

# Infralog



## CFS Infrastructure and Logistics Update:

### Issue 33 - March 2013

Dear Reader,

A number of people have expressed their disappointment that Infralog is no longer produced on a monthly basis. Unfortunately due to increased staff workloads it is no longer practical to produce a monthly publication; the intent now being to produce it at least bi-monthly. This said, we remain committed to keeping you informed about what is happening in the world of CFS I&L which is invariably lots. Read on to find out what.....

Regards,

**Arthur Tindall AFSM**

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Since the last Infralog:

### [VEHICLES AND EQUIPMENT, \(V&E\)](#)

(V&E Team currently comprises Sandy Paterson, (Manager), Andrew Plush & Tony Kuiper. Wayne Byrne manages light fleet including leased vehicles and reports to MIL)

#### **Recent Deliveries**

Stirling Brigade received the new 24 Prototype featured in Infralog last year.

Mount Remarkable Group received a new Bulk Water Carrier.

Strathalbyn Group received a Hook Lift Truck and construction of a BWC POD is due to commence in coming weeks.

Furner received a refurbished 34.

#### **12-13 New Appliance Program**

The first nine new 34's for this year have been delivered to Adelaide and are currently undergoing final fit-out including the installation of rear bucket seats. Unlike the seats fitted in previous years these seats are manufactured in Adelaide and have tilting backrests so that the storage space behind them can be easily accessed.

The remaining fourteen 34's are all in transit with seven expected into Adelaide by Friday March 8 and the final seven by Wednesday March 27.

One appliance already delivered is the prototype 34 which has an east-west pump, a rearward facing 60m live hose reel and 2 dead hose reels. The intent is to display this vehicle as widely as possible before it is delivered to its host Brigade.

One RCR Vehicle, one 14, a Bulk Water Carrier Hook-lift Pod, Urban Pumper and Type 44 are still under construction. The Type 44, which has generated a huge amount of interest, is due in Adelaide around mid-year. It will be fitted with an aluminium tank and a Darley 2.5AGE pump.

#### **Other Issues**

##### **Torque Rod Bolts**

Following an incident involving Hallet BWC it has been identified that torque rod retaining bolts on some of our Isuzu FVZ1400 6X4 chassis may not have been tightened correctly. Brigades with these vehicles have been asked to get them checked.

## Under Cab Insulation

Brigades operating appliances built since January 2008 on the current shape ISUZU 4X4 chassis built should, by now, have had their under cab insulation removed. Following a small number of engine bay fires, two of which caused significant damage, it was discovered that the engine insulation used could catch fire in certain conditions. On road testing of the appliances with the insulation removed showed minimal difference in regards to noise level and temperatures in the cabin. Consequently the decision was made to remove the material in order to ensure CFS suffers no further similar engine bay fires. This applies to about 110 vehicles across CFS. Interstate agencies were advised of CFS's actions.

## Tyre Sizing

The tyres fitted as standard to our Isuzu FTS800 trucks, 10R22.5, are becoming increasingly difficult to get and only come in a limited range of tread patterns. We are currently investigating the feasibility of fitting 11R22.5 tyres which are more readily available and come in a range of tread patterns. We have engaged a transport engineer to progress this issue as whilst the 11R22.5 tyres will safely fit on the existing rims they are 3% larger in diameter than the 10R22.5 tyres and speedometers are not permitted to indicate a speed that is below the actual road speed. The first step is to determine if there is sufficient tolerance in the speedometer to permit the larger tyres or to have the speedometer recalibrated.

If we can address the speedometer issue the next step will be to assess the implications of the larger wheels on braking performance and vehicle grade ability because the larger diameter will make the gearing 3% higher which may have an adverse affect to on and off road performance. Only a transport engineer can undertake this process as certification and fitment of a compliance plate will be required

We will keep you informed of progress in future editions of Infralog.

## Tyre Age

CFS operates its fleet of appliances for twenty years. Over that period some appliances average as little as 1000 km per year. The tyres on these vehicles will never wear out through use but can fail through ageing. Replacement of tyres based on age is an issue that



has recently come to the fore. Unfortunately it is almost impossible to obtain or give a definitive answer on what a tyre's lifespan should be as tyre degradation is caused by a number of factors including climatic conditions such as exposure to sunlight and heat, lack of use, impact damage and under inflation. Reports of tyre failure on our fleet of around 1000 vehicles and trailers are rare and as a result we are lacking in objective data to work with. (Lack of reports could be because it's a rare event or it could be because people don't bother to report incidents.)

The photo on the left shows a tyre off a CFS appliance that almost certainly failed due to age. Indications are that the tyre was eighteen years old. Fortunately the driver managed to control the vehicle when the tyre failed and bring it safe to a stop. The consequences had he failed to do so could have been catastrophic. The brigade reported the incident and in doing so highlighted the risk we are

exposed to given the length of time we operate our fleet for and the limited amount of use some of our appliances get during that time.

As a result of incidents we are aware of including one in Region 6 several years ago, one in Region 1 last year and this incident Brigades are instructed to inspect the tyres on their appliances to ascertain their age. This is achieved by looking for the Tyre Identification Number (or serial TIN) that shows the date of manufacture of a tyre. The TIN is located on the sidewall of the tyre and is normally found adjacent to the flange of the rim. The last three

digits of the TIN for tyres made pre 2000, (e.g. “128” denoted the 12th week of 1998 or 1988) or the last four digits for tyres made post 2000, (e.g. “1207” denotes the 12th week of 2007) shows when the tyre was manufactured.

When tyres on the front axle, namely steer tyres, are identified as being ten years or older they should be replaced immediately as they pose an unacceptable risk to those operating the appliance. The remaining tyres on the vehicle, including the spare, that are identified as being ten years or older should also be replaced at the first opportunity irrespective of how much tread remains. These tyres pose less of a risk due to the dual rear tyre configuration used on CFS appliances.

All tyres need to be inspected on a regular basis but tyres that are between six, (6), and ten, (10), years old should be checked at least monthly to ensure there is no damage to the tyre, e.g. impact or staking damage, the tyres are inflated to the manufacturers recommended tyre pressure for that vehicle and there is no significant surface cracking on the tyre carcass. If there is any evidence of tyre deterioration, or if you are uncertain, expert advice should be sought.

A recent incident where a spare tyre caught fire as a result of a build up of debris in the rim further highlights the need to check spare tyres on a regular basis. Out of sight out of mind may be the case but it is critical that the spare is removed from the appliance from time to time, not only to check tyre condition, but to ensure the winch operates effectively and isn't seized.

### **CFS State Vehicle and Equipment Committee**

The State V&E Committee met on Saturday 23<sup>rd</sup> February at Thebarton. The Committee elected a new chairperson, Andrew Hogg from R2 after Robert Maddern, from R6 declined to stand again after having held the position since 2001. Rob was thanked for his excellent contribution to the committee as Chair. He will remain as a member.



The Prototype 34 with rearward facing 60m hose reel and twin “dead” reels was displayed and comments sought. The feedback received was extremely positive and it was agreed that the opportunity should be taken to display the appliance as widely as possible. A decision has to be made by the end of March as to whether this design will be produced next financial year or the current two hose reel design.

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A diverse range of issues were discussed at the meeting including outstanding Isuzu recalls, a new one size fits all coupling key, separation of Storz couplings, fitment of a water spray on the appliance spare wheel, tilting rear bucket seats, resolution of Hino B pillar cracking issue, lack of engine braking on automatic Pajeros, fitment of snorkels to logistic vehicles, provision of battery chargers for new appliances, provision of tyre inflation equipment and fibreglass canopies on logistics vehicles.

### **BUILDINGS & FIXED ASSET MANAGEMENT**

*(Building and Construction Team: SAFECOM Manager Building & Construction - Mike Lynch, SAFECOM Manager Asset Services – Paul Sargent, CFS Project officer Operational Facilities, Sandy Pope)*

Preparation of a 3, 5 and 10 year state-wide strategic asset replacement plan for CFS buildings has commenced with the Infrastructure and Logistics team having received building replacement priority lists from each of the Regions and the Training Centre.

Meetings with Regional Commanders have commenced to discuss their priority listing and to gain an understanding of their reasoning. These meetings will continue until all Regional Commanders have been given the opportunity to meet and discuss their proposals in detail.

Or thanks go to the Regional Commanders for the time and support given during this process as their contribution is critical to ensuring that an achievable strategic asset replacement plan can be developed based on the anticipated building replacement funding.

### Update on Current projects

#### Region 1

**Echunga** – Extension of Lease & Licence approved. Documentation being drafted.

**Eden Hills** – New Operations and Appliance building – the project is nearing practical completion and the Builder is currently preparing relevant documentation to allow the Brigade to take possession of the site. The consultants have attended site for the purpose of noting defects. This list will be circulated to allow the Builder to ensure that a safe and satisfactory completed product is provided to CFS.

**Hahndorf** - Extension of lease being negotiated.

**Littlehampton** - Extension of Lease & Licence approved. Documentation being drafted.

**Montacute** – New Appliance building. DPTI are continuing to communicate with SAFECOM to ensure all building and land development requirements are satisfactorily met. Consultants are continuing to work with CFS to ensure all local Brigade requirements are met. Provisional development approval granted.

**Mount Barker** – Extension of lease being negotiated.

**Parndana** – KI Group Appliance Storage – 30m x 10m shed for pre positioned appliances. Surveying Consultants attended site to provide preliminary documentation satisfactorily to amend existing DAC Application. Regular communication with the Regional Commander is continuing through this process. It is anticipated for an Engineering Consultant will be engaged in the near future.

**Stirling** – land acquisition - The Stirling Brigade has agreed to relocate to the proposed SA Water site. SAFECOM are continuing to work through the process to acquire the agreed parcel of land.

**Woodside** – Lease being finalised. New shed to house Group BWC.

#### Region 2

**Concordia** – New Licence drafted and comments have been received from the Council. Document now with the Crown Solicitor for preparation of response.

**Lyndoch** – New Operations and Appliance building – All building works are complete and defect rectification is near complete. The Brigade has taken full possession.

**Mt Torrens** – New Operations and Appliance building – Building works are underway and approximately 20% complete to date. The building works are on schedule and forecast expected practical completion early April.

**Port Victoria** – New station: Further negotiation with local authorities are in place to resolve outstanding issues. No design changes to date and the project is forecast to commence in the 2013/2014 financial year. Waiting for Crown Lands written approval for the rededication of the site to the Minister – only verbal approval received at this stage.

**Region 2 HQ** – New Lease completed and signed by all parties.

### Region 3

**Coonalpyn** – Land sub-division and rededication to the Minister. The project forecast to commence in the 2013/2014 financial year.

**Palmer** – New Operations and Appliance building – Building works are now underway and approximately 40% completed to date. The building works is on schedule and forecast expected practical completion early April.

**Rockleigh** – Land: New private Site identified and initial negotiations have been held with the owner.

### Region 4

**Brinkworth** – Free standing vehicle garage (6 x 6 metres) – Project is complete and the Brigade is now using the building. Minor defects have been recognised and the Builder is currently in the process of rectifying the defects.

**Farrell Flat** – New station – Options for land have been presented to CFS for comment.

### Region 5

**Keith** – Negotiations for use of showgrounds shed commenced with owners.

**Kongorong** – Subdivision of station site for new cricket nets being completed.

**Millicent** – Land for GCC. No progress at this time.

**Nangwarry** - New Appliance building. The building and defects period are complete. The Brigade has taken full possession.

**Stewarts Range** – New Site purchased and settlement has been finalised.

### Region 6

**Tumby Bay Air Operations** – New building with 2 appliance bays and storage bay - Minor modifications are required to the design as a result of storm water drainage issues. Confirmation and acceptance from local council is required.

## TELECOMMUNICATIONS

(CFS Telecommunications Team - Manager Telecommunications – Mario D'Agostino and Telecommunications Support Officer, Marilyn Hughes)

### Replacement and upgrade of GRN Radios in CFS Region 5

Region 5 Planning Officer Jason Drewitt is in the process of upgrading GRN portable radios in R5. To date more than half of the regional users have been allocated XTS2500 portable radios and have been using them for operational duties during this fire danger season. Delays were experienced in the process due to operational activity within the Region.

CFS Telecommunications looks forward to completion of this stage of the GRN upgrade with the roll out of radios in Region 5 being the culmination of work over a five year period that has seen the replacement of every radio on the Government Radio Network for Country Fire Service.

### SAGRN Upgrade

The Network has been upgraded at Berri with the installation of 3 new channels aimed at reducing the risk of voice network congestion during day to day business and during incident operations.

The new channels at Berri cannot be activated until additional Broad Band Amplifier upgrades are also completed at Ramco and Morgan. Planning for additional "Channelised" Repeaters to be installed at these sites is currently underway. The "Channelised" Repeater

at Cadell Training Centre will be removed from service and a local area repeater will be installed in its place so as to also improve communications in this area.

Expressions of interest for the SAGRN network upgrade to digital have now closed The EOI was released in mid December last year with the Evaluation then Discovery Phase now about to commence.

### Approved installers

A Registration of Interest (ROI) was released on 11/2/13 on Tenders SA seeking registration from those wishing to become an approved GRN installer, see ([www.tenders.sa.gov.au](http://www.tenders.sa.gov.au)). The ROI has no closing date but people who may be interested in becoming approved installers are being encouraged to apply within the first 30 days so a new register can be prepared.

### Common Code- Plug

Following talk-group map reviews, Public Safety facilitated discussions to explore the feasibility of a common code-plug were undertaken. A paper has been drafted which outlines the outcomes of the discussions. This will be used for consultation with senior management and Volunteers via the State Volunteer Telecommunications AC. The outcome of these discussions will be fed back to the Attorney Generals for further consideration. If accepted the development of the new digital code-plug will commence which will bring us another step closer to transitioning to P25 digital.

### VHF Radio

Fireground AVL using VHF radio - Further investigation is being conducted into the viability of using GPS equipped VHF digital radios to provide vehicle location information back to sector/division controllers in a command vehicle via a mobile device (tablet). The information would be overlaid over a map. This will allow management of vehicles and individuals with a portable on a fireground by allowing them to be tracked. Further information is being sought on this concept.

### Telecommunications Database

The GRN Fleet Map has been stored in an Access database. This has now been transitioned to the TAS database and a Telecommunications "tab" added. Vehicle Maintenance, Organisation and Member data base screens are being modified to show where Telecommunications equipment is assigned. This will allow us to maintain an accurate and visible data base of our radios terminal equipment which will also assist in speedier identification of CFS personnel when an emergency call button is activated.

### Paging

The turnover of pagers continues to increase as the original Samsung pagers purchased by CFS reach the end of their operational life. When a Samsung pager is returned it is now replaced with an Apollo pager.

### CFS Pagers Sent Out (January 2013)

Region	R1	R2	R3	R4	R5	R6	HQ	TOTAL
January	37	43	15	68	27	32	4	226

### MANAGERS UPDATE

#### Wildland Personal Protective Clothing, (PPC) – Working to a Standard

There are many misconceptions about PPE and specifically PPC, the Australian Standards that PPC is certified to, garment design, the fabric the garment is made from and OHS legislation and how all these items inter-relate. Following is an article that was written for inclusion in the CFS Volunteer Magazine that provides an insight into the topic:

Occupational Health and Safety, (OHS), Legislation is drafted to ensure that workers operate in as safe a work environment as is reasonably possible. In this environment identified risks are normally managed using a 'Hierarchy of Control':

1. Eliminate the Hazard
2. Substitute the hazard with something of a lesser risk.
3. Isolate the hazard
4. Use of Engineering Controls
5. Use of Administrative Control
6. Use of Personal Protective Equipment

In our environment, the CFS environment in which we combat bushfires, the standard hierarchy of control is almost impossible to use as the only way we can eliminate the hazard is to extinguish the fire and this necessitates exposing firefighters to potentially significant risk in an environment over which we have little control. Consequently for fire and emergency services the hierarchy of control is effectively reversed with the first three control measures being used equally to mitigate risk as follows:

1. Use of Personal Protective Equipment – e.g. Specific, clothing, helmets, boots, gloves and eye protection
2. Use of Administrative Control – e.g. Fireground practices, Chief Officer's Standing Orders, Standard Operating Procedures and Operations Management Guidelines.
3. Use of Engineering Controls – e.g. in cab roll down blinds, crew deck protection awning, cabin deluge system, in-cab breathing system etc.

Under OHS Legislation employers must, so far as is reasonably practical, provide and maintain a safe work environment and safe systems of work for their employees, (CFS Volunteers are classed as employees under the legislation). Given that CFS firefighters are required to work in environments the average person would consider as being extremely unsafe; the question most asked is "*What is reasonably practical*"? Obviously every situation is different, but irrespective of this, CFS has to be able to demonstrate that it has done everything possible to provide and maintain a safe work environment.

In relation to Wildland PPC, as is the case with all Personal Protective Equipment, (PPE), provided to and used by CFS volunteers, CFS requires the products being used to be certified to the relevant Australian Standard which is the same principle applied by all similar fire agencies in Australia. In the case of wildland clothing the relevant Standard is "*AS/NZS 4824, Protective clothing for firefighters – Requirements and test methods for protective clothing used for wildland firefighting (ISO 15384:2003, MOD)*".

This Standard addresses the following issues:

- Clothing Design – Design aspects that may impact on how the garment performs or may create a risk to the wearer e.g. the Standard requires the collar to remain in a vertical position when it is set upright and to be fitted with a closure system. It does not state how this is to be achieved.
- Sampling and pre treatment of material prior to testing – Requires material to be washed or dry-cleaned a number of times so testing can occur on fabric that has been through a cleaning process.
- Thermal requirements - To see if the material will ignite when exposed to flame and how it handles heat.
- Mechanical requirements - to see if the material will tear and how strong the seams are.
- General requirements – What labelling is required, how much shrinkage is allowed and how should the reflective/fluorescent tape affixed to the garment perform.

There are many misconceptions about this Standard the most common being that it specifically covers the design of the garment which it doesn't. What the Standard does do is provide some guidelines on how clothing should be designed by making statements such as

*“Clothing should be light and flexible in order to be effective without introducing heat stress in the wearer” etc.*

The Standards we work to are “living documents” that are subject to ongoing review and change. Changes are achieved via a Standards committee process which includes public consultation. Fire Services in Australia and New Zealand are represented on the wildland PPC committee by Australasian Fire & Emergency Services Authority Council, (AFAC), representatives. Other members who sit on that committee come from industry, manufacturers, unions, certification bodies and testing bodies.

CFS has its own PPE Committee with staff and volunteer representatives from each Region. They have recently undertaken a broad consultative process that has led to a new design of garment being developed for CFS. This committee can also raise issues with the CFS Manager Infrastructure and Logistics, (MIL), that they want discussed at a national level. MIL sits on, and currently chairs, the AFAC PPE Technical Committee and it is this committee that provides advice to members of the Standards Australia Committee that is responsible for AS/NZS4824 (Committee SF-049). The AFAC representatives currently come from CFA and NSW RFS.

For over thirty five years the majority of Australian volunteer firefighters, such as those in CFS, have been provided with Proban treated cotton garments wear. During that time we have moved from a one piece coverall or overall that could be purchased off the shelf from a work-wear supplier to a purpose made two piece garments that is certified to a Standard and can only be obtained from specialist supplier. Proban treated garments have served us well over this time but the weight of the material used is relatively heavy. Lighter and more durable fabrics that provide the same or greater levels of protection have been available for some time but have been cost prohibitive to use. A number of new generation fabrics have recently come onto the market that has broadened the choice available to CFS. CFS has recently adopted one of these products, TenCate Tecasafe Plus, as it has better feel and drape, provides the same protection at a lighter weight, is inherently fire retardant, (as opposed to being a treatment ) and remains cost effective when compared to Proban.

PPE, how it is specified and developed and the Standards and legislation that underpin its design, selection, care, maintenance and use are a complex minefield of issues that are not easily understood. Consequently if in doubt ask

### **CFS PPE Happenings**

Following several near misses during a major incident work is being undertaken to ensure CFS firefighters are visible at night and in low light conditions. This is being achieved by replacing garments that don't have reflective and fluorescent tape attached with garments that do. Whilst some have objected to this process as they perceive it as a waste of money the reality is that CFS has a legal responsibility to, so far as is reasonably practical, provide and maintain a safe work environment. It is undertaking the replacement program so as to meet its duty of care obligations.

As mentioned earlier the CFS PPE Committee has been working on a new wildland garment for our volunteers. This process involved the design, development and manufacture of a prototype garment that was displayed around the State as part of a significant State-wide consultation process. Following that process results were tabulated and an updated design of garment is now being manufactured. The updated prototype has now been received and further consultation will occur with the Uniform and PPE Committee before the garment goes into production.

At a national level MIL has been working with a small group of people to progress a high visibility garment Standard specifically for fire-fighters, AS/NZS4602.2. It has been through the Standards process and recently went out to be voted on. I am pleased to advise that the Standard achieved the required number of votes and as a consequence will become a published Standard. When the Standard is published all new CFS wildland clothing will be

dual certified along with AS/NZS4824 so that those wearing it will no longer need to wear tabards when working on roadways or in other high risk environments.

## Logistics Vehicles

The majority of the 42 Isuzu D Max Logistics vehicles that were purchased have now been delivered to their recipient Groups. Verbal feedback received to-date has been positive and the vehicles have been well accepted. Additional vehicles will be purchased as funding becomes available over the next two financial years.



One Group, Onkaparinga Group, elected not to have a canopy fitted to their vehicle and instead chose to have a 'prototype slip-on' firefighting unit fitted. This has only just arrived and is shown placed in position. Work is currently being undertaken to mount it to the tray.

The unit is fitted with a 400 litre rotomoulded tank filled with baffle balls. The pump is a 2" Aussie Chief coupled to a petrol Honda GX160 Motor. The pump is fitted low on the tray to stop flame

impingement. A lightweight hose reel with 36m of 19mm hose is fitted above tray top level for ease of access. CFS will likely look at other hose reel options due to the height of the reel above the body. The dry weight of the unit as it currently stands is around 95kg.

The cost of this concept vehicle is less than half the price of the current Quick Response vehicles that we currently purchase. Work is required to see if this concept is functionally and operationally viable.

## Storz Couplings

There have been a number of reported incidents of Storz couplings coming undone when a hose line is being charged. This has the potential to cause injury. When rolling out hose fitted with Storz couplings it is important that (a), the hose is rolled out flat and doesn't have any twists in it and (b) the hose is charged progressively, not suddenly. When a hose is twisted the jet reaction of the water flowing through it will either cause the hose to twist in a clockwise direction so tightening the coupling or in an anti-clockwise direction causing it to come undone because it only takes one quarter of a turn for this to occur. Firefighters should be mindful of this when using hoses fitted with Storz couplings.

Prepared by,

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**(Feedback on Infraclog, both positive and negative, is encouraged and welcomed)**