

**TRANSCRIPT OF EVIDENCE GIVEN BEFORE THE  
ROYAL COMMISSION APPOINTED TO INQUIRE  
INTO THE CAUSES AND ORIGINS AND OTHER  
MATTERS ARISING OUT OF THE BUSH FIRES IN  
VICTORIA DURING THE MONTH OF JANUARY,  
1939.**

**Held at**

**MELBOURNE**

**on**

**THURSDAY 30 th. MARCH, 1939**

**MERVYN ELLIS BILL** - Sworn and examined

*What are you in the Forests organisation?*

At present my position is Chief Draftsman

*Have you control of the aerial fire patrol; are you the officer responsible for its working?*

I am the officer connected with the flying section

*Will you tell us something about it; when was the arrangement commenced?*

I cannot say when the matter was first brought up, the first flight was made on the 18th of February, 1930

*You have a number of notes regarding the seasons; will you put them in? Will you explain one, so that we can follow the others.*

Let us take the season 1930 – 1931. I will read the notes. The present efficiency of the Aerial Fire Patrol is the result of many years of mutual assistance and close co-operation between officers of the Forests Commission and the Royal Australian Air Force. The course of investigations and improvements effected since the first flight in February, 1930, may be divided into two divisions: ground organisation and air organisation.

To illustrate the effectiveness of the system, I think it advisable to go back briefly over the improvements that have taken place. There are three sections whereby improvements are effected. The first is in the use of aircraft of various types; the second is in the improvement of the ground organisation; and the third is in the actual air patrol work.

In the 1930 – 31 season the aircraft used at that time was a single engine two-seater Wapiti. The difficulty from the start was the cramped condition of the pilot and the wireless operator.



Single engine two-seater Wapiti – insert to show aircraft type used for fire spotting

The maps used were in a great degree totally insufficient for the work for which the patrols were required. The wireless communication was made first by RT and also by WT. RT meant radio telephony. It means the actual spoken word of the wireless operator in English. W.T. is wireless telephony, and is the Morse code in operation.

During the first two years, the W.T. terms were used only, and reported from the Laverton station signals to the officer at headquarters of the Forests Commission. In the seasons 1934, 1935 and 1936, the same aircraft was used, but the maps were continually improved by matter and data supplied by various officers and surveyors. Nevertheless, the maps were insufficient for the purpose. Wireless transmission was used in both respects, both R.T. and W.T. That means that the position of the fire was ascertained and spoken by R.T. to the wireless officer immediately below.

*THE COMMISSIONER: What do you mean by immediately below?*

The aircraft would be over his district. The message would be relayed to Laverton and back again on the land lines. The Head Office would confirm the message. There would be the circulation of the message from the aircraft to the forest officer, and from the aircraft to Laverton in another direction.

Each signal was repeated three times, so that the forest officer received six messages. A great advancement was made after the season 1936. In the season 1937-38, ground inspection for ground sites was made by Squadron-Leader Eaton. He is Commanding Officer No 21, (City of Melbourne) Squadron, and is an old Queensland forester.

When it became his duty to give effect to the requirements of the Air Board, his assistance was most marked. Hitherto the method of locating fires was that the officer of the aircraft had to get the position of fires from the position of mills, which had certain numbers painted on their roofs, the paint deteriorated or had to be renewed. The smoke from the mill was a deterrent for visibility.

At that stage, a new method of ground control was instituted whereby over 5,000 square miles over which the patrol flies, a coordinated method of pin pointing a fire position was instituted. Each 100 square miles was supposed to have one permanent ground mark that the pilot could recognise. This has taken the form of ground signs established at vulnerable points, preferably at high points.

*THE COMMISSIONER: We are not conducting an inquiry into the technical side of communication, but it appears that, after an aeroplane has moved over one spot for a few minutes, it might be gone for some hours?*

The actual flying is so arranged that the aircraft passes over certain districts at certain times.

*The pilot has a fair area to traverse. He would see a place and pass over it, and he would not see it again for some hours?*

He does not cover the ground again.

*He covers it once in twenty-four hours. That is not comparable with outlooks from towers? –*

No, but the lookout from towers is more restricted. The following is the procedure- A warning of approaching bad fire weather will be issued during the late afternoon; that is, the day before. The communication will be direct from the Forests Commission to Commanding Officer No 21 G.P. (City of Melbourne) Squadron, Adjutant or other Officer of Unit from Monday to Thursday inclusive, and Fridays to Sundays to the Duty Pilot, Laverton. The Duty Pilot is to inform the Commanding officer, Adjutant or Duty crew, Under the second procedure for proceeding on fire patrol, the communication is to be direct from the Forests Commission to Unit Pilot concerned at approximately 11 a.m. on the day the patrol is required.

In regard to the notification to forest officers, the forest officers concerned would be notified of the approximate time that the aircraft would be over the various districts. The forest officers would receive all RT messages from patrolling aircraft, while the aircraft is in wireless range.

Under the methods of reporting fires, there are the following:

- (a) From aircraft to forest officers RT. on 3500 K.Cs,
- (b) from aircraft to Laverton RT on 3500 K.Cs,
- (c) The following procedure to be complied with:

Station call sign

Aircraft call sign

Report Number (reports numbered consecutively during each patrol)

The word "square"

Large square number

Small square letter (within large square)

Scale of fire (L. Large, M., Medium, S. small)

Message to be repeated twice.

These maps are the patrol maps used both on the ground and in the air. Your Honour can follow the procedure and see how efficiently the messages are sent, and how easy it is to detect a fire. If fires were detected at Powelltown, in the second "o" on the map, it would be wirelessed in this way: The word "Square" representing 100 square miles would be No. 25, That square is divided in alphabetical order into twenty-five smaller squares, and each square equals four square miles. Each lettered square mile is again divided into 100 parts, giving coordinate squares of 1/100th square inch.

The result is that by reference to a large square, a small square, and a coordinate square, the fire position is placed within an area of 25 acres. The second "o" in Powelltown would represent 25 o, and the coordinated number is 25 -49 which is the exact position of the fire. That is briefly the procedure, seven or eight wireless sets have been used in several districts. One was destroyed at Woods Point.

*MR BARBER: Has the system you have described been effective in spotting fires and as a fire fighting arm?*

I am not in a position to say exactly what use has been made of the reports, but - the accuracy of the reports and the possibility of discovering the fire position within an area of twenty five acres is practical.

*Is that dependent on the knowledge of the observer?*

Not necessarily.

*How does he know whether the place is Powelltown or Warburton?*

The ground signs are on the top of Donna Buang

*There is a progression of signs?*

Yes. If the flight officer is over "X.V.12" and he wants to go to another place, he looks down and sees where he is and alters his course. Actually, they are dependent solely on the ground signs of which there are twenty seven on the map.

*Mr GOWANS: How do you decide what day you will go on?*

This is subject to the meteorological report given the day before to Mr Carver. I think that if the Meteorological Bureau issues a bush fire warning the day before, it is conveyed to Laverton and is confirmed the next morning by the reports which are received at 10 o'clock, or thereabouts.

*Does the plane go out every time there is a bush fire warning?*

I am not conversant with the number of bush fire warnings, except that last year the aircraft was out eleven times in the season.

*You cannot say how many times there were real bush fire days*

That is how many there were over the eleven, no, I cannot,

*In flying over country such as a Niagaroon reserve, would you have difficulty in locating a fire within a short distance of forest lands?*

You mean, is there any difficulty in differentiating between forest lands and Crown lands?

Yes?

There is no difference so far as observers are concerned. They are not immediately concerned whether the fire is on Crown land or on private lands. To them forest country is country covered by trees.

On these maps, there are indicated the boundaries of timberlands. It is only when the right message is received and the position is replotted that it is known where the fire is.

*In the event of a fire occurring on selected lands and travelling with favourable or unfavourable winds towards forest reserves, would you be able to say that if the fires were on selected land outside the forests or is that not ascertained until the map has been replotted?*

From my ground knowledge of surveying I'm absolutely certain of the position, but, if the observing were done by a Laverton officer, he would not know.

*Could you say during a flight whether the fires were on selected lands?*

Within a margin of, perhaps, six or ten miles from my knowledge of the forest boundaries, I would say that the fires are approximately four times more numerous on the outside of the forest rather than inside those boundaries. On occasions I have been out in weather when bush fire warnings have been issued, and I have seen no fires in the forests and twenty outside them.

*That is what I wanted to know*

*Mr SWINDON – You report all fires*

Yes.

*The planes pass at a fixed time. We have been told that when the patrol spotting plane goes over Olinda, there are no fires, but, after the plane has gone over, smoke starts to rise. Is there a possibility of altering the times for the plane to pass over given points, and to make the times different,*

*THE COMMISSIONER: I thought you were going to blame the plane. There have been so many post hoc arguments that I thought there would be another.*

I have heard that about the Olinda plane. To obviate that, suggestions were made that the course of the plane should differ each day, but that brought us up against trouble with the aircraft authorities, but it was agreed that one plane would leave at nine o'clock in the morning, and another at a later time during the day.

THE COMMISSION ADJOURNED UNTIL 10.30 A.M.  
ON FRIDAY, MARCH 31<sup>ST</sup> 1930.