

The Origin and Development of the

Chittering Fire

by

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CHITTERING FIRE.

1. INTRODUCTION.

The Chittering fire burned for an extended period from mid-December, 1960 until early January, 1961, mainly in the plateau country lying east of the Brookman River and north of the Avon River. At different times during this period various faces of the fire threatened private property lying to the west. Numerous citrus orchards are located in the valleys and serious damage could have resulted from the fire sweeping into these properties. On the timbered plateau country a large proportion of the land is owned by the Commonwealth Government and is used as a Military Training Centre. The area was previously owned by the Midland Railway Company and has been intensively exploited for timber over the years. At the time of the fire the Company still held timber rights over the southern portion of the Avon Training Area.

The forest is mainly low site quality jarrah and marri with isolated patches of wandoo. It is very open and the lateritic ridges carry a very sparse fuel type.

Land in the process of development lies to the north-west and east of the Avon Training Area, whilst State Forest lies to the north. The spread of what is known as the Chittering fire threatened all these areas at various times.

Three Shire areas were affected by the fire, namely Chittering, Swan-Guildford and Toodyay. The point of origin was within the Toodyay Shire. The general location of the fire area is shown on the locality plan attached to this report.

The prohibited burning period in the Toodyay Shire commences on the 22nd October although, in the nearby Swan-Guildford and Chittering Shires, it does not commence until the 1st December.

2. CAUSE AND ORIGIN.

The Chittering fire originated on or near location M2061 in the Toodyay Shire on the 13th December, 1960. The exact point of origin is impossible to determine due to conflicting evidence. When the owner of this block called for assistance to fight the fire during the afternoon of the 15th December, he apparently admitted in discussion that the fire had started from some stumps he had been burning on his property and that he and his workman had been fighting the fire for two days. In subsequent statements made to the Police, the owner denied that the fire had started on his property and stated that it had originated on the Army Training Centre some 1½ - 2 miles from his house. However, an inspection of the area was made by a Lands Superintendent of the Midland Railway Company on Thursday morning and early afternoon of December 15th. At no time did the Superintendent observe any fires or smoke in the area to the south of location M2061, although early in the morning he had noticed smoke filtering down into the Chittering Valley from the high country to the east.

Earlier, on Sunday 11th December, a local landholder on horseback, who was mustering some sheep, came within 300 yards of the homestead on location M2061 (near Keating Road) and saw smoke rising from fires which were burning just east of the house.

From the evidence available and with reference to meteorological information, it appears likely that the Chittering fire started as an escape from stumps and logs burning on location M2051 which burnt into adjoining bush on the same property under the influence of a strong south-westerly wind on Tuesday, 13th December. The wind later changed to a strong east south-easterly wind on Wednesday, 14th December and continued to blow from this direction during the 15th and 16th December. This strong wind change probably caused the fire to burn westwards across Keating Road and into the northern section of the Avon Training Centre.

It appears quite certain that the owner of location M2061 had been carrying out illegal burning-off for some considerable time in the prohibited burning season. This location is in the western portion of the Toodyay Shire, where the prohibited burning period commences on the 22nd October. There is the slight possibility that the fire could have been started by kangaroo shooters who apparently frequent the Avon Training Centre at weekends, but this possibility is considered remote. The Army had not conducted any exercise in the area since November 23rd, 1960.

3. DEVELOPMENT OF THE FIRE.

As this fire burnt slowly for a very extended period over a large area with only occasional surges of activity, it is not proposed to deal with the day by day spread of the fire in any great detail.

The perimeter of the fire has been drawn in daily intervals covering the western section and the fires development can be followed on this plan.

The following description gives some indication of the gradual development of the fire, culminating in a serious breakaway on 1st January, 1961.

The fire commenced to burn strongly on Wednesday, 14th December under the influence of a fresh south-east wind and moved from the eastern side of location 2061 across Keating Road to the west. The owner of the property and an employee endeavoured to control the fire that night. Around 5 p.m. on Thursday, 15th December the property owner called on the local fire control officer for assistance. An inspection was made of the fire area that evening. The fire was burning with moderate intensity and was being fanned by an east to south-east wind. The fire at this stage had a perimeter of approximately half a mile on the east side of Keating Road and a perimeter of about three miles on the western side of the road. The western head of the fire was travelling through timbered land and extending westwards towards pasture land. It was agreed that any suppression action should wait until the following morning.

On Friday, 16th December a party of brigade members was organised and the western face of the fire in location 2061 was controlled that night. During the day the fire was burning on about a two-mile front. Although the fire was controlled on location 2061, the portion which had burnt into the Military Training Area was left uncontrolled.

The fire burned slowly during the next few days when conditions were fairly mild and the wind was generally in a south-west to west south-westerly direction. During this period it would have been burning in a north-easterly direction from the point of origin, away from the Chittering Valley.

On the night of 21st December a strong easterly wind commenced to blow and the southern end of the fire, which had been allowed to burn unchecked in Military land, moved westwards and again entered location 2061. This section was attacked by Chittering brigade members and controlled by nightfall on the 22nd December. There were no further outbreaks in this section, which was north of Keating Road.

By midday on 24th December the fire had reached an area where it could be readily attacked. At this stage it was burning on the eastern and southern sides of W. Bush's and close to Yossi's property. Suppression action was undertaken on the nights of 24th and 25th December and, by early morning of the 26th December the fire was brought under control in this sector. An inspection on the 22nd December revealed that the southern face of the fire had burnt across the road to "Moodyne" but was burning slowly and was no immediate threat to the settlement. No suppression action was contemplated on this southern flank as it was considered that the bush was too dirty.

After controlling the head on Bush's property during the early morning of December 26th, rain fell in the area and extinguished most of the burning perimeter.

An aerial reconnaissance on the 27th December revealed that all perimeters in the area were dormant except for a head burning on a $\frac{1}{2}$ mile face about 1 to 1 $\frac{1}{2}$ miles east of Beal's and Bantock's. There was another head burning on the Avon River about three miles west of Bald Hill. This would be part of the southern face of the fire.

The weather remained relatively mild for the next few days and various parts of the fire continued to burn slowly. Smoke was noticed rising on the plateau country by landholders in the valley on the 29th and 30th December.

At about 9 a.m. on the 1st January, 1961 the fire was starting to come down the escarpment into the Chittering Valley behind Craig's property. The head fire was inspected by a local fire control officer who considered there would be no danger from the fire before 6 p.m. that night, as it was burning downhill and was in sparse fuel.

However, at about 11 a.m. the fire on the high country behind Craig's threw burning embers across the valley and started a fire in the south-eastern corner of location 4 near the main road. At the time this throwover occurred the temperature was about 88°F., the relative humidity 25% and the wind was blowing from the south-east at about 10 m.p.h.

This fire started in dry grass and assumed rapid spread in a north-westerly direction through pasture land. The wind at the time of outbreak was very gusty. Apart from one man who was on the spot within 2-3 minutes of the fire starting, additional help did not arrive for 15-20 minutes but, by this time, the fire was out of control and burning rapidly uphill. Large gangs of bushfire brigade members attacked the fire and it was brought under control by late evening on the 1st January. It burnt for a distance of approximately 1½ miles and the headfire was stopped on or near location M1143. Control efforts were helped by a strong south-westerly change or sea breeze which came in at about 2 p.m. with a velocity of 15-18 m.p.h. Temperatures fell and humidity rose.

Whilst this suppression operation was being carried out the fire on the east side of Chittering Valley continued to burn slowly. At about 6 p.m. on the 1st January a party of 20 men went up and endeavoured to control the north-western tongue of the fire. This operation apparently was not successful, due to the rough terrain.

On the 2nd January at about 9 a.m. a party of Army personnel arrived in the area. The local Fire Control Officer and the officer-in-charge of the Army Unit proceeded to "Moondyne" at about 9.30 a.m. There it was found that the property owner was burning a break around his land as protection against the southern flank of the main fire which had been gradually burning down in a southerly direction towards "Moondyne". The fire control officer returned to Beale's property where a temporary headquarters had been set up. It was arranged that a gang of 10 Army personnel would proceed to "Moondyne".

At about noon an inspection of the south-eastern face of the main fire was carried out. During this period the fire, which had been lit by the owner of "Moondyne", apparently started to make rapid progress under the influence of a moderate to fresh east north-east to east south-east wind blowing at about 15 m.p.h. The temperature at this time was around 90°F. and the relative humidity around 25%. The fire was spotting about half a mile ahead and was very intense, with numerous whirlwinds. The party which had been inspecting the southern face of the main fire was cut off along Plunkett's Road by this new head and had to pass through the freshly burnt ground for over 1½ miles to reach safety.

At the fire headquarters a gang was organised to backburn from Plunkett's Road in a southerly direction to contain the south-western flank where the fire lit around "Moondyne" was driving down the Avon River. Trouble was experienced with a local landholder who objected to a backburning line being established across his pasture land. The backburn was then put in around the eastern boundary of his timbered land and this was successfully carried out.

A second gang backburned from near the main road in location 1382 southwards to Plunkett's Road, and a third group backburned from this point northwards to contain this part of the front, which was burning downhill into locations 9, 10 and 18. This operation was completed by around midnight.

During the evening of the 3rd January a firm line was backburned around the north-western section of the main fire along the edge of private property boundaries.

This operation completed control of the entire western face of the Chittering fire.

Whilst these various operations were being undertaken on the western front, between the 16th December and the 3rd January, the main fire had also progressed eastwards and northwards whenever south to south-westerly winds were blowing. The eastern and northern fronts had been controlled by various brigades in the Toodyay Shire area but little detail is known of these operations.

4. METEOROLOGICAL CONDITIONS.

As the fire burnt over such an extended period, it is not proposed to deal with the prevailing weather conditions in any great detail. Three main burning periods are recognised during the course of this fire, namely -

- (a) The period 14th - 15th December, 1960.
- (b) The period 21st - 25th December, 1960.
- (c) The period 30th December - 3rd January, 1961.

Details of temperature, relative humidity and wind velocity for these periods are given in Table 1 below -

Table 1 - Meteorological Conditions on days of High Fire Danger during the course of the Chittering Fire recorded by Perth Weather Bureau.

Date	Maximum Temp. F.	Minimum Relative Humidity %	Wind Velocity and Direction at		
			0900	1200	1500 hrs.
14.12.60	84.4	30	ESE 16	SE 11	SE 8
15.12.60	81.3	33	ESE 20	ESE 10	SE 7
21.12.60	99.9	22	ESE 15	ESE 7	SW 10
22.12.60	101.7	21	ENE 15	E 10	SW 16
23.12.60	103.1	13	ENE 12	NE 5	WSW 15
24.12.60	99.1	25	ENE 12	SSW 10	SW 15

Date	Maximum Temp. °F.	Minimum Relative Humidity %	Wind Velocity and Direction at		
			0900	1200	1500 hrs.
25.12.60	94.6	28	SW 4	WSW 11	W 11
30.12.60	84.2	22	SE 11	SE 8	SE 10
31.12.60	85.0	34	E 15	SE 20	SW 10
1.1.61	90.3	27	SE 7	SE 7	SW 18
2.1.61	91.7	23	ENE 18	ENE 14	ESE 10
3.1.61	93.8	20	ENE 16	ENE 12	E 8

On days other than these there were generally a moderate south-westerly windstream and moderate temperatures in the mid-seventies to low eighties and minimum relative humidities from 45 to 60 percent. The fire, under these conditions would spread slowly but steadily and would be mostly dormant during the night-time.

5. SUPPRESSION ACTION.

Little can be said about the suppression action on this fire. There appears little doubt that local bushfire brigades in the district are unwilling to attack fires in timbered areas and are thus prepared to accept the danger of spot fires being thrown into the cleared pasture country against the advantage of being able to backburn from or directly attack the face of the fire in the flatter non-timbered areas. This outlook would mainly stem from the fact that, in general, their firefighting equipment is designed for grassfires and not forest fires.

However, it is hard to imagine any firefighting organisation not taking the trouble to suppress this fire on the 16th December when the perimeter burning in the timbered portion of location M2061 was only about one mile in extent and after the western perimeter, involving a distance of some 3 - 4 miles, had been controlled. Their indifference towards this small area, which may or may not have commenced to burn on Military land about this date, led to all the further trouble experienced towards the latter end of the fire when damage was done to private property pasture land and when a potentially dangerous situation was averted by a providential change in the weather conditions.

One feels, perhaps, that local landholders seized an opportunity to have these timbered areas burnt as a future safeguard to their valley bottom properties. In a more normal year the fire would have a very good chance of burning quietly for a period and then being extinguished by rain. Unfortunately, this was not a normal year, and the fire continued to burn unchecked and eventually threatened improved property.

The Department of the Army must also accept some responsibility, as they also should have made efforts to control this fire once it entered Army property and not wait until it assumed very large proportions. They should also ensure that such training areas are regularly control burnt so as to aid the suppression of fires which may be started from artillery practice.

The timber cover in this area is light, numerous access tracks exist and little or no trouble should be experienced in control burning a large proportion of the training area at least once every 4 - 5 years. It would be necessary for the Toodyay Shire to extend the prohibited burning period up to either the 1st or 15th December to enable spring burning to be carried out.

Suppression action on the hopover west of the Brockman River appeared to be reasonably efficient and volunteer firefighters responded well to this emergency, which occurred on New Year's Day.

6. DAMAGE RESULTING FROM THE FIRE.

(a) Area Burnt.

It is estimated that 31,800 acres were burnt by the Chittering fire between the 13th December and the 3rd January. Of this area approximately 17,000 acres were burnt on Commonwealth property (Avon Training Centre) and 14,800 acres of private property, including leasehold and conditional purchase areas. Of this area of private property, approximately 2,000 acres would be cleared pasture land.

(b) Monetary Damage.

(i)	Damage to 1000 citrus trees	£ 600
(ii)	Damage to pasture - 2000 acres @ £2. per acre	4,000
(iii)	Damage to fences	500
(iv)	Miscellaneous other property damage	500
(v)	Damage to 29,000 acres poor quality Jarrah and Wandoo forest @ 1/- per acre	<u>1,450</u>
	Total estimated damage ...	<u>£7,050</u>

No reliable estimate can be made regarding the suppression costs on this fire. It is likely that some 10,000 man hours were expended in suppressing various edges of the fire during the three weeks' burning period. To this must be added wear and tear on plant, equipment and vehicles.

The suppression costs could be as high as £7,000 in terms of time lost by volunteer brigade members.

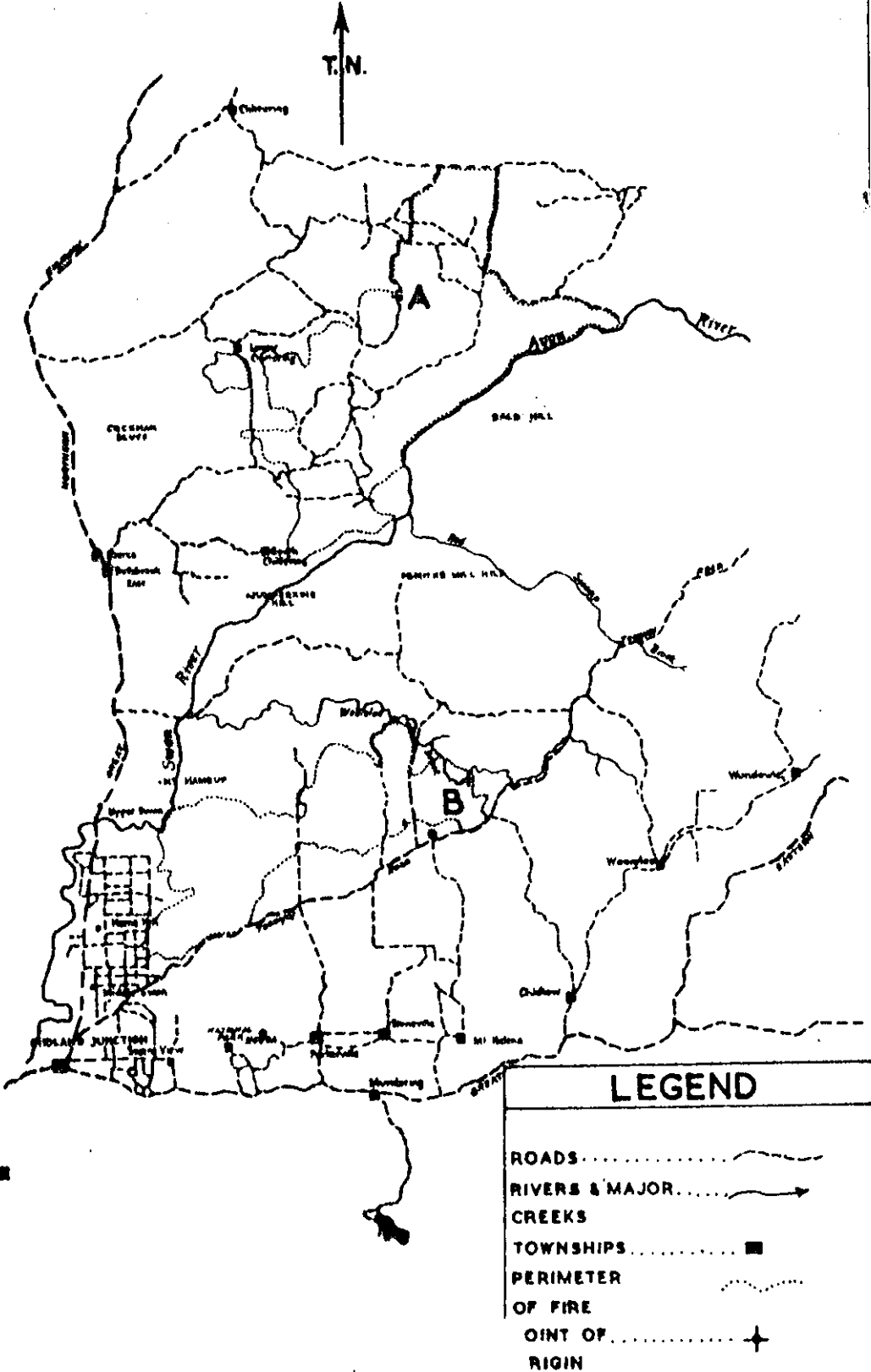
LOCALITY PLAN

SHOWING

A. CHITTERING FIRE - 13 DEC. - 2 JAN. 1961

B. CIDGEGANNUP FIRE - 1 - 3 MARCH 1961

SCALE: 1 INCH TO 4 MILES



THE CHITTERING FIRE

13th DEC - 3rd JAN

1961

SCALE: 1 INCH = 1 MILE.

