

W.R. MARSHALL

Tuesday, April 22nd. 2003

The Secretary,
House Select Committee on the recent Australian Bushfires
Parliament House,
Canberra ACT 2600.

Ref :- Submission to Committee.

Dear Sir,

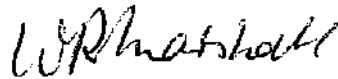
Attached is my submission to the House Select Committee on the recent Bushfires.

In particular it refers to Clause (f) of the terms of reference but as no single factor can be considered the cause of devastation by bushfires, where appropriate, mention has been made to other contributing factors.

Also attached is a 3 ½" Floppy Disk carrying all the folders comprising the submission. I understand the reason for sending this disk is to facilitate the preparation of additional hard copy should such be necessary. With this in mind, the entire submission has been prepared in a number of folders. Each folder contains one section of the submission and each respective folder has been named in accordance with the "CONTENTS" titles (page 1) of the submission.

I trust that you will find this submission of interest and should any elaboration be necessary I am only too happy to assist.

Yours faithfully,



W.R. Marshall



SUBMISSION

TO

THE HOUSE SELECT COMMITTEE

ON THE RECENT

BUSHFIRES

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ABOUT THE AUTHOR

The author is now retired but he commenced his working life as a toolmaker. Since his service as a pilot in the RAAF in WW2 he has been involved in industry in Sydney. He obtained qualifications in Production Planning and Advanced Management. These qualifications provided him with managerial appointments and allowed him to pursue his interests in Production Engineering and Product Design. One of his major projects was the conversion of gas appliances of one leading manufacturer from coal gas to natural gas, Australia wide.

In 1972 he moved to the north coast of New South Wales and undertook a business venture. After a stint in business he sold out and as his qualifications fitted him to hold a Builder's Licence he spent the last years before retirement, renovating homes, adding extensions thereto and updating the facilities contained.

These latter years provided him with an insight into home construction and allowed him to determine their susceptibility to destruction by fire.

BACKGROUND TO SUBMISSION

The impact that the most recent fires had upon the author caused him to devote considerable time to thinking about what could be contributing factors in such a catastrophe, which produces such devastation to the people of this land.

With the recognition of many of the factors, which contribute to the enormity of the devastation came the realisation that my wife and I were residing in a location of potential hazard. Should our area of the north coast of New South Wales be the scene of a major bushfire we too could be considerably disadvantaged.. Bushfires are not uncommon in this part of our land.

In fact, as we have now learned from the indigenous inhabitants, bushfires have been a way of life to them over centuries of inhabitation. Further, our scientists have determined that bushfires have been a factor in this environment since shortly (in geological terms) after this continent drifted north from its origins

The aborigines developed housing to meet the demands of the environment by building small bark structures, which could be readily replaced if a fire destroyed them.

From the first days of white habitation, our ancestors adopted the type of housing structure with which they had been accustomed in their land of birth, even to thatched roofs. These gradually gave way to the "Mediterranean " type villa with its more pleasing aesthetics. At no time have we ever given credence to the possibility that we should have an "Australian" home, designed and constructed to suit this unyielding land.

These thoughts lead the author to write to the Prime Minister, suggesting that a competition be conducted to develop just such a home style and the response to that letter caused the author to make this submission.

INTENT OF SUBMISSION

The author intends to highlight factors in the construction of domestic homes and other buildings, which independently and collectively lead to the rapid spread of fires within such structures, whether the fire is induced from an outside source or from such as an electrical or other internal source.

In doing this the primary objective is to highlight what he believes are shortcomings in the Building Codes and therefore the submission relates most directly to clause (f) of the terms of reference of the House Select Committee.

Naturally the observed inadequacies in the Building Codes were not the sole factor in such a catastrophe as the fires of 2003 and of previous years and any seen weaknesses in our present approach to providing for human habitation in this land will also be mentioned.

FACTORS RESULTING IN FIRE RAVAGED HOMES

The following are the author's views in relation to Clause (f) of the Terms of Reference of the House Select Committee on the recent Australian Bushfires.

(1) PLANNING AND LAND USE.

1. The present practice of leaving tracks of land in their native state within housing development areas means that large deposits of combustible materials are adjacent to homes, which themselves contain a large amount of highly combustible materials. While the practice of leaving the native habitat of animals and other creature is laudable the practices surrounding such preservation seem to lose sight of the most important animals of all, the species Homo Sapiens. Preserve native species if at all possible but do it by transferring specimens to National Parks, remote from human habitation and be mindful of the fact that natural evolution has caused many changes in the earth's creatures. Too much credence is given to emotional factors in these matters rather than to zoological needs.

2. Once an area has been designated for human occupation it should be laid out in such a way as to provide the most suitable infrastructure for the area and its lifestyle and all matters extraneous to those requirements should be found and re-located before any other work is commenced. A major requirement of such planning should be the adequate separation of National Park reserves from habitation areas. Such separation or fire breaks should be determined by people knowledgeable in the type of vegetation present and the inherent combustibility and will most certainly be more than the seven metre wide area existing in some locations at the present time.

3. No stands of non-indigenous trees should be planted or permitted to remain adjacent to areas designated for human habitation. Such trees are more readily combustible (due to the rapid liberation of combustible gases from their needle like leaves) than are the indigenous eucalypts and are

usually totally destroyed by fire. The eucalypts , on the other hand, will only ignite if sufficient fuel has been allowed to amass in the lower canopy. When this happens, the resulting fire is extremely dangerous and the well-known development of "spot" fires will occur, especially under very windy conditions.

(2) BUILDING CODES AND PRACTICES

- There are many factors in today's design and construction of homes and other buildings, which contribute to and in most cases accelerate combustion if conditions conducive to ignition exist. These problems exist from the ground up.
- Many homes are elevated from the ground with air access beneath the floor and in these cases the floor is usually constructed of timber. Were a fire to start in lumber and combustibles stored beneath the flooring (and this usually is the case) the flooring will catch. Once the flooring area is pierced a flue like situation develops resulting in rapid combustion of furnishings, timber trims and framework (in a timber framed and /or brick veneered structure).
- Very little thought has been given to impregnating the timber used throughout the construction of a home, either in the framework or in the fitting out trimmings. Especially is this a serious omission in the roof framing, where the roof framing is invariably made of non-impregnated pine timber, which readily releases combustible gases. Its use in houses is dictated by its sustainability and this factor must be given full credence in deciding upon an alternative. Impregnation would seem advantageous if pine is to be used and most of the larger timber millers have the necessary equipment to do this.
- The pitched roof is most conducive to the spread of a fire. The gable ends are usually made of panels of Fibre Cement sheeting and these shatter readily in the presence of high temperatures. Once this membrane is

ruptured the space above the ceiling becomes another flue and fire spreads rapidly as a result. This buckles the ceiling membrane and the entire house becomes a flue-way. At this stage the fire is not able to be controlled and total destruction results.

- The roof gutters collecting rainwater are also a collection point for leaves and other refuse and because of the difficulty of access they are infrequently cleaned out. Such refuse mats together and forms excellent kindling. Once this is ignited by flying ash and etc. the resultant fire has immediate access to timber tile battens, nailed to the trusses and such a fire is virtually inaccessible to fire fighters as it is shielded from water jets by the tiles and the gutter. Such a fire rapidly takes hold on the highly combustible roof trusses. This causes the gable ends to shatter and the resultant flue fire becomes hot enough to buckle the ceiling. Hot embers drop into the dwelling space igniting the furnishings and total destruction results. The elimination of gutters surrounding the roof would remove one fire hazard.
- House framing is another factor, which supports combustion. This too is customarily carried out in pine timbers because of the ease of working and the fact that minimal warping occurs after erection. Hardwood timbers have been used but because of the difficulty in working them they are usually erected in the "green" or unseasoned state. Dependent upon the way in which they have been milled they will warp to a major or minor extent during the drying out period. Once air-dried the resultant framework will be of poor alignment and the visual effect can impair the overall appearance of the house. While seasoned hardwood is possibly more resistant to ignition, it will occur and once alight it is more difficult to fully douse.
- Fitting out of a house is virtually always carried out in non-impregnated softwoods. Wooden doors are readily ignitable and so too are architraves, doorjambs and wainscoting. These fitments are in close proximity to the timber framing and hence another source of ignition once a fire starts. Metal framing offers a non-combustible alternative but their value is somewhat negated by the type of paneling fitted and the fitments attached.

- External skinning materials are another source permitting the penetration of fire. Fibre cement sheets will shatter under high heat conditions and the fire then has immediate access to combustible materials. In today's techniques bricks and stone are possibly the leading materials as to fire retardants. Such fire retardant qualities can only be evaluated on a time basis and the C.S.I.R.O. has developed a wealth of data on fire retardant factors. That organisation has amassed a wealth of data in relation to a multitude of materials and periods of exposure. Such information would prove invaluable in the development of new standards and codes relating to housing, especially houses to be located in what might be termed a suspect fire hazard area.
- Furnishings also fall into the category of being another source of fuel for a house fire. Most furnishings including kitchen cupboards and the like, either ignite or melt during a fire. In either case they prove useless as a fire retardant. To date no specifications are in force to ensure that furniture and furnishings do not support combustion and in fact furniture and furnishing made of today's known fire resistant materials would probably lack visual appeal to the housewife. Should the house construction be rendered more fire resistant it is probable that it would not be so necessary to give extensive consideration to the contents of the dwelling.
- Other factors, which contribute to the proliferation of fires in built up areas, should not be overlooked in the process of properly planning our residential areas. As well as ensuring that forestation and re-forestation provide a minimum of fire potential, the rainwater falling upon houses and domestic properties should be diverted to suitable collection sites for storage to enable a supply for fire fighting purposes. That is to say the surplus to requirements of each domestic site. While not related to fire and its reduction, as much water as is needed should be collected at each residential site to enable the flushing of toilets and general cleaning requirements so as to relieve the demand on reticulated services.

A POSITIVE APPROACH

Now is the time to develop an "Australian" home with the primary emphasis on fire resistance and to alter our Planning and Building Codes to ensure that homes being built in potentially fire hazard areas are built to reduce the potential to catastrophe by fire to an absolute minimum.

Once new standard have been prepared manufacturers of building material suppliers should be encouraged to modify their existing products or prepare new standard compliant materials.

A standard should also be established to ensure that only fire resistant homes are built in fire hazard areas from the introduction date onwards. Other areas need not have the new standard applied but in deciding whether the new standards should be applied a factor relating to density of population should also be involved in the decision making process.

A possibility exists that the new standard could induce added building costs. Ultimately these added costs will be reflected in the purchase price of the zoned land but to get the concept started the owners or builders should be offered incentives to assist with the building costs.

As the insurance companies will benefit from the highly reduced potential for total destruction claims they too should be advised to offer premium benefits to the insurers.

The new standard should become universal throughout the country so that the threat of damage by fire is generally diminished for all persons.

A period should then elapse before introduction of the new standards to permit manufacturers to ensure that their products comply or to develop new products. During this time they should be given consideration as to their development costs.

A time should be set for the introduction of the entire scheme and at that date its introduction would need to be vigorously policed to ensure compliance.

This and the preceding 11 pages are submitted for the consideration of The House Select Committee on the Recent Australian Bushfires by W.R. Marshall of 73 Playford Avenue Toormina whose signature is appended.



W.R. Marshall 220403

Enclosure :-

1 only 3 1/2" Floppy Disc containing 8 folders write using Microsoft Word and detailing this entire submission.