused on meeting our RUSI national interests and needs;

• reinforcing relationships among the state-based united services institutes – the constituent bodies of the Royal United Services Institute for Defence and Security Studies–Australia – so that they support and contribute to the journal, whilst retaining their own effective regional communication systems;

• encouraging defence policy makers to support the journal as an asset; and

• encouraging defence industries, university networks and professional groups to contribute to the journal as a medium for contesting and resolving ideas.

I look forward to finding opportunities for improving United Service, and I invite your suggestions and your involvement. Please contact me on mhough5@gmail.com.

Michael Hough
Afghanistan at a crossroads

The inauguration of the new Biden administration in Washington on 20 January 2021 is already being felt on the world stage, no more so than in Afghanistan.

At the conjunction of trade routes across central and south Asia, Afghanistan has been fought over for more than two millennia (Docherty 2007). The United States and its allies are simply the latest in a long line of foreign invaders to realise that there is no military solution to their Afghan problem.

With guerrilla warfare in Afghanistan at a stalemate after 18 years, the former Trump administration had sought to remove all American troops by the end of Trump’s first presidential term. The administration negotiated a peace agreement with the Taliban which was signed in Doha on 29 February 2020. The Afghan government and the United States’ allies (including Australia) were not parties to these talks.

The United States-Taliban agreement set out a provisional timetable for the withdrawal of foreign forces from Afghanistan, providing the Taliban prevented international jihadist groups, such as al-Qaeda, from using its territory to attack the United States or its allies (Fazl-e-Haider 2021). It also committed the Taliban to begin direct negotiations with the Afghan government and other Afghan leaders to try to reach a political settlement.

Following the agreement, attacks on international forces stopped, but fighting with Afghan security forces continued in rural areas, but less so in major cities.

The provisional timetable for withdrawal of foreign troops provided for a full withdrawal of all foreign forces by 1 May 2021 if the Taliban kept its commitments.

By January 2021, the North Atlantic Treaty Organisation (NATO) and its partners had some 10,000 personnel still training, advising and assisting the Afghan National Defence and Security Forces. They included some 2500 United States and 80 Australian troops.

Current Situation

A political settlement is dependent on the Afghan government/Taliban negotiations which began in Doha on 12 September 2020. The Taliban has been uncompromising, despite some government concessions, and a conclusion has not been reached. Human rights – including the right to education and political participation won by Afghan women after the former Taliban government was overthrown by NATO forces in 2001 – and prisoner exchange issues are proving intractable.

The Taliban appears to be pursuing a two-phase strategy: first, to remove all foreign forces from Afghan soil; and then, to overthrow the Afghan government and restore Taliban rule. If so, the current negotiations with the Afghan government are irrelevant. It seems that the Taliban is following the proven strategy adopted by the North Vietnamese during the Vietnam War of ‘talking while fighting’ and they are unlikely to accept any form of power-sharing with their opponents.

NATO’s European partners were never happy with the 1 May 2021 withdrawal deadline, being concerned that it would hand victory to the Taliban in a re-run of America’s withdrawal from Vietnam in 1973. Reuters reported on 31 January that several NATO member countries had expressed reservations about the deadline, with some in favour of prolonging their stay. Any unilateral decision by NATO, however, could have escalated tensions and restarted conflict with the Taliban, derailing the already fragile peace process.

A United States Congressional study group on Afghanistan recommended in February extending the deadline, noting that withdrawal should not be based on an inflexible timeline but on fulfilment of commitments to peace by all parties – the United States should not simply hand a victory to the Taliban (Kheel 2021).

On 18 February 2021, NATO Secretary-General Jens Stoltenberg announced that NATO defence ministers had deferred their decision on troop withdrawal to enable the Biden administration to complete a policy review, reiterating that the withdrawal date was conditional on the Taliban meeting its commitments (Herszenhorn 2021). In response, the Taliban warned the NATO-led forces against extending their presence.

Having completed its review of the Doha accord, the Biden Administration announced on 13 April that all United States forces would be withdrawing unconditionally from Afghanistan before the 20th anniversary of the 11 September 2001 al-Qaeda attacks on New York and Washington. This would finally end America’s longest war, despite mounting fears of a Taliban victory. America’s NATO allies and Australia immediately advised that they would conform to this timetable. While its allies received prior notification, it is probable that the United States’ decision was presented to them as a fait accompli, rather than the withdrawal date and conditions being mutually agreed. This is a salutary lesson for future potential foreign entanglements with America.

The Future

While the Biden administration may have wished to revise the agreement with the Taliban, it also wanted to end the war in Afghanistan. The war will now end for the United States and its allies by 11 September 2021, but it will continue between the Taliban and the Afghan government and the fate of Afghanistan now hangs in the balance. Many observers predict that the Taliban will be the victors (e.g. Wright 2021) and will re-install its
Islamic fundamentalist government in Kabul in due course. Other observers (e.g. Kilcullen 2020) are less certain of the likely geographic extent of any Taliban victory.

Indeed, Kilcullen (2021) points out that, even at the height of their power, the Taliban never controlled the north-western third of Afghanistan, or held uncontested influence over the east and south. They are inflicting serious losses on government forces, and these will rise as coalition troops leave. Taliban troops may capture Kandahar and other capitals of Pashtun-majority provinces, but Kabul and the old Northern Alliance strongholds in Tajik-majority and Uzbek-majority regions of the north would be a different matter. Kilcullen also sees Biden’s decision as potentially strengthening China’s role in Afghanistan.

Further, while Western troops will be withdrawn from Afghanistan in September, America may continue a proxy war there in support of the Afghan government. The war may morph from boots-on-the-ground stabilisation into a proxy campaign much like the wars in Yemen, Syria, Somalia or the Sahel region of Africa: light on ground troops, but heavy on drones, air strikes and the occasional long-range special operations raid – heavy, too, on civilian casualties (Kilcullen 2021).

**The Cost of the War**

Over 39,000 Australian service-people have served in Afghanistan since 2001. There have been 41 killed and 261 wounded so far. Uncounted numbers have experienced or are experiencing post-traumatic stress disorder and many more such cases may emerge. There are consequential impacts on casualties’ families. Estimates of the direct financial cost of the involvement to date range from $8.6 - 11 billion. The associated veteran welfare costs and pensions to be paid to widows and dependants will continue for some 90 years. There also has been reputational damage to the Australian Defence Force as a consequence of alleged war crimes committed by Australian special forces in Afghanistan.

The suffering and costs borne by the Afghan people remain unquantified but are estimated to exceed 150,000 dead combatants and civilians. If peace and survival are not part of the equation, many Afghans, especially women, will have no choice but to flee (Schmeidl 2021). Can the world accommodate another major refugee crisis, especially with the COVID-19 pandemic still rampant in Afghanistan and globally?

**Comment – An Ongoing Proxy War**

We agree with Kilcullen (2021) that the Biden administration will probably continue the war via surrogates on the ground, supported remotely by air and drone strikes. This would allow the United States to concentrate on domestic reconstitution and Indo-Pacific security. It is now inevitable that Russia and China will fill the void, at least to some extent. This may be a useful tactic, as they may be drawn into consuming large amounts of troops, dollars and focus in attempting to deal with the quagmire of the Middle East region. In any case, in Yemen and elsewhere, Saudi Arabia and the Gulf States have recently demonstrated that they are now prepared to commit funds, aircraft and troops to stabilise the region.

It is unfortunate that repeated campaigns have shown that the United States does not have the tenacity and resilience to conduct successful stabilisation operations, especially as Australia has shown, albeit on a smaller scale, how to succeed in such operations in Bougainville, Timor and the Solomons. You have to deploy expecting to be there for at least 10 - 15 years and possibly 20+ years. You also need to have a ratio of 15 soldiers/policemen to every 1000 of the civilian population. Anything less than this level of commitment is strategically dysfunctional and inept, leading to the expenditure of vast amounts of funds and lives to no productive or ethical purpose.

The United States withdrawal also can be seen as a failure of moral and ethical leadership, as well as ideology, in that the immense personal suffering of the people in the region and by the United States and its allies will have been dishonoured. This is another tool that China and Russia can use to advance the argument that the West is ethically bankrupt, and that democracy simply does not function efficiently today.

In such a situation, sending Australian forces to participate in a new, never-ending, surrogate war in Afghanistan would not be viable. Rather, we should stay out of the region, but honour our commitment to the people who worked with our forces in the various countries, and give them and their families sanctuary, as well as priority status for expedited immigration to Australia. Otherwise, who in the future would work with us?

David Leece and Ian Wolfe

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**References**


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*David Leece* and *Ian Wolfe* are members of the Institute’s Special Interest Group on Strategy. These are their personal views.
In the spring and summer of 2019-20, there were severe bushfires in much of south-eastern Australia. I reside in the Shoalhaven local government area (LGA) on the New South Wales south coast some 200km south of Sydney and, following the fires, was appointed Local Recovery Co-ordinator and Chair, Shoalhaven Bushfire Recovery Committee and now that its work has concluded, have become the Recovery into Resilience Project Co-ordinator and Project Team Chair. In this paper, I will present some personal perspectives regarding the now-concluded recovery phase and the ongoing transition-into-resilience phase of the Shoalhaven bushfire.

2019-20 Bushfire in the Shoalhaven
The 2019-20 Shoalhaven bushfire commenced on 27 November 2019 at Currowan in the far south of the LGA. By the time the fire was extinguished on 8 February 2020, it had destroyed some 320,385ha, 82 per cent of the Shoalhaven’s land area of 4600km². Most of the destroyed land (80 per cent of the LGA) comprised national park, forest or coastal parkland. The residual 2 per cent was urban and agricultural land. Some 1890 homes were saved, but 309 homes and 170 buildings were destroyed and other infrastructure was destroyed or damaged – repairs took a long time. Livestock losses included 307 dairy cattle (from one of Australia’s largest dairy producing areas), 179 beehives destroyed and 14,200 beehives affected – significant, as bees play a key part in vegetation and flora reconstitution after a fire.

Personal Observations
Throughout the bushfire, it was evident that the worst of nature brings out the best in humankind. There were some extraordinary deeds of kindness across the whole community. With backs to the wall, Australian culture is to support and help a mate. More specific observations follow.

Firefighting capability
The capacity to fight a fire in an area the size of the Shoalhaven is limited. The Shoalhaven is diverse and includes the world’s second largest fluvial canyon; beautiful areas around The Pigeonhouse mountain and the Sassafras area; village hamlets on the coastal estuaries; and a hinterland of amazingly rugged, mountainous terrain. Many of the fires were in inaccessible places. The Currowan fire itself started in inaccessible terrain. In some instances, it was a matter of waiting for the fire to reach a place where you could harness and control it.

We have much firefighting capability, but we need to start thinking more broadly about what additional equipment we should invest in across the community. Current equipment is not of a consistent standard or age as found by the Royal Commission into Natural Disaster Arrangements (Binskin et al. 2020).

Communications and electricity
Communications and power are huge issues on the south coast. There are few terrestrial masts to transmit mobile phone signals. During the disaster, people attempted to escape from the fire by car. They needed petrol. If, however, the power was out, petrol stations could not pump petrol. If by chance they could pump petrol, the masts may have been out and so they could not bill customers for it because the point-of-sales machines (which allow credit/debit card payments) were down. In many cases, both pumps and masts were out-of-order.

The other problem is how under-serviced the Shoalhaven is. Under normal circumstances, it suffers significant power and communications outages as a
many additional people there for their holidays. Hence, the available bandwidth gets saturated very quickly in the summer when you have many additional people there for their holidays.

Roads and rail
There is only one main road in and out of the area, the Princes Highway. If it gets blocked, problems arise not only in evacuating people but more importantly getting assistance. If the Princes Highway is impenetrable from anywhere south of Albion Park, the only way around is to go inland to the Hume Highway, but the narrow bridge at Kangaroo Valley renders this route impractical. The Princes Highway is a one-road in and out route servicing the whole southeastern seaboard of Australia, including a crucial piece of defence infrastructure – the main armaments depot for the Royal Australian Navy at Eden. Eden has no rail head and only one road in and out. If the wharf is out-of-service, you are restricted to lighters. It is a significant shortfall.

Unreliability of market-driven and census-driven solutions
The depth, dependability and reliability of market-driven solutions have to be questioned. Commercial enterprises will only invest where they are likely to achieve a return on investment. Their primary loyalty is to shareholders. Take the example of a telecommunications provider (telco). They base themselves on the market. Most of the data which commercial operators and even governments rely on is census data. The census occurs once every four years in mid-August (in the middle of winter) when small coastal hamlets have a small population. This is not so in mid-January when a hamlet population of 200 can rise to 5000. That means the number of masts that a telco is going to erect, and the number of main roads, police, hospital beds and other services that governments are going to provide, will be determined by the disposition of the population as revealed by a census taken when the population is at its low point, not its high point. If you are a commercial company, you will prefer to invest where there is a large, concentrated population as in Sydney rather than a small, dispersed one as in the Shoalhaven. This is not unique to the Shoalhaven.

A difficulty in employing market-driven solutions is in deciding what is actually needed. In the Shoalhaven, there is only sufficient telco bandwidth to service a population of about 96,000 and there are only three main transmitter masts along the Princes Highway between Kiama and Batemans Bay (there are several repeater masts). Hence, the available bandwidth gets saturated very quickly in the summer when you have many additional people there for their holidays.

Reliance on social media
Social media can be a strength, but also a significant weakness and threat. It enables people to transmit information which may not be accurate. During the Shoalhaven fire, we had some extraordinary scenes. People had their backs to the sea, they could not see the sky and the smoke made breathing difficult, they could hear the fire (it was very loud), and the heat was unbelievable. The power had gone down, the ‘phone apps’ were not working and could not be refreshed because of bandwidth saturation or mobile towers going down. People were faced with total sensory deprivation and whatever they heard or saw gained traction in their perception of what was happening.

Social media can be helpful in that regard, but it can also be extremely dangerous. Some people were using their own scanners to listen into the Rural Fire Service (RFS) teams, many of whom were from out-of-town, so their local geographic knowledge may have been poor. When they sought assistance to identify where they were, there were folks with scanners recording that information and then putting it onto social media. That generated a lot of discomfort for readers. It also led to an unfair public perception of exactly where RFS resources were deployed and what they were doing to help. This fed into community expectations about how the fire should be managed, even though perceived needs were not necessarily in line with actual needs. This issue needs to be addressed.

Recovery Committee Achievements
A notable success of the Recovery Committee was waste management. We were able to take just under 18,000 tonnes of non-contaminated waste (i.e., not asbestos or chemicals) off the fire ground and recycle or repurpose all but 214 tonnes of it at the West Nowra Waste Management Depot. Had we filled the domestic waste cells with recyclable material, we would have run out of cell space in the depot and, within 2-3 weeks, municipal waste would have had to be sent elsewhere costing c. $1 million a month. It was a huge win.

There were incredible environmental efforts made across the Shoalhaven to restore the hinterland national parks, state parks, estuaries, waterways, urban areas and coastal villages.

We succeeded in replacing destroyed bridges with bridges of better quality – four in particular. We used a regional design house, used components made in Newcastle, and then put the bridges together on-site using local companies. I saw a three-lane bridge being assembled by five men, one with a crowbar, plus a mobile crane driver, in the space of a morning.

The Shoalhaven registration process was excellent, despite significant challenges in understanding who had been fire-affected and to what extent, and who were or were not landowners. Shoalhaven City Council wrote to all registered landowners who had...
paid rates over the preceding 12-18 months. Notwithstanding all the available electronic connectivity, what worked was a posted letter to registered ratepayers who owned the properties so as to obtain approvals to start the clean-up to allow rebuilding.

A recovery helpline for Shoalhaven residents with problems was staffed with four people from eight till five, five days a week. When they were not receiving calls, operators were making follow-up calls to everybody who had registered. Other initiatives implemented included mobile recovery hubs and collating information tailored to specific areas. Issues that were unable to address were referred to other agencies.

The COVID-19 pandemic controls hit the Shoalhaven in March 2020. On Easter Monday, we shifted almost everything that we were doing in-person to the virtual domain of either phone or email contact with the Council directly. We pioneered a couple of webinars, one of them to invite local businesses to register so we could use them in the clean-up. During a ‘Get-Ready’ campaign, we used webinars and Facebook live-streams, on one night attracting 13,000 visits for a 45 minute presentation, demonstrating that we could reach many more by webinar than we could have by several concurrent community hall meetings.

We also had good inter-council co-operation. We had 42 staff from other councils assist us with routine local government duties, which enabled Shoalhaven staff to be diverted onto higher priority repair tasks.

The Australian Defence Force (ADF) was a terrific help. We had 80+ people operating in the Shoalhaven for about 6 weeks. ‘Grey nomads’ of the BlazeAid organisation also assisted. For the price of a sausage roll, they repaired fences and replaced all sorts of things. Many other agencies also helped.

The Future

Now let us consider the path from recovery to resilience and future readiness (SCC 2020). The way we looked at such issues over the past 50 years is not going to work today. We need to start thinking in terms of futuristic scenarios and adaptive pathways. For example, in May 2019, Griffith University led a study in the Shoalhaven on community-led resilience. It utilised futuristic scenarios and alternative pathways. One event considered for study was a pandemic. It was dismissed as too far-fetched to be examined – interesting, because 10 months later we were in the middle of a pandemic and we still are.

There are some really important concepts to grasp in futures thinking. One is the importance of understanding what is a threat and what is a vulnerability. If you address vulnerabilities, the threats largely look after themselves, because the more effective you are in addressing a vulnerability, the less likely a threat is to gain traction. It may do so, but you will be ready for it.

The second concept is cause and effect. We do a lot of managing effects, so when we see a problem, the tendency is to fix the problem. But if you do not address the cause, it most likely will happen again. Now that goes for everything, including the realities of a changing weather pattern which (in other than La Niña times we are experiencing now), in our part of the world, dries the bush out and generates a great deal of fuel to burn. It then becomes a risk management discussion about what we may be able to do to minimise or mitigate the effect. If the answer to that is there are things we can do, then we had better start thinking about them and roll our sleeves up!

The final concept is third-order consequence. Again, because we tend to look at effects and deal with those, we do not necessarily give too much thought to the second-order or the third-order consequence of not addressing the cause.

An additional concept is that, if recovery is to lead into resilience and future readiness, it is really essential to have the right information — authoritative information and timely information flow.

By way of illustration of these concepts, I am now involved in the Recovery into Resilience Project which is establishing local information hubs at 22 Council sites across the Shoalhaven. Each hub, in effect, will be an electronic notice board connected directly to Council’s Emergency Operations Centre (EOC). A citizen will be able to go to the local village hall, have a look at the screen and see what is happening at the EOC. If there is nothing happening, the screen will be a lovely pattern. If there are things happening which are of importance during times of emergency, you will be able to see what the emergency controller is seeing. We plan to make those a two-way communications path for the exchange of intelligence between the community and the EOC. We will do this preferably using a system which employs satellite communications and which is not vulnerable to a loss of power, such as a system which uses solar power coupled with battery storage, making it autonomous. Such a system would take out three of the potential failures — a lack of authoritative information; a loss of power; and a loss of communications.

We have obtained some state and federal government funding to develop such a system. We hope it will become a real-time ‘noticeboard’ on a 140cm screen powered by the sun and connected to the EOC by satellite. There are challenges in getting that established, but it illustrates what the right information and timely information flow are about. If you do not have that, people cannot make decisions on their own next steps. Chapter 9 of Binskin et al. (2020) addresses the issue in more detail.

Power and communications are everything. They affect information flow, community awareness, and community health and well-being. When you have your back to the sea and smoke reduces visibility, if you are...
devoid of any sort of communication as well, it is not a good place to be and that really frightens people.

The final issue about recovery, resilience and readiness, is community ownership. Communities need to ramp up their involvement and rethink the time-honoured Australian tradition of believing the government or the council is responsible. This community involvement has to be tactically focused at a level of response which ultimately will bear the full brunt of what needs to change.

Conclusions

Here are my thoughts about the biggest threats we face in the aftermath of the bushfires.

The first threat is the view that everything now is okay – we are back to normal. I despair when I hear the COVID-19 pandemic being referred to as “back to normal”. The COVID health orders which may lock a place down from time-to-time are not a punishment. Rather, we do not have the capacity or the infrastructure to deal with the results of a pandemic which is allowed to run its course. If you doubt that, look to the United Kingdom, Europe and the United States. Whole trenches of people being buried, hospital corridors completely full, lack of respirators, having to triage who you are going to treat or not. I doubt we are going to see ‘normal’ for some time in all sorts of areas: bushfires, floods or pandemics. We have just got to be ready ‘to roll with the punches’.

The second threat is the concurrency of emergencies, such as bushfires and pandemics. Community expectation can be an issue here. Certainly, we need more evacuation centres, but we have to be wary. The reason for accurate communication and information flow is so that we can make the right decisions; and, if one of those decisions is to evacuate, to actually evacuate.

A reliance on the old-style evacuation centre where one goes to have a cup of tea, something to eat and meet friends, does not stack up in the context of a pandemic. In January 2020, a local civic centre had a population of about 1400, all in sleeping bags on camp stretchers, mostly travellers from out of town. You just need a few that are contagious and overnight you have a sizable infection problem. The Shoalhaven Hospital has about 30 emergency beds and probably half-a-dozen respirators. You would fully utilise this capacity in about the first five visits and we may not have the ambulances to get patients hospital. So the concurrency of emergencies has to be considered as a third-order consequence.

If we evacuate, it would not make sense if our firefighters were using shared or pooled equipment. They would need their own kit. They do, but these are the sorts of things we have to start looking at – adaptive pathways to start thinking about.

Third, there are no ‘silver bullets’. There is much expectation of big technological solutions. I am not sure that we should be wedded to that path. For example, if we modified some ADF aircraft to become fire bombers, but we were reliant on imported fuel and/or fire retardants, we might find ourselves with ‘a beautiful white stallion but no horseshoe nails’.

The fourth threat is our reliance on market-driven solutions. There are some things which a nation should own; there are some things a nation must control; and there are some things a nation must be ready and willing to use, and if necessary lose, and that includes military equipment. So a market-driven solution, such as having a fuel reserve in another country like the United States, is not an answer to the need to have fuel reserves in Australia. Having assets that we borrow to achieve just the basics in life is not an answer. I am not saying we have to make everything here, but we should be making more and we should be less reliant on the market providing our needs in a timely manner.

The fifth threat is expectation management. I get disheartened, as do many of my former ADF peers, when I see young sailors, soldiers, airmen and air-women being used in hotel foyers to push luggage in quarantine circumstances or to feed wildlife in the bush following a bushfire. Some say the ADF is there for one thing only – to fight a war. Adaptive pathways, however, may require the use of highly specialised and technical service people for different tasks in an emergency. With imagination, doing so can be made good training for a military context, such as practising delegated command responsibility. That, above all else, is about futuristic scenarios and adaptive pathways.

Finally, we have seen in recent times that you can disrupt someone’s life effectively without firing a shot. We have to start thinking about those disruptive elements and what alternative pathways we can apply to continue to work in spite of them.

The Author: Following a 39-year career in the Royal Australian Navy which included command of the Fleet Air Arm, Commodore Vince Di Pietro AM CSC RAN (Ret’d) was a Chief Executive in defence industry before assuming his current role in disaster recovery at Shoalhaven City Council, Nowra, New South Wales. He has also served on not-for-profit community and government boards, including The Sir David Martin Foundation. [Photo of Commodore Di Pietro: the author]

References


As Western Australia’s Chief Health Officer, I currently am responsible for managing the coronavirus pandemic within Western Australia. In this paper, I will address leadership and resilience in a crisis based on my experience in managing the pandemic.

**Coronavirus Disease 2019**

Coronavirus disease 2019 (COVID-19) has been with us since the beginning of 2020. It is caused by a small virus in the coronavirus family, viruses that commonly occur in bats and similar animals. COVID-19 mainly expresses as a respiratory illness with a fever, a dry non-productive cough and a headache. It can progress into pneumonia and, in a small percentage of cases, to death. There are no specific antiviral treatments – some have been tried but they did not work. The best approach so far has been symptomatic management, but vaccination is now possible also.

This disease was first described in Wuhan City in Hubei province, China, in late December 2019. Most speculation is that it is a wild virus from bats, possibly horseshoe bats, and may have come from wet markets where these animals are sold, although some recent studies have discounted that hypothesis. Others speculate that the Wuhan Institute of Virology (WIV) may have been the source as it was doing research on coronaviruses at the time. There are, however, many unanswered questions and the origin remains uncertain.

The Wuhan outbreak was declared a public health emergency of international concern on 30 January 2020. The virus spread from China to Spain and Portugal and, by 14 April, was a global phenomenon. Today, the pandemic remains a crisis, particularly in the United States, Brazil, parts of Europe, parts of Southeast Asia and India. The number of cases continues to accumulate. The United States, France, the United Kingdom, Brazil and Italy are some of the worst-off countries and, as of 27 March 2021, there had been over 126 million cases diagnosed, including 2.77 million deaths, worldwide. In Australia, there had been just over 29,000 cases with 900 deaths. So, it is an extensive disease that impacts on us all.

In Australia, we imposed travel restrictions on entry to Australia from China on 1 February 2020 and subsequently from all other nations. We had a first wave of COVID-19 infections towards the end of March into April 2020, then a second wave in winter, largely in Victoria, with a few cases in other states. We have had no further waves over the summer.

**Strategic Leadership Considerations**

Let us consider now the coronavirus pandemic in the context of leadership and resilience in a crisis. There have been multiple texts published on leadership, including on organisational leadership and military leadership, but there is only limited

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1Email: andrew.robertson@health.wa.gov.au
2The sub-title, “Life in the time of coronavirus”, is a reference to a book by Gabriel García Márquez, *Love in the time of cholera* (Márquez 2016), which is about resilience during a crisis.
3Coronavirus disease 2019 (COVID-19) is related to Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS). COVID-19 is caused by a novel coronavirus now called Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) that was first identified Wuhan, China, in December 2019. Coronaviruses are a group of related RNA viruses that cause respiratory tract infections in mammals (including humans) and birds. Coronaviruses readily mutate and can be translocated from one species to another.
4In November 2019, a number of WIV’s staff became unwell, possibly related to work on this virus ranging from ‘gain of function’ research (into the kind of changes that need to be made to the virus to allow it to become a pandemic) to vaccine development. Such work could have led to an accidental leak of the virus from WIV.
guidance on leadership in a crisis, particularly a pro-
longed crisis. There is some guidance on dealing with
a short-term disaster but less guidance on public
health leadership in a pandemic.

As a public health physician and a disaster
medicine expert, I have three public health objectives:
• to prevent unnecessary morbidity, mortality and
economic loss resulting directly from the
disaster;
• to make sure that we do not mismanage our
disaster relief efforts and make matters worse; and
• to minimise the risk to the community from any
hazards, identify those things that are likely to
give rise to those hazards, and optimise any
activities that might reduce their risk.

In Western Australia, these principles now guide
our public health activities to mitigate the impact
of public health emergencies, to reduce the subsequent
disease and to make sure we have sufficient staff.

Looking at crisis leadership and resilience, there
are a few things we need to consider. Initially, we need
to frame the event. To do that, we need to look both
inside and outside the organisation. COVID-19 is not
just a health issue; it is a whole-of-government issue.

We have to be aware of unconscious bias. It is very
easy to fall back on the familiar and the comfortable,
particularly in medicine, as we know what to do in
other disease outbreaks. But COVID-19 is hardly the
same.

Ambiguity becomes a major issue. There were,
particularly early on, very weak and conflicting
signals as to how bad the disease was; what it was
that we needed to do; and, often dealing with limited
information, there was a need to act with courage.
When dealing with that ambiguity, we needed to listen
to our critics, and the people who worked with us, to
make sure that what we were doing was evidence-
based and made logical sense. We also had to have
the courage to be accessible, so people could follow
our lead.

Management of the Pandemic in its Early Stages
I like this 19th century quote from Field Marshal
Helmuth von Moltke: “No plan of operation survives
first contact with the enemy” (Hughes 1993: 45-47)
and that is certainly what happened in this
circumstance. The COVID-19 situation rapidly evolved
and quickly outran our pre-disaster response plans.
We had extensive disaster response plans, including
pandemic and respiratory illness disaster response
plans, and we had the legislation to implement them.
But we had never used that legislation, nor had we
ever implemented a health state of emergency.
Further, my role as Chief Health Officer and the roles
of the State Health Incident Controller and the
Director General of Health, were quite unclear.

We knew what the plans said and they helped us
to set up initially, but it rapidly became obvious that we
were going to have to work very closely with other
agencies, particularly the Western Australian Police
and national agencies, including the Commonwealth
Departments of Health and Prime Minister and
Cabinet. We had to have very good operational
structures and people, plus a very clear under-
standing as to where we were heading to get through
the crisis.

We also had to deal with a lack of preparedness.
An issue we had early on was that we were relying on
just-in-time supplies of personal protective equipment
(PPE) when, all of a sudden, those supplies dried up
because the whole world wanted PPE. We had to deal
with that quickly.

Then there was role conflict. We had both an
operational role – to make implementation work; and
an advisory role to government. As the lead opera-
tional agency, we had to work with our health sector,
the police, other relevant agencies and our Premier
and Cabinet colleagues to make sure implementation
worked. Concurrently, we had to advise our Premier
and the respective Ministers who held relevant
legislative and administrative responsibilities.

In Western Australia, the primary legislative heads
of power in such circumstances are in the Emergency
Management Act and the Public Health Act. We had
to rapidly implement our state emergency and
pandemic plans. By early March 2020, we only had
78 cases of COVID-19 in in Australia and we had had
one death in Western Australia, a passenger from the
Diamond Princess cruise ship. There had been a
couple of deaths in New South Wales. The majority
of Australian cases had a history of travel from mainland
China and we were just starting to see cases coming
in from Iran. Rapid growth in infections followed. By
the end of March, we knew we had a serious problem
and that it was getting out of control.

We had already brought in border controls on
travel from China, and border controls on travellers
from other nations were introduced rapidly over that
period.

We needed an organisational structure to support
my role at the hazard management agency and as
Chief Health Officer and to support the various people
reporting to me. This structure was established
rapidly.

A State Health Incident Co-ordination Centre
(SHICC) is a virtual organisation that is only created
in times of disaster, but this had had to become a full-
time State organisation. A number of Commonwealth
statutory provisions had to be activated as well, including
the Biosecurity Act and National Health
Security Act.

We worked very closely with the Commonwealth
Department of Health and with the Australian Health
Strategy to guide us through the 'middle game'. In that...

Longer-term Strategic Planning and Implementation

The next step in our crisis leadership involved thinking strategically about big-picture, longer-term issues to ensure they were not lost in the operational frenzy. We needed to get to a situation where we could bring our country out of this pandemic. Going forward, we would need to know what was going on. To do so, we would need to rely on everything from local news to national information. We needed to be working with our teams, but also working up to ministers. It became critical, more than in any previous event, to work very closely, not only with my Health Minister, but with the Premier and other key ministers.

Using a chess analogy, we needed an overall strategy to guide us through the 'middle game'. In that first 12 months when we knew we were not going to have a vaccine, we needed a strategy for how to get through that 12 months and get some form of economic recovery after the first wave. We needed to allow business to continue — to allow people to go out, relax and spend money. Getting the 'middle game' right would prepare us well for the 'end game'.

The 'end game' would be when we could get the population protected enough that we could start opening it up, not just to our nation, but to the world. One option for the 'end game' was to achieve immunity through infection, but that has not worked when tried in a number of countries, including the United Kingdom and Sweden. When they tried that, they ended up with tens of thousands in hospital and tens of thousands of deaths. Even then, only about 8 per cent of the Swedish population were protected.

Vaccination rapidly became the only viable option, with the intention that, if we could protect the majority of community and achieve some form of 'herd immunity', then COVID-19 would go from being a pandemic disease to possibly an endemic disease similar to influenza. But to get there, we had to think strategically about the public health measures that would be necessary.

So, beginning in February 2020, the focus turned to strategic planning, particularly operational planning informed by modelling — what happens if we get an outbreak in a prison; how do we model something in an aged care facility; and worst-case scenario planning at both a local and national level. We also had a number of reviews that looked at whether our future planning was robust.

Operational matters considered included: how to set up COVID clinics; what do we need to do to surge up our ICUs; are the clinical guidelines adequate; can we use the private hospitals; what is the health workforce, how do we expand that, and how do we triage if we get too many cases. We also had to focus some plans at a national level.

We reached a point after the first wave where, initially, we thought that we might not be able to suppress the disease, but in the end, we were successful and we remain highly successful in meeting a goal of no community transmissions i.e. we have no cases in our community. The only cases we have are those that are coming in from overseas.

On-the-Job Learning and Adaptability

The next step in building leadership, resilience and adaptability became developing resilience and flexibility in our workforces, particularly around ambiguity and complexity. We have seen maturing in these aspects. Early on, we had conflicting messages on the disease; we did not know what the likely effects were or the best ways to manage it. There were lots of theories and not much evidence. We had to work...
closely with agencies like Police, Premier and Cabinet, Education, Transport and other agencies that we had had good relationships with, but never to this extent. We made mistakes on the way, but we learnt a lot of lessons about working together. We have had to deal with legislation that had never been applied before and learn how to use a state of emergency, its strengths and weaknesses.

We had to be constantly evolving and flexible, accepting that we had made mistakes at times, learning many lessons from them. We have had to make multiple decisions, often very quickly and on limited information, but generally based on an assessment of whether the risk is low, medium or high, informed by the evidence available and a knowledge of its limitations, together with an assessment of the risk appetite of the government and its agencies. Risk appetite has varied among governments and agencies over the course of the pandemic.

We also needed to listen to our critics. At times, they could see things that we might be missing. At other times, we were ahead of them. Part of the role of executive leadership involves protecting your agencies, not from criticism, but from micro-management by other agencies or the political hierarchy. Doing so allows the operational people to do their jobs.

We also had to deal at times with disconnects between operational decisions and the health advice. You get asked one day whether we should close the borders and the next day whether we should allow painting of children’s faces. You have to make those decisions based on risk.

As well, we had to navigate the law. My role as the Chief Health Officer was primarily regulatory. Nevertheless, I was asked to provide public health advice and the health position in the Palmer High Court case. We were ultimately successful in that instance, but there was a range of other issues that we had to deal with, such as: the potential use of Rottnest Island for hotel quarantining; should we allow schools to go back; could we do without state border controls and at what stage should we require them.

We had to deal with the crews of merchant ships, many of whom were COVID-infected. We developed expertise in managing infected cruise ships and merchant ships.

I provide health advice to my government and accept that there are broader contexts of which I need to be aware. As a military example, the USS Theodore Roosevelt experienced an outbreak early in the pandemic. The first three cases were reported in March 2020. By May, the ship had over 1100 cases which put the ship was out-of-action. The captain, correctly, had tried to evacuate the ship, but was not supported by his government and he was relieved of his command – that story is still running. In France, the Charles de Gaulle, another aircraft carrier, had nearly half of its crew infected by 18 April 2020.

The Australian Defence Force (ADF) has had a better experience. We have done quite a lot with the ADF in Western Australia. We have worked closely with the Royal Australian Navy (RAN) to clear ships as they have docked. The RAN adopted very good arrangements early on, including not disembarking in foreign ports, and we did not see any outbreaks of disease in its ships. We worked with the Special Air Service Regiment when borders were closed late in 2020 to make sure their selection course could proceed, including ensuring that soldiers from interstate could be quarantined before participating. More recently, we have worked with the Pacific Patrol Boat Project to ensure that crews could enter Western Australia from the Pacific countries to undergo training and pick up patrol boats.

There have been very close links with the states and territories, probably far closer than previously. These are vital relationships.

As Chief Health Officer, I cannot make all the decisions. I need the support of good leaders. Distributed leadership requires role clarity and freedom of action. My deputy chief health officers run the State Health Incident Co-ordination Centre and the Public Health Emergency Operating Centre. You have to have the right people in the right roles and a number of times we have had to move people into different roles to make sure that we had the right people in the right places. We have had to develop those key relationships, often at a far deeper level than we have ever done before. This has become incredibly important as we worked through the 15 months of managing this pandemic. I also have spent a lot of time with our legal teams because of the state of emergency and the Palmer High Court case.

Communications have become critical. This is part of dealing with the politics, the media and the general public. It is crucial to keep people informed. The media have been very beneficial. While we have had criticisms at times, it became critical that managing conflict was factored into my role. We now expect everything to be examined; we expect to be as transparent as we can be. There are three stages of disaster communications: what has happened; what are you doing about it; and who is to blame. We have had to deal with some interesting conspiracy theories, fake news and things like micro-chipping vaccines, that coronaviruses have been caused by 5th generation communication rollouts etc.

We have had to deal with people who have misbehaved. We have had to involve police where people breached quarantine or otherwise did the wrong thing. But, generally, the public has come along with us.
Resilience

The pandemic has been non-relenting over a long duration – it has been an ultra-marathon. One aspect of resilience in this context is looking after our staff. We often do far better with our junior staff – rostering them off, getting them leave – than our senior staff. We have had a few senior staff whom we have had to push to take a break, but we all operate better after we have had some downtime. This is about pacing yourself. It has parallels to how we would manage headquarters staff in a conflict. We need to think about how we should support people and give them downtime that works for them.

We are under constant review. We are subject to national and state reviews and this will be ongoing. We also have new challenges coming up. Those that we have to be looking at from a strategic point of view include: how do we roll out our vaccines; what do we do about our international borders; how do we open up society; what is COVID-normal going to be in 2021, 2022 and beyond.

The Vaccination Programme

The next phase is our rollout of the COVID-19 vaccination programme. There are two vaccines available in Australia: the Pfizer/BioNTech vaccine and the Oxford/AstraZeneca vaccine. The Pfizer vaccine has to be imported and, as it is based on a messenger-RNA, it has cold-storage requirements so is a lot harder to handle. The AstraZeneca vaccine is now being manufactured in Australia and supply will ramp up over time. As of 29 March 2021, nationally, 474,000 persons had received their first of two COVID vaccinations. The national rollout is progressing by phases, vaccinating the population by priority groupings. Essential service personnel were vaccinated in Phase 1a. We are now progressing to Phase 1b – the elderly (over 70-years-old), Aboriginal and Torres Strait Islanders over 55, and younger adults with underlying medical conditions. Probably by mid-year, we will commence Phase 2a which covers those over 50-years-old and other high-risk workers.

So, the vaccination programme is progressing. It has been a little slow initially, but it will pick up as supplies of the AstraZeneca vaccine improve over the next few weeks. The states have responsibility for vaccinating their frontline health people and critical and high-risk workers. The Commonwealth has responsibility for most of the other groups, although we anticipate that the states will be assisting the Commonwealth.

There is a question around vaccine safety. The vaccine safety database is huge – there have been over 53 million doses administered in the United States to date, and tens of millions of doses of the AstraZeneca in the United Kingdom. There have been some adverse events. Most people get a sore arm and feel a bit unwell after both vaccines. Some vaccines are worse than others, but they are highly effective. Research from Scotland shows that these vaccines prevent up to 95 per cent of hospital admissions. Most people would not mind a small infection, but would be unhappy to end up with a serious one.

Conclusion

Studies of leadership and resilience in a crisis are underran. Most of the leadership literature is organisational rather than crisis focused. During the coronavirus pandemic, we have learned many lessons. They will remain relevant for the next stages of the pandemic and they should guide our leadership and resilience in the future. Practical leadership requires a willingness to accept that decision-making is about risk-taking. Your risk appetite may change the ways that you attempt to solve a crisis and also the ways that people respond to your leadership.

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References
Resilience New South Wales came about in the middle of the worst ever bushfire season New South Wales has experienced. The fire season was unprecedented in terms of its protracted nature, its early start and late finish, the extraordinarily wide scale of destruction and devastation; and the tragedy. It was not, though, Australia's worst bushfire disaster in terms of casualties. In Victoria's Black Saturday in February 2009, 173 people lost their lives in one afternoon. In New South Wales during the 2020 fire season, we lost 26 lives.

I signalled to the New South Wales government in early 2019 that, after having been commissioner of the state's Rural Fire Service (RFS) for more than a decade, I should look at a change. I was originally going to leave before the 2019-20 fire season. When the season began early, however, I decided to stay. We had no idea it was going to be as bad as it was. Then, in the middle of the season, given the unprecedented damage and destruction, the government knew it would require a recovery, rebuilding, reconstruction and healing effort the like of which had never seen before in New South Wales.

So, the government decided to set up a new organisation around recovery and disaster preparedness with the statutory responsibility of leading recovery. They chose the name “Resilience” for it and invited me to lead it.

The Remit of Resilience New South Wales

Initially, we invested a couple of months in evaluating what the remit of the new organisation should be: how we could meet the expectations of government, the emergency management framework and, importantly, society. From this, we arrived at our vision: “From prevention through to recovery”. We would need to give confidence to communities across New South Wales that they can live, work and invest. We will do so through leading and co-ordinating disaster management and recovery, driving strategies and investments to reduce risk, and building the resilience of communities to significant external shocks and stresses of all kinds.

In the first few months, I researched a lot, I read a lot, but, importantly, I listened a lot and I asked a lot of questions of people about what they viewed as resilience. Most people came up with a narrative about our ability to withstand a big shock, or a big disaster and bounce back to normal.

I struggle with that because the whole idea is, if you have been through a difficult period or an enormous event, you want to come back better, stronger and wiser. What is normal after you have had a significant disaster or traumatic experience? You have got to learn from and build on that experience and come out the other side better and stronger. But importantly going forward you need to work out how to prepare yourself, your business, your family, and your community to anticipate and ready yourself for that next big disaster. In effect, to be more proactive at prevention and mitigation arrangements leading into it, to deal with it decisively, and then to come out the other side rebuilding, repairing, reconstructing and healing.

Resilience across New South Wales in 2019-20

Resilience across New South Wales will be my focus in this paper. When I look at the last two years, you cannot go past the extraordinary and compounding effect of disasters on many communities. In early to middle 2019, we had 100 of the geographic areas of the state drought-declared – one of the worst droughts in recorded history. That became the backdrop to what turned out to be our worst ever bushfire season.
There are two phrases you will not find me using to describe the last two years: “black summer bushfires”; and “social distancing”. “Black summer bushfires” I will not use, because it does an extraordinary disservice to all those that were being so heavily affected by bushfires on top of what they had been living through for years with drought. We were averaging more than a thousand fires a month in New South Wales in winter (June, July and August) 2019 and then it just intensified as we went into spring and summer. People were losing livelihoods, businesses, homes and loved ones well before summer kicked in. We lost 26 lives during the 2019-20 fire season. The first two of those lives were lost in October before we went into the into the summer period. The season was unprecedented.

When the drought finally broke in February 2020, the rain ended the longest uninterrupted period without any meaningful rainfall leading into a spring and summer period. It was one of the latest onsets of monsoonal activity in northern Australia – a weather event that finally brought moisture down into the centre of Australia to break up the hot air mass that had been dominating the weather. The drought broke with a vengeance. In a number of areas, the storms and rains came across a very denuded landscape. From drought and fires, those extraordinary rain events caused very significant flooding, erosion and landslides. What people had not lost during the drought or the fires, in a number of locations they saw washed away in the rain events.

As we were just getting our heads around all that came with the fires and then dealing with the storms and the floods, we came into March. We were then well into the thick of the COVID-19 pandemic. We were learning as a as a community, as a state, as a nation, and as a global community what the challenges were in responding to and living through a pandemic, including the peculiarities associated with this particular virus.

So, when I think of the last 18 months, I reflect on communities that have been impacted and terribly affected, not just by one disaster but, for some of them, four or five very public disasters, let alone all that was going on in their personal lives. I think COVID has been a remarkable leveller for all of us. No matter who or where we are, what we do, where we work, or where we live, COVID has reached and touched us all. It has reminded us all to pause and contemplate our own level of vulnerability.

In my experience over decades with foreign emergency services, when disasters happen somewhere else, we are remarkably generous, we pour out all sorts of assistance, support and love to those impacted. We, however, very quickly transition back into life as we know it. On the back of some major events, COVID has levelled us all and reminded us that we are all susceptible.

2019-20 Fire Season

Reflecting on the fire season and in particular the toll it took on New South Wales, just under 12,000 fires burnt during the season, most of which started and spread very quickly. We lost some 5.5 million hectares, the largest area burnt in recorded history, particularly along the forested areas of the Great Dividing Range. The only good thing in a drought from a fire point of view is that there is no fuel west of the Great Dividing Range. There was nothing on the ground to burn, so the fires were all concentrated along the range. They spread from the Queensland border to the Victorian border. We had high intensity operations that went for 160 days and bushfire emergencies that were declared for 200 days (5 to 6 months). Historically in New South Wales, the most high-intensity periods might last 2 to 3 weeks; they do a lot of damage, but there is usually a big rainfall event that disrupts the cycle.

During the 2019-20 fire season, we lost we lost 26 lives including seven firefighters – four volunteers and three aircrew (when a plane crashed near Cooma in January). It was it was an awful period at a personal, organisational and societal level. But what will stick in my mind the most was how deflating it was from time to time. I recall vividly that when we only had 40 or 50 concurrent fires, we thought we were making big progress. In any other season, that would have been a horrible day, but we were actually making progress when down to 40 or 50 fires. Then, suddenly, a frontal system would start coming across the state and, instead of bringing moisture, it brought lightning storms. Within 12 hours of the lightning passing across the Great Dividing Range, we had gone from 40 or 50 fires back to 170 or 180 fires, all of which were taking hold and spreading, some only hundreds of metres from a control line that firefighters had been working on to protect communities for many weeks. The firefighters’ efforts were now thwarted, because an extraordinary fire was spreading just beyond the line they were holding.

We also found fire behaviour going beyond conventional wisdom. We had computer simulation models and fire behaviour experts doing manual predictions of fires. Historically, the best predictive specialists would identify that, under certain conditions, in the best-case scenario a fire will spread to here; whereas in the worst-case scenario the fire would get to there; yet, invariably, due to local factors, it would reach somewhere in between. Usually, these experts are able to estimate quite accurately where a fire would spread. What we were finding during this season, though, was that fires were spreading beyond the worst-case scenario at 2 - 4 am, not at 2 - 4 pm when you would normally expect fires to be at their worst. It was a reminder of the of the extraordinary effects of the drought and weather-driven elements causing fire behaviour at levels we had never seen.

Recovery and Betterment

When the fire season settled and our focus moved to recovery, we knew there was a rebuilding to be done
and a need to focus on betterment. One of the best things we have learnt when it comes to resilience, helping communities and individuals after disasters, is the need for betterment funding. The classic example is the old timber low-lying bridges. They burn down in fire and, even in low to moderate floods, they become inundated quite quickly. But over the decades when a timber bridge was damaged through a flood or fire, there would be debate about whether or not we should replace it with something bigger, better and higher. Arguments would go around and around among the different levels of government resulting in the bridge being rebuilt in the same way only to see the cycle repeated when it burns down again or is inundated during future floods.

This time around, with good co-operation at all levels of government, we are seeing the timber bridges that were damaged or destroyed, particularly up through the north coast, being replaced with concrete bridges. We are also seeing increases in bridge height to allow those communities to address the issue of isolation during low to moderate floods at any time of the year.

Betterment also involves building resilience at community level. We talk about rebuilding, reconstruction and repair – all those things are really important. But we do not talk enough about healing the emotional and psychological toll that is occasioned to individuals, families, business owners, primary producers, and local communities. This is an enormous issue and is at the core of resilience.

What we conveniently overlook as a society too often is that we live experiences, we learn through those experiences and, hopefully, as individuals, families, and communities, we learn together from those experiences to be better off next time. Too often, we overlook the emotional toll that is occasioned through difficult experiences. More often than not, the big disasters, the big events, the big incidents that impact on the way we live, work and function have an extraordinary emotional toll. It can be quite traumatic for individuals.

When I catch up with people at evacuation centres, recovery centres and staging areas, it can be confronting. You meet people who are broken emotionally, and, when you ask how they are going, they say they are okay. But they are very emotional. They will say things like: “I can’t even prove to you who I am, I don’t even have identification, how can I go on from here. Everything I’ve ever owned is now ash and rubble.” They know they have money in the bank, but they cannot get money out of the bank to pay their way, to get the next meal. It is really difficult to put yourself in that person’s shoes and work out how will they go forward. The emotional challenges are quite extraordinary.

Resilience for me starts with the individual, extends then to the family and social network, then extends through to our business and our employment areas and it goes right through to the community level.

**Emotional Resilience**

One of the most confronting phone calls I had towards the end of 2020 marking the anniversary of some really traumatic events was when I caught up with an old RFS colleague one night. It was an emotional conversation reflecting on those events. I asked him how he was travelling. He replied: “Look, I’m getting some support. It’s really making a difference.” I said, “that’s fantastic” and he said “yeah, those professional services have really helped me process a few things”. I asked: “What’s it doing for you”. He replied: “I didn’t realise how much I was shutting my wife and the kids out. I’m really making a difference now. We’re getting along a lot better. I can see the difference. It’s also helping back in the workplace and I’m getting on a lot better with the volunteers.” I said: “That’s really great. I’m proud of you.”

We were about to part ways on the conversation when he said to me: “Shane, before you go, you’ve got to promise me something”. I said: “What’s that”. He said: “You can’t tell anyone that I’m getting help”. I said: “You’ve got to be kidding. After everything that we’ve been through and after everything that we’ve just talked about you’ve somehow got this shame about being helped”. He said: “Well Shane, I don’t want anyone to judge me. I don’t want anyone to think that I’m not coping. I don’t want to think that I’m not up to the job that I really want to come back to and continue with. I just need to process those things.”

Out of all the things that I had experienced it was that call that confronted and challenged me the most. Then I weighed it up against a lot of the conversations I have had as I travelled around disaster-affected areas in rural and regional New South Wales. I cannot tell you how many times people would approach me. Notable was the number of wives, children, and grandchildren that said to me: “Can someone please talk to my husband, my father, my grandfather. He’s wandering around the property, reckons he’s going to do everything himself, won’t put his hand up for any assistance, reckons there’s people worse off that should be accessing the supports and the programmes and he certainly won’t have a conversation about how he is, how he’s feeling.”

Their plea is: “Can someone get to him because we do not want him to give up on life; we do not want him to get so overwhelmed that he thinks he cannot get through and that there is no hope or a way forward.” I find that really distressing. If we are going to focus on resilience, we must focus on ourselves and be honest with ourselves. When these lived experiences happen, when we confront difficult circumstances, emergencies and disasters, it is okay to acknowledge that there is an emotional toll attached to the carnage, the damage, the destruction, the despair and the contemplation of what has happened and what has been lost.

Then, more importantly, is the issue of how am I going to go forward and come back after what we have just experienced. It is okay to acknowledge that there is
an emotional toll attached to that because we are human. If I could make one plea when it comes to resilience, it is that men particularly have a look in the mirror and give yourself permission to understand that you have got thoughts and feelings and emotions like everybody else. Talk to each other, talk to your partners, talk to your mates about how they are feeling and how they are processing. The minute you give yourselves permission to open up to one another, the quicker the realisation is that you are not alone, that you are not odd, that we are all experiencing things in different ways and to different degrees. While we regard it as perfectly normal if Mike and I go in for a shoulder reconstruction and Mike is out playing tennis again in 6 - 8 weeks because he is fit and he is following all the rules from the physiotherapist, but I still have a painful shoulder 8 - 12 weeks later because I did not, no one cares. So, why do we have this challenge when it comes to individuals, all of us needing to process things differently, needing to get different supports and different perspectives, because our predisposition coming into any event or any disaster is different.

We all carry our own personal and emotional baggage from whatever is going on in our lives. We are experiencing similar things and we are all quite different coming out the other side, even though we have experienced similar things. So, the more we can share and the more we can support one another the better. Resilience starts with the individual.

I would also challenge you from a leadership perspective: “Do not underestimate the little things”. When my daughters were little, I used to read Who Sank the Boat by Pam Allen to them. It is a story about a donkey, a pig, a sheep, a cow and a mouse. They get into a little row boat to cross a river to get to pasture. It is designed to teach volume and mass. But there is a good leadership lesson in it. The big animals get in the boat one at a time first. On every page it says: “Do you know who sank the boat?” As each animal gets in, the boat gets a little lower in the water and a bit of water slopes over the side. At the end, it is the mouse that leaps off the jetty and lands on the edge of the boat; it is just enough to tip the scales of the boat and they all sink down into the water.

The message for me is that, as leaders, as individuals, as carers and all those that are concerned for others in life, our family, our businesses, our loved ones, our local community, is do not underestimate the importance of the little things. How paying attention to them and sharing your understanding about those little things can make the difference to individual and collective healing. If we can heal and come out stronger, set priorities and set focus areas, we will find that the recovery process succeeds.

The rebuilding, the reconstruction, the priorities, the focus areas, the investments will come through collective thought. Open communication sharing goes to the core of building resilience.

**Physical, not Social, Distancing**

I mentioned earlier that I will not use the phrase “social distancing”. I understand what the intent is and I support it. But what we are really talking about is “physical distancing”; geographic separation that seeks to stop the virus from spreading. The more we can maintain distance physically, the better chance we have of limiting the spread of that hideous virus. However, the last thing we need in New South Wales and in Australia right now is to socially isolate, to exacerbate loneliness, isolation and depression. It is the last thing we need particularly in a state like New South Wales where we have had the compounding effect of so many disasters and the recovery efforts in communities have been interrupted and compromised by COVID. How deflecting it was for villages, towns and communities to be gearing up for the 2020 Easter holiday traffic to compensate for what they lost in the summer period only to have it thwarted by travel restrictions, shutdowns and fear of the virus.

I have found that people in 2020 consciously connected more with family and loved ones, with workmates and with their social circles than they ever would have in 2019 or planned to do in 2021 had it not been for the virus and the ability to connect. I had never heard of Zoom until 2020 and I never knew how powerful tools like Microsoft Teams were in enabling people to connect and provide face-to-face messaging, group conversations and interactions; where people were sharing their thoughts, their feelings and their experiences. It helped them to realise that what they were experiencing and were worried about was a shared experience.

Many employees, in particular, said: “You know what, if I was normally going to the workplace, I’d go into the workshop or I’d go upstairs to my desk. I’d go to the tea room, where I might see four or five people. Now, I’m part of this organisation. I am not only seeing those four or five people. I’m seeing a whole team and department. I’ve seen the general manager, the CEO, a supervisor from whom I only ever got emails. They have a face; they do exist. They are online, telling us what’s going on, why it’s going on, what the challenges are.”

People felt included. Social inclusion, whatever your organisational responsibilities are, is essential. Whether it is a family unit, your business, your social circles, your clubs, your organisations, your employment, it did not matter. Community organisations were coming together more than ever before during 2020 and I think that has been one of the staples of building resilience and strength during very difficult and uncertain times.

**Conclusion**

There are many wonderful lessons that adults can learn from children. When I was the RFS commissioner during the 2019-20 fire season, I received thousands of cards, drawings and notes from kids from schools and families everywhere paying tribute to the firefighting
effort and saying thank you to all involved in that work. I have visited quite a number of schools, been to some community organisations and some galleries and similar places around the state as people are starting to process the recovery. They are lifting out some of these wonderful notes that have been sent to me and shared with others. In many of those notes, three phrases tended to come up repeatedly. The kids worked them out when they spent time with each other trying to process the enormity of what had happened and unfolded in their lives. Each kid discovered: “I am not alone in my thoughts, feelings and predicament”. Then they worked out that they could say: “You are not alone, because I can relate to what you are talking about and I can share my thoughts and feelings and views with you”. The final wrap-up was the group of kids were not alone.

In building resilience, the more we realise that we are not alone, the more we can come together, support each other, anticipate and plan for the next big event and do better than we did before. We can seek to minimise the damage, respond as best we can and then, importantly, leverage that collective thought as to how we rebuild, recover and heal. We will come out the other side better than we were prior to the event.

The Author: Shane Fitzsimmons was appointed inaugural Commissioner of Resilience NSW and Deputy Secretary, Emergency Management, in the Department of Premier and Cabinet, New South Wales (NSW), in May 2020. Resilience NSW is a new agency focused on disaster preparedness and recovery. He chairs the State Emergency Management Committee, the State Recovery Committee, and National Emergency Medal Committee. Previously, he had a distinguished career of over 35 years in the NSW Rural Fire Service (RFS) culminating in becoming its Commissioner from 2007 - 2020 and leading the RFS during the 2019-20 national bushfire emergency. He was awarded the Australian Fire Service Medal (AFSM) in 2001 and the National Medal in 1999. He is also a Royal Humane Society of NSW Councillor and was named NSW Australian of the Year in 2021. [Photo of Mr Fitzsimmons: Resilience NSW]

LETTER

Taiwan and the Chinese threat

In recent months, Chinese air force aircraft have been making increased intrusions into Taiwanese airspace. This has led to more media speculation that, in the near future, China may decide to invade the independent island, over which it has long held claims of sovereignty.

At the closest point, Taiwan is some 130km from the Chinese mainland. To assemble and mount an amphibious invasion force, and an airlift of troops across this sea and air gap, would require a massive operation, and would be extremely risky. In World War II, the Allied invasions of Italy's mainland at Salerno and Anzio were near disasters.

To gain air superiority in the Mediterranean in 1943 to support amphibious operations [first at Sicily, then at Salerno and Anzio], Allied air forces lost over 700 aircraft. The successful D-Day landings at Normandy only gained a beachhead in the first instance, even with established sea and air superiority, because espionage and deception misled the German defences to believe they would occur elsewhere.

With today's technologies, it seems impossible that such a large operation to invade Taiwan could be kept secret. Taiwan and its allies could inflict substantial damage on an invasion force, in the air/sea gap of the Taiwan Straits, if not repel them altogether. Although it is conceivable that China could absorb significant losses, and take over Taiwan through overwhelming firepower and sheer weight of numbers, it would be a Pyrrhic victory.

Besides the devastation it would cause in Taiwan, it would result in much of Asia and the democracies of the world breaking off trade with China. At best it would usher in a new Cold War, and a massive disruption to the Chinese economy – and this assumes that nuclear weapons would not be used in a worst-case scenario.

I would suggest that China would not seriously entertain a military invasion of Taiwan. It may continue to posture such a threat, but in practice employ ‘grey zone’ tactics, trade and other political pressures, to gain control over the long term.

Bryn Evans
Scarborough, Queensland, 11 May 2021
BOOK REVIEW:

**Soldiers and civilization: how the profession of arms thought and fought the modern world into existence**

by Reed Robert Bonadonna

Naval Institute Press: Annapolis, MD; 2017; 352 pp.; ISBN 9781682470671 (hardcover); RRP $64.99

Soldiers and Civilization examines the history of the military profession in the Western World from the ancient Greeks to the present day. Drawing from military history, sociology, and other disciplines, it goes beyond traditional insights to consider the military profession in the context of both literary and cultural history.

Bonadonna acknowledges the contradictory character of warfare and soldiering that Clausewitz recognized, writing, “The soldier is both the least civilized and the most civilized of persons. Soldiers walk the weird wall at the edge of civilization, but they are prepared to serve their civilization and society without stint or limit … soldiers are constantly in danger of forsaking that which they serve and of forgetting the nature of what they do.”

Bonadonna, whose doctoral degree is in English literature, approaches his examination of the nature of war from a broad cultural and social perspective emphasizing the liberal arts, not merely history. He maintains that soldiers have made an unacknowledged contribution to the theory and practice of civilization, and that they will again be called upon to do so in important ways.

The reciprocal links between war and civilization are direct in the classical age and overwhelmingly documented. Greek city-states and the Roman Republic depended on armed citizens to protect their interests. Soldiering was a civic responsibility, formalizing the relationship between the state and individuals. It is hard to argue that military activity did not help to shape Greek society.

No one disputes that the growth and development of warfare have been functions in the advance of civilization, but the contributions of war to human progress may be less obvious. Many argue that violent conflict reflects little more than relentless cruelty and ruthlessness, manifesting the worst aspects of human nature.

War is paradoxical, ironic and ambiguous, all characteristics that defy traditional analysis. History has shown, however, that society and the military profession have been able to reconcile this tension within the context of cultural history and the liberal arts. Poetry can describe and evaluate war far better than science and objective metrics, precisely because both poetry and war are stochastic (random) and embrace contradiction.

The author’s eclectic method is revealing. Nearly everyone interested in civilization recognizes that poetry and literature, art, music, and rhetoric as well as the sciences have influenced society. What may not be so clear is that war has been a pervasive subject of the liberal arts, creating a wide avenue of influence that has propelled culture and enlightenment forward.

Bonadonna also traces the growth of the military as a legitimate profession, once again derivative from previous work, most notably Huntington’s seminal *The Soldier and the State* (Belknap, 1957), although he casts a far larger historical and cultural net for his analysis than his precursor. He argues that the military profession, in its broadest consideration, might be viewed as an interdisciplinary branch of the humanities. A soldier is made of the words of history, poetry, and the laws and language of his calling. With each new conflict, the military may be called upon to preserve the values of civilization.

To fulfil its future role, Bonadonna argues that the military professionals of today must know, heed, and apply the examples and narratives of the most successful and exemplary military professionals of the past at their best.

Bonadonna, a recently retired director of ethics and character development at the United States Merchant Marine Academy and a retired Marine Reserve colonel, presents a scholarly but approachable and persuasive rejoinder that affirms warfare’s reciprocal positive contributions to progress.

Soldiers and Civilization is rich in content that summarizes military history from an interesting vantage point, not as a defence or rationalization for warfare, but instead by accepting conflict as integral to human nature and seeking greater understanding of what appears to be unavoidable behaviour.

Bonadonna explains the connection between professional militaries and the people in whose name those militaries fight and serve. Bonadonna reminds us not only that civilization has depended on soldiers, but also that our soldiers depend on their fellow citizens to understand, value, and help preserve their professionalism. The comprehensive nature of the book and the extent to which Bonadonna draws on the disciplines of the humanities to make his points set this volume apart from others on the subject.

Marcus Fielding
Knight of Germany is a biography of one of Germany’s true heroes, Oswald Boelcke. In World War I, Boelcke was the top-scoring scout pilot in the German air forces with 40 victories at the time of his death. Boelcke’s true genius was his ability to foresee the value of the role of the scout force beyond defending Germany’s army from attack by aircraft of the Royal Flying Corps and the French Armée de l’Air. This was at a time when Germany’s own air service was limited to artillery observation in support of its army.

This is not a new book. It was written in German by Professor Johannes Werner and first published in English in 1933 after translation into English by Claud W. Sykes. It has since been reprinted several times, most recently in January 2020.

The substance of the book is taken from letters from Boelcke to his parents starting when he first joined the German army. They were detailed, informative and expressed his personal viewpoint. He was humble and self-effacing and the letters were written to assure his parents that he was being well cared for at the front and that he was successful in the air. He believed that he would not fall to his enemy – he was right. Being drawn from letters written for his family, not the general public, there is an element of familial discourse; however, the author has expertly combined both the familial and war experiences.

Boelcke joined the German army on leaving school in 1911 as an aspirant for a commission in the telegraphy component of the force. Shortly after commissioning, Boelcke transferred to the emerging aviation service.

He excelled at athletics, at one time preparing to compete for entry into the Olympic Games, and his natural ability to mix with colleagues highlighted his leadership skills. These skills came to the fore in the air service. Boelcke grasped the significant impact that air power would make on and over the battlefield, well before most others.

From the beginning of the Great War, Boelcke rapidly came to the attention of the German high command, aristocracy and the public as his tally of kills mounted. He was wined and dined by royalty and feted by the public. While Boelcke enjoyed the encounters with the leaders of the country, he was uncomfortable with the public adoration.

His letters trace his exploits and the early development of aerial warfare, from artillery spotting to single encounters with enemy aircraft. His skills and the superior performance of German aircraft at that stage of the war saw his aerial victories steadily increase. His success also was due to his aggressiveness in the air, seeking out enemy aircraft rather than taking a defensive stance. He was dubbed a Jagdflieger, a term which gave rise to the tag, fighter pilot.

A personal relationship with the commander-in-chief of the German air forces resulted in Boelcke sending him his thoughts on the way aerial warfare should be developed. He addressed aircraft performance, the configuration of armament mounted on scout aircraft and the grouping of aircraft to overwhelm the enemy force, although to be fair, this was in part a response to the French grouping of their aircraft. Boelcke was given an independent command of a special staffel of advanced Fokker aircraft which later led to the formation of Jagdstaffels, or hunting teams.

Two of his students were Max Immelmann and Manfred von Richthofen. Richthofen went on to become the leader one of the most effective staffels and the most well-known and successful scout pilot in World War I.

The principles of air combat developed by Boelcke became a compendium for all fighter tactics well into the 20th century.

On 26 October 1916, Boelcke achieved his 40th victory in the air. On a sortie later that day, while avoiding an enemy aircraft he was attacking, he collided with a colleague’s aircraft and crashed. In death, Boelcke was mourned by the entire German nation, while the Royal Flying Corps sent a formal condolence: ....[to] our brave and chivalrous opponent. From the English Royal Flying Corps.

Boelcke was highly decorated and, along with other decorations, was awarded the Pour le Mérite (later known as the Blue Max), the Royal House Order of Hohenzollern and Knight’s Cross with Swords.

Knight of Germany is well written, easy to read and readily holds the reader’s attention. It captures the essence of aerial combat, its dangers and rewards. It traces the early development of air warfare and many of the principles developed flowed into the airborne arena of the Second World War. A backdrop to the story of Boelcke is the rich tapestry of German life before the First World War.

I recommend Knight of Germany to all interested in the history of military aviation.

Bob Treloar
BOOK REVIEW:

Airmen’s incredible escapes: accounts of survival in the Second World War

by Bryn Evans

Pen and Sword Aviation: Barnsley, South Yorkshire; 2020; 290 pp; ISBN 9781526761729 (hard cover); RRP $75.00

While Allied air power made a decisive contribution to victory in the European and Pacific theatres of World War II, the cost in terms of aircraft and aircrew was horrific. Royal Air Force Bomber Command suffered a 50 per cent casualty rate for its aircrew. While many perished with their aircraft, others survived, only to face the challenge of escaping back to England or face capture, interrogation, torture and internment – or suffer a worse fate at the hands of an enemy population enraged by the bombing of their homeland.

Bryn Evans has drawn together the accounts of British, Commonwealth and American airmen who survived to provide a remarkable insight into the challenges that faced them after they were either shot down or blown from their aircraft and catapulted into a hostile environment, often shocked and wounded.

The extraordinary stories of escape and survival by aircrew display the amazing resilience of the human spirit in extreme adversity in the air wars against Germany and its Axis allies in Europe and the militaristic regime in Japan.

Airmen’s Incredible Escapes provides 37 self-contained chapters of individuals and groups of aircrews as they endeavoured to elude a determined enemy intent on their capture. Commencing with engagements during the phony war, the air war over Burma and New Guinea, through to the intense culmination of the bombing campaign against Germany and German forces in occupied countries, the actions are presented in chronological order across the various theatres of war in which aircrew were deployed.

While Airmen’s Incredible Escapes includes the exploits of American and British air crew, many events focus on Australian aircrew or airmen who subsequently settled in Australia after the war. The experiences of aircrews in Bomber Command provide many of the stories, which is understandable given that some 10,000 Australians served with Bomber Command during World War II and 3486 were killed-in-action – Australia’s highest casualty rate of the war.

Notwithstanding, one of the earlier chapters describes the challenges faced, in two separate instances, by United States airmen flying their sticken aircraft clear of the town of Redcliffe, Queensland, before crashing. Another describes the challenges faced by an Australian pilot’s flight in a No. 10 Squadron Sunderland to Rabat, the French Moroccan capital, to enable an attempt by British emissaries to convince the French authorities to carry on the war and not seek peace with Germany.

Although carrying a common theme, each chapter describes a particular action and the book may at first appear to recount a disconnected series of events. However, such is the skill of the author that he captures the tension of the moment with the result that the reader will turn to the next chapter with interest and a sense of anticipation.

While many of the accounts have a grim similarity, each airman is confronted with a different challenge, opportunity and stroke of luck, resulting in varying outcomes. At the receiving end of the bombing campaign, the German population understandably labelled the airmen of Bomber Command terrorfliegers. Across the chapters of the book, the terrors faced by the airmen when their aircraft was damaged or shot down, often in flames, is brought into stark reality.

The book is well researched and indexed with a collection of excellent photographs and maps. The author has used primary sources, interviewing many of the airmen, as well as researching official accounts. Each chapter is presented in the same format: a brief description of the incident set in the context of the campaign or battle; the biographical background of the airman or airmen involved in the incident, including their prior training and operational experience; and an in-depth account of the focus incident. At the end of each chapter, there is a statement concerning the post-war life of the surviving airman, and sadly in many cases, of his recent passing – a reminder that living history is slipping through our fingers.

Bryn Evans writes extensively across a range of categories and genres. His most recent non-fiction books in military history are: Air Battle for Burma; The Decisive Campaigns of the Desert Air Force 1942-45; and With the East Surreys in Tunisia, Sicily and Italy 1942-45. His other writings have also appeared in various journals and media, notably in the areas of management, sport, travel and military history. For his fiction work, Bryn was awarded Second Prize in the Catherine Cookson Short Story Competition in United Kingdom for In the Dark; received a Commendation in the Australian Bi-Centenary Short Story Competition (Queensland); and published a short story anthology. Bryn now lives in Brisbane (formerly in Sydney) and is a member of the Institute.

Airmen’s Incredible Escapes is an anthology of human endeavour, individual resourcefulness and the will to survive. It will hold significant appeal for those readers with an interest in military history and military aviation.

Bob Treloar
**BOOK REVIEW:**

**Lucky pommie bastard**

by Don McNaughton

*Self-published though Ingram Spark; 2020; 220 pp; ISBN 9780645018813 (soft cover); RRP $19.99*

Forced out of France, Britain faced the Battle of Britain in 1940 followed by the bombing of London and its industrial cities by the Luftwaffe. For the island nation to forge a weapon capable of effectively striking targets in the enemy heartland, it had to create a new and stronger Bomber Command. To meet the demands for aircrew to man the bomber force, the Empire Air Training Scheme trained thousands of Australians and other citizens of the British Empire for the air campaign over Europe.

*Lucky Pommie Bastard* is the story of three Lancaster bomber crews each with an Australian pilot and a mixed crew of Australians and Britons who trained and flew together. It has a focus on the crew in which the author's father, Roy McNaughton, served as a mid-upper gunner and is referred to as the Trimble crew, the name of the Australian pilot.

The author, Don McNaughton, was born in Durham, England, and emigrated with his family to Australia in 1961 at the age of nine. He served in the Royal Australian Air Force (RAAF) for four years from 1971 as an aeronautical engineer cadet. Now retired, he is Emeritus Professor of Molecular Sciences at Monash University, Melbourne, Australia. *Lucky Pommie Bastard* is his first book.

The book is presented in two parts: the predominant section addresses the training and operational activities of the three Lancaster crews, while the latter part recounts the family's emigration to Australia and the experiences of the author.

Roy McNaughton and his crew survived 29 bombing missions in No. 207 Squadron, Royal Air Force, and No. 467 Squadron, RAAF. The description of their mission over Brunswick on 14/15 January 1944 captures the effort required to mount a raid. It describes the routine of the station personnel: briefing and planning staff, aircraft maintenance personnel, armourers, transport drivers, aircrew, the conduct of the mission, and the after-flight debriefing and routine. It captures the tensions, anxiety and hopes of those committed to the operation. To quote Doug Parry, a former World War II RAAF air gunner in Bomber Command: “The best description of a Bomber Command operation I have read”. I tend to agree with him.

Of the three crews that are the focus of the book, only the Trimble crew survived the war. Of the contingent of 10 Australian-led crews that formed in the United Kingdom at the same time, nine perished. The author provides details for each of these Australian-led crews. He also provides some very sobering details for each of the missions that the Trimble crew flew, including a copy of each combat report. Of interest, of the 17 aircraft that the Trimble crew flew, only one survived the war.

While many accounts of Bomber Command recount crew experiences, the pilot and his experiences are largely the focus and very few have a focus on the “other” crew members. *Lucky Pommie Bastard*, provides an interesting insight, placing an emphasis on the mid-upper gunners, or MUGS as they were known, and their challenges.

The author provides direct comment from Bomber Command war diaries, the Squadron Operational Record Book and Crew Combat Reports for each mission the Trimble crew flew. In doing so, he provides context and relevance for their actions, while the comments gleaned from the official accounts provide an insight into the stark reality of Bomber Command operations.

Despite the harsh reality of the time, the author has provided a warm, personal picture of the aircrew and their lives and the friendships they formed within the civilian community in Britain as well as their post-war outcomes – a tribute to camaraderie, commitment and compassion.

Roy McNaughton’s life in England following his demobilisation leads into the author’s account of the family emigration to Australia in 1961. The focus of the book then shifts to the experiences of a migrant family settling in Brisbane during the 1960s as ‘Ten Pound Poms’ as seen through the eyes of the author. It is a dramatic shift of focus away from life in Bomber Command.

The second, slightly smaller, part of the book provides a humorous, down-to-earth look at the life and tribulations of a teenage boy growing up in a foreign land. It is a warm account that will surely bring back memories to those of us who grew up in that era. It could easily stand as a separate book and would result in each book providing a thoroughly good read.

Regarding Bomber Command operations, the detail provided is incredible. The author has made a great effort to research the actions and fate of aircrews associated with the Trimble crew. The significant detail and the style of writing demands careful reading and the attention of the reader. That said, I believe the approach provides a compelling story and will capture the interest of the reader.

The part of *Lucky Pommie Bastard* dealing with Bomber Command will certainly appeal primarily to those interested in military history and will not disappoint, while the author’s experiences growing up in early Brisbane has general appeal.

Bob Treloar
AI at War provides a practical understanding of artificial intelligence (AI) and its application to warfare, especially naval warfare. The intended audience is people working with big data, AI, and machine learning (ML) in the military context; and national security professionals, particularly those involved in educating the next generation of military leaders.

The book comprises 19 chapters, each an invited essay by one or more experts in the relevant field. Chapters 1 to 7 focus on the theoretical basis for AI and ML as they apply to naval operations. Chapters 8 to 15 examine the application of AI to specific warfighting functions. Chapters 16 to 19 examine the application of AI to policy, strategy and naval contributions to national security.

The book draws on a wide range of research and operational insights leading to differing emphases among the 30 or so contributors. While there is no editorial synthesis of the competing views, there are recurring themes, including the significant role of AI in the evolution of warfare, and the responses from competing world powers.

AI is partly based on ML from vast streams of data that must be trusted to ensure the AI systems, in turn, are trusted to make their extraordinarily powerful contributions. A real threat is that AI systems can be deceived by manipulation of the data that guide them. Indeed, the ML process itself is still being researched and developed.

Provided this potential vulnerability is considered, the benefits of AI flow from its ability to conduct vast pattern-matching tasks in superhuman timescales leading to an enormous range of options being considered for human decision and thence execution, often with autonomous systems assuming the more dangerous and demanding offensive tasks.

The processes adopted for selection of optimum strategic, operational and tactical concepts and plans is often unclear to operational commanders and their staffs due to unfamiliarity with AI practices. Chapter 14 accordingly addresses adaptations needed in officer training syllabi.

Chapter 5 assesses the progress of AI and ML research and development in China and the potential for their application by the Peoples’ Liberation Army-Navy and compares it with experience in the United States Navy (USN) and United States Marine Corps. The USN has several active programmes employing autonomous unmanned air, surface and undersea vehicles, all of which employ some AI. Further research and development are needed to address the command and control of such vehicles in concert with manned platforms and in multiple ‘swarm’ groupings.

The laws of warfare and international agreements create moral and ethical constraints on the use of AI which are hard to satisfy. This has inhibited the adoption of lethal autonomous vehicles in other than tightly constrained scenarios, such as offensive self-guided weapons countering a confirmed hostile attacker.

Central to expanded roles for autonomous vehicles is improved understanding of potential benefits and risks through research, development, wargaming, modelling, simulation, operational exercises, and detailed post-operational evaluation from live engagements.

The application of AI can be ‘easier’ in naval vis-à-vis land warfare, due to clearer delineation of participating forces and their respective command and control (C2). The distribution of the operational commander’s intent and the assimilation of unit status reports is more readily accomplished with AI assistance. Communications, however, are open to cyber interference, so subordinate commanders must be ready to assume autonomous C2 for their assigned forces if higher echelon C2 are compromised.

Chapter 13 considers potential effects of AI on future force design and of integration of AI into the overall force structure. Maintaining military advantage vis-à-vis China and Russia requires a fundamental change in force structure and operational concepts. These include the disaggregation of forces with flexibility to reorganise to achieve localised superiority as a core principle of manoeuvre warfare, viz. mosaic warfare – the combination of various force elements to meet a time-critical operational task, then their recombination for employment in a different configuration for another task.

Chapter 15 looks at development of a decision aid for operational commanders and describes the Institute for Future Warfare Studies at the United States Naval War College.

AI is changing the character of war and United States defence leaders are committed to furthering the development of AI’s ethical military applications. Looking ahead, as AI and ML are powerful but fragile, there is a need to independently assess their vulnerabilities. There is a trend to fewer, more powerful AI applications. Human-assistance tools are of increasing application and power and are resulting in societal change. Enhancing general intelligence will depend less on data volume and more on how well the data have been screened and refined. The future of warfare will involve less direct human participation and more machine involvement both in decision refinement and in execution of operational tasking.

I have greatly enjoyed reading this fascinating book even if it leaves many questions unanswered. I recommend it to all readers interested in the future of warfare.

Chris Skinner
This book is the memoir of Corporal Daniel Keighran, Delta Company, 6th Battalion, Royal Australian Regiment (D Coy, 6RAR). It is co-authored by Major Tony Park (Ret’d), an Army Reservist and author of some 22 fiction and non-fiction books.

Daniel Keighran, a Queenslander, was born in Nambour in 1983 and was raised initially at Maroochydore. His father, a drover, had abandoned his family, but Dan’s maternal grandfather, a former World War II artilleryman, became his father figure. His grandfather taught Dan to fish and shoot, and provided him with a sound, ethical example for living.

When Dan was 11-years-old, his father, who lived constantly on the edge of the law, returned to the family. He bought an undeveloped farm at Lowmead in outback Queensland which he hoped to develop into a cropping and grazing property. He also used it to grow marihuana as a cash crop. He built a shed on the property which the family used as their home. It had a dirt floor covered with old carpet, and lacked running water, sewerage or electricity services. While the family lived in poverty, Dan relished the freedom he enjoyed in the Queensland bush and he developed a range of bush-living skills, resilience and courage which would stand him in good stead later.

In 2000, having completed Year 12, Dan joined the Army with his grandfather’s encouragement. He was accepted into the Infantry Corps aged 17 and was posted to D Coy, 6RAR, a motorised infantry battalion based at Enoggera, Queensland.

The first 10 years of the 21st century was a period of high operational intensity for the Australian Defence Force. Dan’s first operational service was in Malaysia in 2001, training with the Malaysian Army in jungle warfare. His second was in East Timor in 2003 in a peacekeeping role; and third was back to Malaysia in 2004, this time to train the Thai Army in counter-insurgency operations against Islamic separatists on the Thai-Malay border.

These deployments taught Dan much about infantry fighting and leadership, but he was finding repeat training boring. So, he did a mortar course before the East Timor deployment, but was retained in D Coy. In 2005, 6RAR was re-equipped with the Bushmaster protected mobility vehicle (PMV), a large, four-wheel drive, armoured truck with a v-shaped hull designed to protect the crew and cargo from mines and improvised explosive devices (IEDs). Dan did a driver/crewman course and became a PMV crew commander in the D Coy PMV detachment.

His fourth deployment was to Iraq in 2006, where a detachment of 6RAR PMVs provided protected transport for a 2RAR task group in al-Muthanna Province in southern Iraq. The principal danger to the PMVs and their crew came from snipers and IEDs. In two-man crews, the crewmen alternated between driving and manning the forward machine-gun usually a 7.62mm MAG58 or a 0.50 calibre.

His fifth deployment was to Afghanistan in 2007 to provide PMV support to Australia’s Special Operations Task Group whose commandos and Special Air Servicemen were searching villages for persons of interest in the al-Qaeda and Taliban leadership.

Corporal Keighran’s military career culminated during his last deployment, his second to Afghanistan, in 2010. On 24 August, at the Battle of Derapet in the Tangi Valley, Uruzgan Province, he served as a mentor to an Afghan National Army (ANA) platoon that was part of a combined ANA/D Coy, 6RAR fighting patrol. Dan risked his life by deliberately exposing himself multiple times to Taliban gunfire so as to identify enemy targets and to draw fire away from Australian soldiers who were treating a severely-wounded comrade.

After he returned from Afghanistan, Dan transferred to the Army Reserve, married his girlfriend, Kathryn, with whom he would have a son, Jack, and took a job working in the mines in Kalgoorlie.

In 2012, he was awarded the Victoria Cross for Australia (VC) for his gallantry during the Battle of Derapet. He became the 99th Australian to have received the VC. The VC changed his life for both good and bad. The award opened up new career opportunities in defence industry and made him a very humble celebrity, but the pressures of being absent from home on endless speaking assignments caused his marriage to fail. He now confesses to being a bit lost and to still be working out who he is and what he stands for.

Dan Keighran wanted this book to present his life, warts and all, in contrast to the sanitised biographical notes released by Defence Public Relations when the VC was awarded to him. This he has achieved very effectively. Some readers may have preferred a more romanticised version, but I much prefer to have been told what his life really was like, even if some bits make the reader uncomfortable. It is both an uplifting tale of courage, perseverance and humility, and of the pitfalls that can accompany fame. I thoroughly commend the book to readers of all backgrounds.

David Leece