30/11/2025 4/2025 #13

Well, where did that year go? I hope this finds you in good spirits. The weather around the country has been up to its usual mischief, I hope all have come though OK. We still have had a woodfire burning from mid-April till December?

Ten days ago, I was wondering what I was going to send out in this edition, 17 pages later I hope you can find something of interest.

The ESP was working well last week I was thinking about PFAS information to put in this edition. After getting tied in knots with all the info coming from all directions and deciding it needed someone with more time than I had to make sense and summarise it. I found a "Defence" propaganda pamphlet (sorry for the cynicism) page 10 and decided to take the easy way out and distribute the propaganda. Santa then sent me an early present via one of our members who is far more knowledgeable than I, on the subject. This letter was first sent on the 3/09/2024 and recently resent as no answer has been forth coming. Page 3 Well worth the read.

Congratulations Lyle Oaklands for 45 years of service. I'm sure there are more members out there that we could congratulate if we knew. Page 13

From Sky News -The Prime Minister is facing calls to apologise after Labor dumped plans to limit the retrospective awarding of defence honours in response to backlash from veterans and their advocates. Page 15

The Queensland Reunion is on page 12.

Vale on page 17

As I thought I had very little content to send you this time I thought you may be interested in some GPS insights. I brought my handheld GPS back in the mid 1990's cost an arm and a leg (\$500) but was used to map water lines and fitting. It has limited use for that as 1cm when looking for a pipe in the ground is a long way. When you dig the other way. In the 2000's I had an Ag Guidance GPS in the then new tractor. (\$10,000) Used both today spreading super. Has more that paid for itself in time and spray etc. saved. Which leads to Christine and I liking to know the altitude as we travel around and the co-pilot getting jack of putting the glasses on to read the handheld GPS. \$39.00 for a sola charged GPS altimeter for the dashboard has made for harmonious travels. The tec behind GPS is amazing. Page 11

Merry Christmas, Glen

Facebook sites.

RAAF Fire and Rescue

RETIRED RAAF FIREFIGHTERS ASSOCIATION

Web THE R.A.A.F FIRE SERVICE (georama.com.au) hosted by Chas Adlard. It is Chas's site where you can find back issues of "Fire Board" and back issues of Pat's Newsletters back to 2011. There's a wealth of information there. Adelaide Reunion - 2022 Reunion - Adelaide (georama.com.au)

Info on the Hobart reunion and copies of all Fire Board issues are at raaffirereunion.com

- Defence newspapers | News & Events | Defence
- Australian Defence Force (ADF) Firefighter Scheme | Department of Veterans' Affairs (dva.gov.au)
- Advocacy Support RSL Australia

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# ADF Mental Health All-hours Support Line

1800 628 036

Call Lifeline on 13 11 14

**Fire Board** 

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Beyond Blue | 24/7 Support for Anxiety, Depression and Suicide Prevention

1300 22 4636

Glen Anderson

0438635159

PO Box 185, Mole Creek, Tas. 7304

glen@raaffirereunion.com.au

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## **PFAS**

## This is the email that accompanied the following letter

Dear Tania Lawrence, Trish Cook (Welcome to seat of Bullwinkle),

I am also incorporating this Email to the original Minister DVA, for his attention.

Request your assistance with the attached email sent last year to Matt Keogh MP and to you Tania, with responses from "Sean Burke | Chief of Staff" with first response and again on second correspondence "I will follow this matter up with Minister Keogh's office for you."

I have not had a reply to date regarding response from Minister Keogh, or via follow up.

The Senate has provided a list of Recommendations, at link below, and the Australian Government has prioritised Firefighters from Point Cook under the "ADF Firefighter Scheme as being exposed to at times unknown chemicals". The Senate now seems to advocate the recommendations provided in my letter as there are many similarities.

https://www.aph.gov.au/Parliamentary Business/Committees/Senate/PFAS per and polyfluoroalkyl sub stances 48P/PFAS48P/Final report/List of recommendations

As it stands and Importantly these Firefighters have been discriminated against. Health and wellness protection for Immediate and generational family members has not been afforded to the ADF Firefighters, unlike that of the F111 Refuel De-seal cohort families.

Request that the Initial letter, be answered, and recommendations proposed be Implemented.

## PFAS – letter 6 pages

Honorable ministers, I request your Bi Partisan support to enable the following (Australian Defence Force Firefighter) submission be adopted in recognizing the roles performed and their Importance to the wider Australia communities in Australia during peace and war times.

ADF Firefighters from (circa) (1979 to 2004) were exposed to extremely high doses of Perfluorooctanoic Acid (PFOA) and Perfluoroctanesulfonic acid (PFOS) and perfluorohexane sulfonate (PFHxS) concentrate, known as Forever Chemicals; Aqueous Film Forming Foams [AFFF] Light Water (AFFFLW). Health and wellness protection for Immediate and generational family members has not been afforded to the ADF Firefighters, unlike that of the F111 Refuel Deseal cohort families. Which is Irresponsible and an area that needs to be addressed on behalf of the ADF Firefighters by the Australian Government and the Department of Defence.

### **PFAS PFOA**

Perfluoroalkyl and polyfluoroalkyl substances (together, are known as PFAS) not found naturally in the environment are a class of man-made chemicals. PFOA and PFOS are the two PFAS that have been the most extensively produced and therefore are the most studied of these chemicals. Both chemicals are very persistent in the environment and in the human body.

The values of ADF Firefighters not being provided appropriate safety equipment, their exposure to and being contaminated by concentrated AFFFLW was in vain, as Personal Protective Equipment (PPE) was available for handling extremely high levels of toxic concentrated chemicals, and were not advised. Defence was aware of the requirements for PPE as early as circa 1983. [1] Early Defence Reports [para.1]

Acknowledgement is sought from the government and Defence to ensure long term health assistance for these affected people and their immediate family members. That the health support is available for 4 to 5 generations Downstream, Genetically Changed due to Contamination (DGCC) of Firefighters. Family members should not be the people that are discriminated from medical due process when evidence of exposure and Indications of toxicity in a two-generation rat study DGCC, [1] Early Defence Reports [para.6] provides evidence. As more scientific evidence becomes available these generational health supports may be lengthened and or reduced as further health evidence and standards come to the foreground.

### **Public Recognition**

The Australian Government recognize the effects and dangers of exposure to forever chemicals to Australians and Australian communities, and have paid out millions of dollars to civilians in compensation. More evidence is being gathered as time marches on, however the crux of the matter is, where did the contaminant originate from, and what did the Australian Defence Force know? ADF Firefighters were the people that were handling copious amounts of concentrated toxic substances of AFFFLW prior to leaching into the Australian environment.

Two phases regarding the Implementation of examining chemicals as priority concerns of stakeholders from, 01 July 2012 and phase two of the Inventory Multi-tiered Assessment and Prioritization (IMAP) commencing in 2016 allowing for rapid intervention and assessment of, one "Perfluorooctanoic Acid (PFOA) and its Direct Precursors to Human health tier II assessment" [2]

### **Predict Future Health Effects.**

Bioaccumulation and toxic effects of per- and polyfluoroalkyl substances (PFASs)

Light water and AFFF "The researchers at the US Naval Research Laboratory gave the concentrates the name of "light water", which the 3M's company registered as its trademark around 1966 [9], as the films made from solutions of these concentrates could float on hydrocarbon fuels. Generically, the product became known as aqueous filmforming foams (AFFF), the name that was later adopted for the entire class of foams that display the film-forming property. Recently, the designation of PFAS (per- and polyfluoroalkyl substances) foams entered the vocabulary"

Bogdan Z. Dlugogorski, Ted H. Schaefer, Compatibility of aqueous film-forming foams (AFFF) with sea water, Fire Safety Journal, Volume 120, 2021,

The potential DGCC effects on; RNA; DNA, Genealogy; are an ongoing concern for Australian Defence Force Firefighters (ADFF) and their immediate families, where exposure to, Perfluorooctanoic Acid (PFOA) and Perflurooctanesulfonic acid (PFOS) via Aqueous Film Forming Foam AFFFLW concentrate, was at all Air bases, and satellite bases around Australia.

### **Health Screening**

### Primum Non Nocere

"Many years ago, when we authors were in training to become doctors, it seemed logical that chemical messengers such as steroid hormones, and Vitamin D were to be understood and respected, and that was our responsibility. We studied physiology through the prism of disease, but the adage 'first do no harm' guided us towards becoming caring doctors, to seek out and correct the underlying cause or causes of ailments." [3] pg,80

Evidence and research show that health problems have resulted from exposures to toxic PFAS concentrate, AFFFLW to the Firefighter cohort. These presumptive Defence service <u>caused conditions</u>, by toxic exposure of AFFFLW is extremely Important to Firefighters and their families. Screening tests have not been conducted for all Firefighters, or their immediate families and/or followed up on with new evidence or Information being widely disseminated to this cohort.

Evidence provides that associations have been found between exposure to PFOA, PFOS and other fluorinated organic compounds which have health effects in humans.

### "CURRENT KNOWLEDGE OF PFAS TOXICITY IN HUMANS"

"Like other chemicals, PFAS are potentially capable of producing a wide range of adverse health effects depending on the circumstances of exposure (magnitude, duration, and route of exposures, etc.) and factors associated with the individuals exposed (e.g., age, sex, ethnicity, health status, and genetic predisposition). Aspects to consider when establishing the health effects of greatest concern are 1) effects for which evidence is the strongest (strength of evidence can come from consistency of effect across studies, strength of effect associations in epidemiological studies, and species concordance, as examples), and 2) effects for which potential impact is greatest (factors contributing to impact can include severity of effect, functional impairment, persistence, and specific age groups that are susceptible, as examples). Brief summaries of candidate PFAS health effects from human and experimental

reports are provided in this section (<u>Figure 1</u>)" "Effects of per- and polyfluoroalkyl substances on human health. Used with permission from <u>European Environment Agency (2019)</u>. Original sources for this figure: <u>National Toxicology Program (2016)</u>, <u>C8 Science Panel (2012)</u>, <u>IARC Working Group on the Evaluation of Carcinogenic Risks to Humans (2017)</u>, <u>Barry et al. (2013)</u>, <u>Fenton et al. (2009)</u>, and <u>White et al. (2011b)</u>" [4]

Toxicity issues and concerns of potential mitochondrial energy, toxic effects on the liver and thyroid hormone circulation reduction. DGCC RNA and DNA Information, evidence "PFOA exposure causes Leydig cell (the cells that *produce androgens*) tumors in rats and modifies Leydig cell steroidogenesis in vitro (37)." [5] pg., 151A

AFFFLW was the greatest film forming foam firefighting agent acting as a detergent film between the combustible products and the gasses given off, however we were advised that AFFFLW was simply nothing more than a highly concentrated detergent which could be used for washing dishes.

As a detergent copious amounts of AFFFLW were used as a cleaning agent to wash and clean out the fire station ablutions, the watch room floors, and the sleeping quarters for mopping and cleaning. The washing of coffee cups, cutlery, crockery, benches, and eating tables in the ready room for day-to-day activities were also cleaned with AFFFLW.

Fire vehicles also leaked AFFFLW onto the floors of the truck parking bays. In the 1980s modifications were made and placed onto the P4 Crash Fire vehicles to mitigate AFFFLW leaking, causing corroding, and damaging the chassis. The modification rested on the chassis which diverted the AFFLW to fall to the concrete and bitumen.

Where are we today with PFAS PFOS and the plethora of evidence? The contamination of ADF Firefighters and their family members due to clothing being contaminated with AFFFLW concentrate. "As former RAAF firefighter I can attest that my former colleagues and I were in directly bodily contact with AFFF during almost every shift that we undertook during our service career. "[6] pg4, para 2

The wearing of Fire fighter clothing which was contaminated was laundered at home in the family washing machines. "This contributed to indirect AFFF contamination of the firefighter and, possibly led to AFFF contamination being introduced into the family home when the clothing was washed." [6] pg4, para 3]

Worldwide epidemiological studies report negative effects that PFAS have on human health including; infertility, steroid hormone perturbation, thyroid, liver, and kidney disorders, and metabolic disfunctions.

### **Material Safety Data Sheets**

AFFFLW was used widely and in copious amounts by ADF Firefighters around Australia at many military Air bases including; RAAF Point Cook Victoria; RAAF Point Cook Fire school Victoria; RAAF base Williamstown NSW; RAAF base Amberley; Fire Training grounds RAAF Security and Fire School Amberley; RAAF base Pearce Western Australia; RAAF base Townsville: RAAF bases Edenborough; Laverton; East Sale; Darwin and Learmonth have provided fluorochemical contaminated ground plumes like that provided for ARMY Aviation Oakey QLD. [7]

10.1.3 Hazardous material requirements are defined as a material having one or more of the following characteristics:

a), b), c), d), (e) cause first degree burns to skin in short-time exposure, OR is systemically toxic by skin contact. (f) ..., mists, (g) sensitizing, (i) special characteristics which in the opinion of the manufacturer could cause harm to personnel if used improperly. Significance is that this Information, all though made available to Defence, was not provided to ADF Firefighters who handled and were contaminated by AFFFLW. Table 1 clarifies the requirements for which all items must be Identified and certified. Further evidence can be found at Fed. Std.No.313B April 14, 1983 [8]

### **Defence Specifications on AFFF**

MilSpecs for AFFFLW fire extinguishing agent liquid concentrate 6% for fresh and sea water provides specifications on "Mil-F-24385 was introduced in November 1969, 24385A in May 1977, 24385C in March 1981 and 24385E in November 1990." Bogdan Z. Dlugogorski, Ted H. Schaefer, Compatibility of aqueous film-forming foams (AFFF) with sea water, Fire Safety Journal, Volume 120, 2021, (pg2)

Liquid concentrate AFFFLW fire extinguishing agent, military specifications with amendments to these military specifications prior August 2003 providing Revision history, from the Base document dated 21 Nov 1969 PDF, Revision History, where D document, amongst others provides for tests on Environmental impact at 4.7.12. and Toxicity [pg. 14 4.7.12.1 through 14.7.13] and MSDA requirements (pg. 26 para 5.5).[9]

Military Specification MIL-F-24385D provides Scope and covers the specification "requirements for aqueous film forming foam (AFFF) liquid concentrate for fire extinguishing agents consisting of fluorocarbon surfactants and other compounds" ......." Certain proportioning equipment may produce AFFF solutions of extreme concentrations......" [10]

### **Firefighter Extraordinary Circumstances**

ADF firefighters were handling and placing 180 gallons (818.296L) of pure AFFF concentrates into firefighting receptacles; including fire extinguishers, that would then go through the process to reach the adjusted (94:6, percentage) of the concentrates when mixed with water where the proportion ratios were adjusted to 94.6; a 6% concentrate assembly to generate in the premix and aerated mechanically, where the solution made by mixing concentrates with water forming foam at the discharge outlets.

### **Continuation Training**

In accordance with Defence Instructions continuation training in handling and discharging fire extinguishers was to be conducted and provided to all ranks up to and including the rank of Squadron Leader. The continuation training and use of first aid firefighting equipment was carried out as required for all on base personnel including discharging of foam extinguishers. All extinguishers were replenished at the store rooms of the Fire stations where AFFFLW concentrate, was measured out, and then added to the extinguisher.

Defence has conducted numerous environmental reports on these toxic plumes, contamination of soil and ground water from fire training sites, where application of AFFFLW concentrate and, 6% was left to dissipate on the ground surface under its own carbon-based time line. Importantly, drains and grassed areas in front and at the rear of 'Fire Stations and the living quarters, at bases around Australia were saturated by copious amounts of AFFFLW when discharging foam extinguishers.

AFFFLW was tested on all Fire Vehicles to ensure suitability and to maintain correct refraction by using a refractometer, which was required to return a refractometer reading to enable operational usage. Readings under this figure was drained from the vehicle storage tanks and siphoned off into 44-gallon (200L) drums and 20L carry drums to be used in practice drills and some fires. Alternately fire vehicles with low AFFFLW refractometer readings would carry out practice modulating and dispense and scatter foam from the roof and bumper turrets until all 180 gallons of foam was exhausted.

### Why was it Important to aid and remediate contaminated sites

All spillage of AFFFLW was washed down the drains and water run off courses and allowed to dissipate accordingly. There was no capture or treatment membranes to mitigate the environmental exposure and contamination of AFFFLW to the ground surface. ADF Firefighters were not aware of or provided any Information as to the toxicity of the AFFFLW concentrate.

### **Legacy Chemistries and Aqueous Film Forming Foam**

3m Science Applied to Life provides Information on Perfluorooctanoic Acid (PFOA) and Perfluoroctanesulfonic acid (PFOS) and their proactive stance to remediate contaminated sites and answer questions posed by communities regarding (PFOA) and (PFOS)

Statements on 3Ms news relating to flurochemistry under "VIEW STATEMENTS" All years from 'field selection' provides Information dating back to Feb 19,2019 – Jun 22, 2023 on stewardship. [11]

## **Exposed and then Hidden Dangerous Chemicals PFOS PFOA (PFAS)**

"The New Yorker" makes available an article on the Dangers of Forever Chemicals, "The company found its own toxic compounds in human blood-and kept selling them. "By "Sharon Lerner, May 20, 2024". [12] [p1] "in 1997, Johnson wanted Hansen to test human blood for chemical contamination."

### Conclusion

ADF Firefighters exposed to toxic suppressant chemicals may not notice the side effects for years, so the connection between their medical issues and their work environment may be difficult to assess.

Evidence gathered in Australia and overseas directs that <u>all researchers agree</u> that workers who manipulate or use products containing PFAS are at an increased risk of health problems, yet there is no health opportunity provided for their Immediate families in cases of DGCC signs, or whether the signs show right away or emerge years later.

The Point Cook Fireftr Scheme accepts that firefighters RAAF Base Point cook; 01 January 1957 and 31 December 1986 were exposed and contaminated to a wide range of hazardous substances, and recognises potential health effects.

[13] These Firefighters and their Immediate families are not afforded DGCC.

Australian Government Repatriation Medical Authority [14] provides Introduction to the RMA. Type in Fire and select the search bar.

Examples of potential exposure factors at base of page.

Do the Statements of Principles include factors for firefighting or the occupation of firefighter?

"The RMA is aware of concerns relating to firefighting. The occupation of firefighting, as well as chemicals or activities to which firefighters might be exposed, are considered when investigating relevant conditions. This has led to the development of a number of exposure factors which are either specific to, or could logically be linked to, firefighters." [15] par, 1

### Recommendations

- 1. That ADF Firefighters under the Defence Force Fire Fighting Scheme, be afforded DGCC for their Immediate families in accordance with their service occupations of known and Identified exposures. The "<u>ADF</u> <u>firefighter scheme</u>. The ADF Firefighter Scheme provides support for Australian Defence Force (ADF) firefighters who served at RAAF Base Point Cook between 1 January 1957 and 31 December 1986, however stops short in protecting immediate families and potential DFGCC.
- 2. Provide an <u>ADF Firefighter Exposure to PFAS PFOS Scheme</u> for those personnel and their immediate families like that of the ADF Fire Fighter Scheme who were exposed and contaminated by AFFFLW and Include support for DFGCC.
- 3. Exposure dates to AFFFLW from 1979 through to ceasing the use of AFFFLW be designated the appropriate time frame.
- 4. Provide a Health and Wellness Medical Scheme to all ADF Firefighters, assist intergenerational family members who have had their Immediate families exposed due to contamination of ADF Firefights, who were exposed and handled toxic chemicals from known and un-known substances, including AFFFLW until its withdrawal.
- 5. Any health effects caused to Intergenerational family and members, to Include associated specialist appointments and transport be provided to family members with all costs to be borne by the Australian government and Defence.
- 6. Provide a Web Site register for all ADF Firefighters and immediate family members to sign in via a (DVA) or MY-Gov type independent system to track their medical outcomes, and to provide the most up to date scientific evidence and allow follow up medical and professional assistance at no cost.
- 7. Release Information to these ADF Firefighters and families through the ADF Firefighter ADFFFR Web Site Register to be provided by Defence and the Australian government,

### Provide quick links to

Ensure the most up to date medical and scientific data is available on all chemicals;

Government to government, and government to and from civilian Information relating to Publications and report, material regarding the chemicals that they ADF Firefighters and families were exposed Including potential DFGCC;

Fields for Research and studies to determine exposures and possible Health problems;

All previous and latest reports and Information from standing committees and parliamentary committees' outcomes that relate to all chemical exposures including scientific reports, and all evidence relating to any ADF Firefighting activities.

What time frames are there for these committees to re assess and visit new outcomes from evidence-based Information and Include obligations to the parliament to protect these people and the ADF Firefighters ongoing life spans?

### References

 $1\ \underline{https://classic.austlii.edu.au/au/journals/PrecedentAULA/2018/30.html\#fnB1}$ 

https://www.industrialchemicals.gov.au/sites/default/files/Perfluorooctanoic%20Acid%20%28PFOA%29%20and%20its%20Direct%20Precursors Human%20health%20tier%20II%20assessment.pdf

3 https://dgreatbiologyreset.com/ANDERSON-GRIMES-Vitamin-D3-and-the-Great-Biology-Reset-D3DE.pdf

- 4 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7906952/
- 5 https://pubs.acs.org/doi/epdf/10.1021/es022253t
- 6 Senate Inquiry Submission into Contamination of Australia's Defence Force facilities and other Commonwealth, state, and territory sites in Australia Signed this day 01 Feb 2016
- $7\ \underline{https://classic.austlii.edu.au/au/journals/PrecedentAULA/2018/30.html\#fnB1}$
- 8 http://everyspec.com/FED-STD/FED-STD-313B 24978/ select orange Download File Tab
- 9 https://quicksearch.dla.mil/qsDocDetails.aspx?ident number=17270
- 10 https://quicksearch.dla.mil/Transient/F463CD1A6B234B69855ED8D3997FF9D1.pdf
- 11 https://pfas.3m.com/legacy-chemistries-and-aqueous-film-forming-foam
- 12 https://www.newyorker.com/magazine/2024/05/27/3m-forever-chemicals-pfas-pfos-toxic
- $13\ \underline{https://www.dva.gov.au/sites/default/files/files/about\%20dva/budgets/2021-22/supporting-australian-defence-force-firefighters.pdf}$
- 14 http://www.rma.gov.au/
- 15, par1]http://www.rma.gov.au/faqs/most-frequently-asked-questions/do-the-statements-of-principles-include-factors-for-firefighting-or-the-occupation-of-firefighter/

Personal information has been removed by request.

03 September 2024

The page layout may have altered when pasted into the newsletter. - Glen

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## **PFAS** INVESTIGATION AND MANAGEMENT PROGRAM



### PFAS INVESTIGATION AND MANAGEMENT PROGRAM SNAPSHOT - August 2025

### **DEFENCE ESTATE**

Since 2004, Defence has reduced the use of legacy firefighting foams containing PFAS across the Defence Estate. Defence has transitioned its fire vehicles and handheld and portable extinguishers to a PFAS-free foam. To prevent future contamination, Defence is undertaking a program of works to remove foams containing PFAS from the estate.

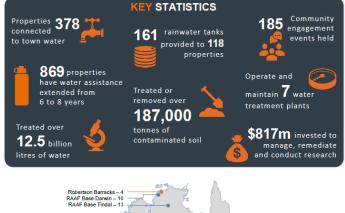
### **ONGOING MONITORING**

Defence regularly monitors for PFAS on and around impacted sites. Monitoring results help Defence understand how PFAS is moving in the environment. This information also guides Defence's remediation and management actions.

### REMEDIATION ACTIVITIES

Remediation works targeting water, soil and other materials are underway or completed at Swartz Barracks, Lavarack Barracks, HMAS Cerberus, Jervis Bay Range Facility and RAAF Bases Pearce, Williamtown, East Sale, Edinburgh, Tindal, Richmond, Wagga, Darwin and Townsville.

Remediation works are scheduled to commence in the coming months at HMAS Albatross, Blamey Barracks, Bandiana Military Area and RAAF Base Amberley.



## **COMMUNITY EVENTS**

Defence has held 185 engagement sessions to keep communities informed. Recent events

- 24 May 2025 RAAF Base Pearce
- 13 February 2025 Jervis Bay Range Facility and HMAS Creswell
- 5 December 2024 RAAF Base Williamtown
- 27 November 2024 Swartz Barracks
- 16 October 2024 RAAF Base Tindal
- 15 October 2024 RAAF Base Darwin

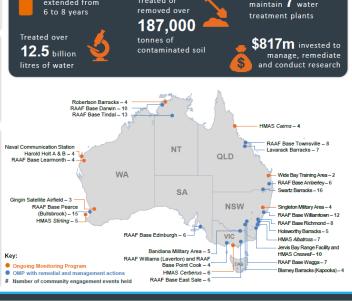
### LONG TERM MANAGEMENT

When all recommendations within the PFAS Management Area Plan for a site have been addressed, the site will transition from the investigation and remediation phase to long term management and monitoring. Monitoring results will continue to be published on the Defence website.

### **RESEARCH AND INNOVATION**

Defence has worked with Australian and international research groups and industry partners to support PFAS investigation and remediation activities.

Defence is currently working with industry on undertaking research and technology projects at HMAS Albatross and RAAF Bases East Sale and Pearce.



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### Global Positioning System (GPS)

The GPS system is one of four Global Navigation Satellite System(s) GNSS. GPS is a United States of America system and the one I will concentrate on. Russia, China and Europe have their own systems, along with two regional systems from Japan and India. There is also "satellite-based augmentation system(s) used to increase the accuracy of GNSS. These work in conjunction with ground stations that "Know" their position exactly and can detect any distortion, caused by the atmosphere. The stations can then broadcast a correction signal. This usually requires a subscription to receive the correction signal.

GPS as an idea was born in 1973 as a project started by the USA Defence Department and the full constellation of 24 satellites were operational in 1993. Initially civilian use limited to around 100m accuracy using a deliberate error, the Selective Availability (SA) system. This was temporarily turned off during the Gulf War due to a shortage of military GPS units. SA was turned off on 1<sup>st</sup> of May 2000.

In 2000 GPS was accurate to around 5m, receivers that use the L5 band are now accurate to 30cm with highend receivers accurate to 2cm. Smartphones can be accurate to 5m or better with Wi-Fi positioning. Some phones are useless without the Wi-Fi signal as tourists following their phones directions regularly think the local tourist cave is up our farm track. Our area has no phone signal. A full complement of 24 GPS satellites are scheduled to broadcast the L5 signal by 2027.

The GPS satellites carry very stable atomic clocks synchronized all GPS satellites and ground-based clocks. The clocks in space run faster when viewed from earth by around 38 microseconds (one millionth of a second) a day. This error if not corrected could lead to a 10km error per day on earth if not corrected.

Each satellite carries and broadcasts an accurate record of its own position and time continuously. Based on data received from multiple GPS satellites receivers can calculate its own 4-dimensional position. Reception of this signal is "line of sight" so hills, trees or tall buildings can adversely affect reception.

Modern Agriculture GPS receivers in conjunction with gyros and accelerometers to account for the sway and incline of the receiver on top of a cab, together with a correction signal allow for automatic steering with 2cm's accuracy repeatable year to year.

This allows for "tram track" planting with tractors only travelling the same route each time avoiding soil compaction in the growing area. Crop yield from different parts of the same paddock can be mapped automatically by harvesters and corrected with variable rate fertilizer application or better drainage.

My non corrected unit in the tractor can drift a metre during lunch. Is the \$39 altimeter accurate? It's OK, but there is more chance of flying into a mountain than using it to fly into a busy airport.

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## The NEXT Reunion

## Queensland

28th-31st October 2027 (TBC)

RAAF Firefighters Reunion Brisbane 2027 | Facebook your invited to join.

A meeting was held at Ipswich CSI on Saturday 2<sup>nd</sup> of August 2025

Committee Members are:

Keran Carsburg (Chairman), Anne Down (Secretary), Gordon McCartney (Treasurer), Brian Thorburn (Deputy Chair), Brian Down, Lindsay Crouch, John Ranizowski, Steven Swan.

Proposed Reunion dates are 28th-31st October 2027.

The committee is gathering information on three sites.

- 1. Rydges South Bank Brisbane,
- 2. Sea World Resort (Gold Coast)
- 3. and possibly a Cruise.

Once they have the information it will be collated into three flyers with all details of what is available for each site. It will then be placed on the Facebook site to conduct a poll to determine the most popular site (possibly February next). We will then start negotiations with the selected site venue manager.

As mentioned, there is a Facebook page (2) RAAF Firefighters Reunion Brisbane 2027 | Facebook

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### From AirForce News 04 September 2025



At one stage during FLTLT Lyle Oaklands' 45-year career, he and his two sons were all firefighters in Air Force. **FSGT Mark Eaton** reports.

WHEN FLTLT Lyle Oaklands first walked into a Defence Recruiting office in 1979, he could not have imagined it would lead to a career spanning two generations of service and culminating in one of Defence's rarest honours.

Now, 45 years later, that journey has been formally recognised with a second Federation Star.

The milestone was celebrated during a ceremony at 37SQN, RAAF Base Richmond, where family, friends and colleagues joined FLTLT Oaklands.

ACAUST AVM Glen Braz presented the sixth clasp to FLTLT Oaklands' Defence Long Service Medal, describing his career as "an incredible achievement in anyone's language".

"It's a testament to his dedication, but also to the support of family and loved ones who've been there throughout the journey," AVM Braz said.

Enlisting as a firefighter, FLTLT Oaklands went on to serve in postings supporting operational deployments and exercises, and helping shape the evolution of today's ADF.

"Joining the Air Force was something I always wanted to do," FLTLT Oaklands said.

"My brother was a Navy clearance diver, another served in the Army as a musician and I had 10 aunts and uncles who enlisted during WW2."

FLTLT Oaklands has witnessed significant change across Defence.

"Conditions have improved so much – housing, promotion pathways, pay. It's amazing how far we've come since the early days," he said.

After decades as a firefighter, FLTLT Oaklands commissioned as an operations officer and found renewed purpose in mentoring and leadership.

AVM Braz praised FLTLT Oaklands' contribution to the Air Force's people and capability.

"Your service over many years is a testament to the journey you can take through an Air Force career, starting as a firefighter and ending up where you are today with a commission," AVM Braz said.

"When you look at the medals on someone's chest, you're seeing decades of dedication and sacrifice. What FLTLT Oaklands has given to Air Force matters – and it's made a lasting difference."

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One of FLTLT Oaklands' proudest moments came when both of his sons also joined Air Force as firefighters.

"We were the only father and two sons in the firefighter mustering at the same time – that's something no one else has done in RAAF fire service history. I was incredibly proud," he said.

Now serving with 37SQN, FLTLT Oaklands said his passion for the role remains as strong as ever.

"I've had incredible support throughout my career, especially after commissioning. I've worked with a great team, learned a lot and enjoyed every minute," he said.

.....

Lyle is even on our email list. Congratulations Lyle

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### **SKY NEWS LIVE**

### 2:58PM Monday, November 24th, 2025

The Prime Minister is facing calls to apologise after Labor dumped plans to limit the retrospective awarding of defence honours in response to backlash from veterans and their advocates.

The Defence Amendment (Defence Honours and Awards Appeals Tribunal) Bill 2025 was withdrawn from the Senate notice paper on Monday morning.

Once a Bill has been withdrawn, it can no longer be debated or voted on, effectively sending the government back to square one of the legislative process.

Labor had proposed limiting the scope of review for acts of bravery to the 20 years following an operation, a move lashed by veterans as imposing a 'use-by-date' on Remembrance.

Current rules enable the DHAAT to reconsider actions dating back to World War Two.

There is no limit on who can apply for a review.

As reported by Sky News, advocates accused the government of seeking to cut down on paper work and of failing to adequately consult veterans on the changes.

Shadow Veterans' Affairs Minister Darren Chester is calling on the Albanese government to apologise to the Defence community for failing to consult on the changes.

"This is a good result, but it's come way too late," Mr Chester told Sky News.

"The Prime Minister and Veterans' Affairs Minister should apologise for the stress and anxiety they've put our veterans and defence personnel community through in recent months".

A Parliamentary inquiry examining the laws delivered its final report on Friday. It recommended the Department of Defence, which was the only body to endorse the reforms, undertake further consultation to hear concerns from veterans.

Veterans Affairs Minister Matt Keogh argues there is still a need to modernise the Defence Honours and Awards Appeals Tribunal.

"The Bill was crafted to respond to concerns raised by the Tribunal itself in its decisions and annual reports on the risks associated with decisions being made when it is difficult, if not impossible to refer to objective and independent evidence," Minister Keogh said in a statement.

"The Government acknowledges the work of the Senate Committee in conducting its inquiry into the Bill and will work with all parties and the veteran community on ensuring the Tribunal and its functions remain fit for purpose," he said.

"I look forward to engaging with all stakeholders on progressing constructive consultation on these matters, while continuing to progress the implementation of the Royal Commission into Defence and Veteran Suicide's recommendations at pace so that our Defence, veteran and family community receive the supports they need and deserve".

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The government narrowly avoided an attempt by Coalition and Crossbench senators earlier this month to forcibly remove the Bill, which if successful would have inflict a rare defeat for Labor on the floor of Parliament.

Plans were in train to attempt another vote this week, but Labor's withdrawal of the Bill means it will not be required.

Independent Senator David Pocock argues the Bill should be abandoned for good, describing it as an "insult to veterans and their families".

"The Senate should not be dealing with a Bill that has no consultation and no support," he said.

"I think (pulling the Bill) is a sensible thing to do".

A leading criticism was that the laws would have prevented Ordinary Seaman Teddy Sheean and Private Richard Norden, the two most recent posthumous recipients of the Victoria Cross, from receiving the honour, as their gallantry occurred well before the 20 year cut-off.

Nationals Senate Leader Bridget McKenzie said the Bill is "completely unwanted, unsupported and indefensible".

No timeline for consultation on other changes has been set.

It is not clear when, or if, a new Bill to reform the DHAAT would be introduced in the future.

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 Wayne
 GREGORY
 28/10/2025
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