# Mudgee Today

## April 2010

### *To Burn or not to burn …… ?*

To those in the UK, the activity of "Hazard Reduction Burning" is virtually, if not totally, unknown. Its name infers the nature of the task but does not explain the complexity of the procedure.

In Australia, hazard reduction burns or HRs, as they are called, are common in Bushfire prone areas during autumn, winter and early spring depending on a variety of circumstances.

In New South Wales, two organisations have a protective overview of fire prone areas. The National Parks and Wildlife Service work in their "territory". The Rural Fire Service protects bush land outside the National Parks, some of which is privately owned and some which belongs to the Department of Lands. In the UK, this would be known as Crown Land. This title is also used here in Australia.

For a bushfire to occur there has to be a combination of fuel on the ground, appropriate weather conditions and an ignition factor. Fuel is divided into 2 categories. Fine fuel is the mixture of dried leaves, grass and small twigs which will burn rapidly and cause instant heat. Heavy fuel is larger twigs, fallen branches and even whole trees, which take longer to ignite but can burn for days. A high fire danger period occurs when the temperature is higher than the humidity with winds from the north and northwest (warm to hot in the southern hemisphere). The danger is even greater during periods of drought. Ignition can be caused through careless human behaviour – a thrown cigarette end, the spark from an angle grinder, a farm vehicle driving through long dry grass or even by deliberate acts of arson. Natural causes such as lightening strikes during a dry storm are common.

There is a never ending debate about the value and integrity of Hazard Reduction or Prescribed Burning. Prescribed burning, completed in a highly controlled manner in a targeted area, is designed to reduce, if not eliminate, the fine fuel load on the ground.
In Australian woodlands, eucalyptus leaves fall throughout the year. They dry out become crisp but remain oil laden and highly inflammable. Many varieties of eucalypt tree shed their outer bark layers regularly which, in turn lie in the undergrowth providing ever mounting layers of fire fodder. Tree branches collapse without warning. Over a period of years the fuel on the ground builds up to dangerous levels. Ferns and brackens grow through the litter only adding to the total combustible load.

To many, the removal of this hazard through controlled burning is the obvious course of action.

However, the layers of fine fuel and decaying branches are home to many small creatures. Prescribed burning temporarily disturbs the ecological balance of the woodland. The tiniest creatures may perish, whilst those who do escape have to find new homes. Hazard reduction burning is costly. Burns have been known to get out of control. Fire Fighter lives have been lost.

The option is to do nothing. Does this encourage a potential disaster? Whilst there were a number collective extreme conditions resulting in the Victorian disaster of February 2009 during which 173 people died , 414 were injured, 3,500 structures destroyed and 7,562 persons displaced, it has been identified that inadequate precautions had been taken over a number of years. In the wake of the Royal Commission, the Head of the Victorian Country Fire Authority (RFS in New South Wales) has just (23rd April) resigned.

New South Wales favours the principle of Hazard Reduction Burning where possible. However, as said previously, it is an expensive exercise which takes a considerable amount of planning.

Areas for prescribed burning have to be identified and justified. Plans have to be submitted, finance approved, action plans finalised and preparations made long before there is any action at ground level.

A number of localities in the Mid Western Regional Council Area have been identified for HR burns. An area of 467 hectares (1,168 acres), 15kms north of Rylstone, belonging to the Department of Lands, was approved some 3 years ago. Much of the preparatory work was done. However, the burn never hap-

pened. It could have been as simple as there were never the right weather conditions to facilitate the exercise.

During March and early April 2010, this area was re-visited. The original fire trail, wide enough for the largest fire truck, a Cat 1 to travel along, had to be reopened using a bulldozer. This trail was the burn area's perimeter line and would also act as the containment line. Mitigation work was carried out within the area whereby significant trees were identified and an area around each was manually cleared of combustible debris hopefully preventing flames coming right up to their bases. Only when all this was done could things begin to happen.

Wednesday 21st April was identified as a possible start date. It was estimated the burn would take 2 to 3 days. The long term weather forecast for the period looked perfect. All the planning had been carried out by 3 RFS paid officers – the district's Operation's Manager, the Community Liaison Officer and The Learning & Development Officer acting as the Safety Manager – and one Group Captain (a volunteer) who would be the Incident Controller during the burn. On Monday 19th, with the weather looking good, the final plans were made and the volunteer crews available to help finalised. A helicopter, with two crew members, was booked for 2 days. Being a mid week operation, finding crews was not easy.

In February 2010, the Cudgegong Communications Unit, took delivery of its new $250,000 Operational Command Vehicle – a long wheel based Mercedes Sprinter Van fitted out with some of the latest radio communications equipment available. This was the first opportunity to take it out onto a fire ground to act as the command hub for all involved. During the last 6 months, all the district's fire trucks have also been equipped with the latest digital radios – both cab mounted and hand held.

The team, which assembled at the staging area around 9am on Wednesday 21st April, on a property 7km from the main road, right by the western edge of the proposed burn area was the IC, the Operations Manager, the Community Liaison Officer and the Safety Manager; the Command Vehicle with a crew of 4, including Jacqui and myself, although Jacqui was tasked with being scribe to the IC; 4 fire trucks (2 Cat 1s, a Cat 7 and a Cat 9) with a total of 12 crew members. The paid staff came in 3 support vehicles which are Toyota Hilux Dual Cab 4 wheel drives. The helicopter landed by us at half past ten.

Back in the Mudgee Fire Control a crew of two radio operators were there to deal with any additional items which might crop up during the day – late in the afternoon confirmation was required of the overnight accommodation for the helicopter crew and transport arrangements to collect them from the airport at around 5.30pm.

By the time the chopper was on the ground, the fire crews had been briefed and tasked and were moving out to their starting positions around the burn area perimeter. For safety this had been made into a one way track. One of the Cat 1s, with furthest to travel, went first followed by the Cat 7, the second Cat 1 and finally the Cat 9. From this point onwards all communications came through the radio systems in the Command Vehicle including regular welfare checks on each crew.

The whole area had been divided into sectors, Alpha, Bravo, Charlie and Delta with one crew assigned to each.

Using drip torches, the crews began working their way around the perimeter, setting fire to the undergrowth so that it would burn inwards through the designated area. One stretch on the western edge, still damp from the heavy early morning dew, was slow to ignite and ended up being left until later in the day, whereas elsewhere there were soon snakes of in-

ward creeping flames.

A drip torch consists of a canister for holding fuel with a handle attached to the side, a spout with a loop to prevent fire from entering the fuel canister, a breather valve to allow air into the canister while fuel is exiting through the spout and a wick from which flaming fuel is dropped to the ground. The wick is ignited and allows the fire to be directed as needed. The spout and wick can be secured upside down inside the canister for storage or transport. The fuel used is a mixture of petrol and diesel with a ratio of 30% to 70% respectively.

Within a relatively short space of time, clouds of white smoke were beginning to drift high into the air above the woodland canopy and the aroma of burning eucalypt wafted on a limited breeze. It was a perfect day. I was taking weather recordings every hour and sending them back to Fire Control. The temperatures ranged from 19°C to 24°C, the humidity from 54% to 43% and the wind, such as there was, from the North West and later the West, from 0km/hr to 6.3km/hr. That stronger reading was at 2pm – a not uncommon factor at that time of day.

Once there was smoke in the air, Barrie, the IC, went airborne with Barry the Kiwi chopper pilot to look at progress. He was soon back and ready for the helicopter to do its real work of dropping incendiary devices into the centre of each sector. This was a precise action, completed using a machine which injected ping-pong ball sized pellets containing a potassium element with glycerine fired downwards through a tube. By the time the devices hit the ground the heat produced through the chemical reaction was more than enough to create small fires. Three such runs were completed during Wednesday. By the end of the burn at least 6,000 pellets had been used.

At around 12.30, Jacqui was sent in Barrie's Hilux to the Globe Hotel in Rylstone, to collect our lunches – a range of excellent sandwiches, fresh fruit and soft drinks. The Command Vehicle carries two generators to run all the electrics including an urn for "always available" tea and coffee. Unfortunately it does not carry a port-a-loo, but there was a fine array of trees of varying dimensions. Lunches were taken out to the crews, who stopped work and probably ate sitting in their trucks.

During the early afternoon, Andrew, the Safety Manager, asked me if I would like to grab my camera and go around the perimeter track. I didn't need to be asked a second time. The scene was quite amazing. The area being burned was on the left of the track.

On the right was equivalent untouched forest. The track was rough yet in places quite sandy. There had been earlier concerns about the 2 big Cat 1s becoming bogged – they certainly left some deep ruts. In places it was extremely undulating and the Hilux swayed from side to side. The air was filled with thick drifting smoke. From time to time, the smell of burning eucalypt was almost overpowering. Shafts of sunlight streamed through the trees. Flame, smoke,

shadows and tree trunks combined to create an eerie and dramatic scene. Flames licked at unburned low lying debris. Some areas were charred back to bare earth. In others, small shrubs were alight; lying branches were either flaming or just red and smouldering. In one or two cases, smoke from burning close to a tree trunk was funnelled upwards reappearing higher up as if in a chimney. We approached a small area which was well alight. Suddenly a small grass tree about 3 metres tall ignited with a loud whoosh and the crackling of flame.

As we went round we stopped for a chat with each crew just checking all was well. Things did appear to be going to plan. Two guys with the Cooks Gap Cat 1 insisted on posing in front of their truck. The result would make a great poster advert for the RFS.

As the afternoon wore on, plans began to be firmed


up for the evening. A second Group Captain and a crew with a Cat 7 were coming in from Rylstone to do some evening work and patrol. The other crews, including the Command Vehicle (OCV) would be stood down. Crews and vehicles would return to their home stations for the night. The helicopter did a final aerial inspection followed by the third drop of the day and at 4.30pm headed to Mudgee for the night.

IC Barrie was so pleased with the way things had gone that he reviewed his plans for Thursday deciding to work with the OCV, a Cat 1 and 2 Cat 9s. I was detailed to work in Headquarters, with a crew of 2, experiencing the other end of the radio trail. Jacqui had U3A things to do.

The main radio traffic at Fire Control (FCC) happened at the beginning and end of the day. Each crew must radio in to FCC whenever it goes out on the road. Their call sign indicates what they are but the crew number and Officer in Charge has to be stated. A radio call sounds like this: "**Fire Comm., Mudgee 1, yellow message**." "**Mudgee 1, this is Fire Comm. Go ahead please**." "**Mudgee 1 is leaving the shed and proceeding to the HR Burn with a crew of 5. OIC is Andrew Mottershead.**" "**Roger that, Mudgee 1, we'll talk to you when you arrive**. **Fire Comm., clear**." "**Mudgee 1, clear**. "Mudgee 1 is the Mudgee HQ Cat 1 truck. They have only one. If they had 2, they would be Mudgee 1 Alpha and Mudgee 1 Bravo. A category 1 truck is the largest fire truck, a category 9, the smallest. The conversation is logged manually by a scribe and automatically voice recorded.

Messages are colour coded. Yellow is a low priority call, blue messages are operational. Other colours signify more urgent circumstances.

Whilst ever trucks and crews are on the road, they are under the radio control of FCC in Mudgee. Once they have arrived at the staging area and told FCC the same, they are handed over to Command and Control and told which radio channel to use.

They come back into the control of FCC on leaving the operation. FCC's duty of care continues until the message comes in that each truck is back on station and "closing down".

Each RFS vehicle has a magnetic tile in the FCC radio room and their status is plotted on a white magnetic board. At any given time anyone entering the room can see exactly which trucks are out and which are "at home" or "Out of Service".

The first message at 8.05am on Thursday was from the IC saying he was at the staging area but to warn crews of a heavy blanket of smoke covering the area making visibility extremely poor. As each crew told me of their departure from the sheds, that message was relayed to them.

Before Jacqui went to her U3A activity, she had time to grab an RFS car and go to the chopper pilot's motel delivering the two guys to the airport.

With the rising sun and a little increase in wind, visibility improved and everyone set to work in much the same way as on the previous day.

Late in the afternoon, the message came from the IC that his estimates were of 90% being successfully burnt out, that the helicopter was being released and that other crews, including the Command Vehicle, were being stood down.

Friday dawned with just 2 crews working on the fire ground. The radio work was virtually non-existent and by mid afternoon the process was almost complete. Jacqui spent 90 minutes auditing consumables in the Command Vehicle and restocking. Surfaces were wiped down and the floor cleaned.

Shortly afterwards it was refuelled in readiness for the next call, whenever that might be.

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In this issue of Mudgee Today, we've concentrated on one major activity, which we hope will increase your insight into the things we get up to.

Next time we'll tell you about the National Folk Festival in Canberra, which has become a major focus of our attention around Easter.

With love and best wishes to you all.