PROCEEDINGS — Training Project No.58/5

national conference on arson

edited by
c. r. bevan

AUSTRALIAN INSTITUTE OF CRIMINOLOGY

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Edited by
C.R. Bevan

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CONTENTS

OPENING ADDRESS

HIS EXCELLENCY THE RIGHT HONOURABLE SIR NINIAN STEPHEN

GOVERNOR-GENERAL OF THE COMMONWEALTH OF AUSTRALIA

In a sense arson is a crime like any other, the infraction of one of the rules of conduct which society imposes for the mutual convenience and protection of men and women living together in communities. If that were the only aspect of arson this conference would, I dare say, not be meeting today; there would be little to distinguish arson from countless other offences against property, not a few of which, like arson, also endanger human life.

And that was, I imagine, very much the status of arson in relatively unsophisticated societies; of course, as towns and cities grew the hazard of fire increased. So readily could it spread from house to nearby house, at least in European towns, mainly built of timber, that much of the way of historic sites and structures, particularly in Scandanavia, has disappeared over the centuries as a result of that fatal combination of timber houses and the fires needed to heat them through long cold winters. Arson was thus both an offence against the individual whose home and possessions it destroyed and a threat to the existence of the entire village or urban community. And arson has always been somewhat set apart by the fact that the instrument which the arsonist uses, fire, has a special attraction in its use. I suppose that the pyromaniac has always been with us.

But what has transformed arson from but one in that great catalogue of acts which civilized man almost universally condemns as anti-social behaviour and labels crime and has made it one of the great social problems of urban society is surely insurance. Anyone visiting New York and travelling through the Bronx will know what I mean when I speak of a great social problem.

Marine insurance in primitive form is perhaps as old as merchant shipping itself, certainly it was already highly developed when introduced into England by Lombard merchants in the 15th century. But modern fire insurance was a much later development and was apparently English in origin. Only after the Great Fire of London did fire insurance develop, at the end of the 17th century, and it was not until the 18th century that its extraordinary benefits were freely recognised so that it ultimately spread throughout the world.

With fire insurance arson took on a new aspect. No longer was it just a crime, like many others, to be committed against the property, and perhaps the person, of an enemy. It became as well, and far more

importantly, a species of fraud, difficult to detect and profitable to perpetrate, the friend of the fraudulent and the backstop of the near bankrupt.

Like murder, statistics on arson are uncertain things. In each case the consequence will usually be there for all to see, the corpse or the smouldering ruins, but whether it was arson or accidental fire may be as difficult to resolve as whether the corpse is the result of murder or of death from accidental or natural causes. So, treating all such statistics with caution, still it is remarkable to read that about 1,000 fires a year are deliberately lit in each of Victoria and New South Wales, that one in four fires in Australia is the result of arson, that it is claimed that one in every $4 paid out in fire insurance claims, amounting in all to some $120 million a year, is believed to be paid out on intentionally caused fires.

Does arson really matter? Can't the wealthy insurance companies afford to lend an involuntary but nevertheless helping hand to solve the merchant's unsaleable stock, the landlord's problem of low-yielding rental property? Why the answer to such a question is so unequivocally 'NO' is not just because, as professional mediator in risk sharing and loss spreading, the insurance company has one principle recourse when claims escalate, that of increasing premiums at the cost of the insuring public. There are other evil consequences of arson: lives are put at risk, both of those who may happen to be in the burning building or in near-by property and of the firemen whose work it is to fight the fires; again arsonists do more than seek to defraud insurance companies, a 'good fire' will often conceal the evidence of fraudulent practices of other kinds. So there is every reason to regard the arsonist, if not as public enemy No.1, at least as someone who certainly features in the short list of social undesirables.

The whole question of insurance fraud through arson, which, as I have said, is one of the major facets of the social problem of arson, is a very serious one. The concept of insurance as a sophisticated method of risk sharing and loss spreading, is an essential integer in the working of modern society. It is liable to breakdown if a rapidly rising claim history, due to a high and relatively uncontrolled rate of arson, causes an equally rapid rise in premiums; if this occurs in the business or professional world the increased charges may usually be passed on. The inflationary consequences of that are bad enough, as are the effects upon the public perception of morality when the fraudulent are seen to profit at the expense of honest traders and of consumers generally. If it occurs in the private domestic domain, where it cannot be passed on in any direct way, it is likely to lead to breakdown of the whole loss-spreading system. Individuals will tend to run the risk of fire, trusting to luck and facing ruin if luck does not run their way. In this respect at least there will be a reversion to a more primitive form of society.

This potential effect of arson upon our whole system of fire insurance, when understood in the context of the high, and apparently rising, incidence of arson at the present day, is itself, without reference

to the other aspects of arson, enough to explain how timely it is that this conference should be being held here today.

The Australian Institute of Criminology has, since its creation has been active in crime prevention and in those studies which provide the groundwork for preventive measures. It has turned its attention to arson not only because of the importance of the subject but also because arson is a crime difficult of detection, the control of which is likely to be furthered by research into and the dissemination of knowledge about developing techniques and methods.

I am delighted to have been asked to open this important conference and I hope that its deliberations are fruitful.

TERROR, CONFUSION AND GAIN

W. Clifford

This conference opens on a note of poignancy and dire warning which no one could have foreseen when it was first organised. Bush fires are commonplace in Australia during the summer but those that raged along our southern coasts this summer, taking up to one hundred lives and wiping entire towns from the map, shocked us all: and the plight of the victims touched the hearts of Australians everywhere. The fact that a fire-setter may have deliberately started the conflagration is almost beyond belief when the tragedy is fully appreciated. Far more appalling is the realisation that the millions who gave so sympathetically and generously to the victims and survivors might, even if they had seen the fire being deliberately lit, have hesitated to intervene, to remonstrate with the firesetter, to report his conduct or to become involved. That is really what this conference is all about. At least, it is one part of what the conference is all about. The other part is that we have to achieve better coordination across the nation for what we are trying to do to prevent. We need more effective collaboration to successfully prevent arson - by law enforcement, fire controls, prosecutions in court, and insurance. We have to get our vested interests or professional jealousies out in the open and to find ways of accommodating each other. We have to achieve a national front against arson. This is, if you like, an Arson Summit and I hope we can achieve an agreement.

Arson is to crime what sadism is to rape. It adds that extra dash of calculated cruelty or wanton destructiveness which reaches far beyond our normal expectations of human failings. It evokes a new and more disquieting dimension to man's capacity for malice and villainy. So Sir William Blackstone, in the eighteenth century, said of arson :

> 'This offence is of very real malignity and (is) much more pernicious to the public than theft because of the terror and confusion'.

In those days there was no insurance so that he did not add the word, 'gain' to his 'terror and confusion': but in our modern condition setting fire to property for gain has far outstripped most of the other reasons for incendiarism.

The Paradox of Destroying for Profit

There is a pecularity about the relationship between wrecking for reward which needs more careful attention than it has received since ships were once lured onto the rocks for their cargoes. To profit

by destruction seems almost a contradiction in terms, but when the destruction of wars leads to full employment to fill all the orders for reconstruction, it seems difficult to resist the conclusion that the bombing, shelling, rocketing and wrecking was not without its postwar value. Every now and again we believe that society and/or ourselves benefit from the removal of public eyesores - removal by any means. So H.G. Wells wrote in his History of Mr Polly (X.1):

> "Arson after all is an artificial crime ..... A large number of houses deserve to be burnt."

Let's face it, London wouldn't be the same without Sir Christopher Wren's buildings, especially St Paul's, the Wren steeples and the Monument. But to arise, these beautiful buildings needed all the devastation of the Great Fire, and the razing of 13,000 buildings - and of course the loss of at least six lives.

Economists usually answer this attractiveness of destruction by referring to opportunity costs, i.e. the real costs of reconstruction and the products or services we might have had if we did not have to use our resources to rebuild. This rationalisation only works in the aggregate however: the contractor on high salary does not worry about what might have been - nor do those who have a vested interest in reconstruction. Even those who suffer cannot calculate the real costs to them. Fires are not without benefits therefore. We frequently use them to get rid of rubbish or to clear areas for development. But the aggregate costs and benefits bear no direct relation to equity or justice. We have to look not only at costs as well as benefits, but at who is meeting the cost and who is getting the benefits. Losses are losses but they can also be opportunities for the astute. Gains have to be channelled into the right direction to be enjoyed. I would imagine that it is just such thoughts as this that are passing through the minds of many who believe that the relief funds for the bushfires are not going to the most deserving in the most helpful way. As always, some do better than others and good intentions are not always translated into justice.

When a society is civilised enough to share its risks so as to compensate for the unexpected loss, then fraud or false drawings upon the pooled resources are unintentionally encouraged: and one of the other paradoxes of our developed society is that in our concern for the vulnerable and unfortunate victim of fire we may well have institutionalised arson for profit. From being a disaster, fire may have become a disencumbering convenience, successful to a great extent because of the way it is tolerated in society at large. Just how much has changed may be gauged from the fact that the first fire engines were introduced by insurance companies who put plaques on the

buildings of their clients to show they were protected. Today this could be an open invitation to the enterprising arsonist.

Other Motives for Arson

These days even arson for gain is more complex a problem than is usually supposed. It may be related to overcrowding and slum-type development. It may be a consequence of deteriorating housing stock or changes in business fortunes as people move elsewhere in search of jobs or better living standards. It may flow from high financing, from escalating repair and construction costs which have their roots in deeper economic and social developments: and it may not be unrelated to certain insurance practices which provide unscrupulous property-owners with incentives to light up their premises for profit.

It would be a mistake however to imagine that opportunities for pecuniary benefits have eliminated the other motives for arson. Revenge and spite, intimidation, pure vandalism, social protest, the desire to destroy evidence of other crimes, political and personal motives are all still rampant; and indeed they sometimes operate behind and reinforce the instances of arson for gain. If you can combine grudge and gain, revenge and reward, protest and profit, then why not?

Professional arsonists may overshadow the other types of firesetters but they also serve to refine the techniques, to improve the skills of the vengeful, the violent or the firesetter for a cause. Also, as we shall see, even the professional firesetter is not a totally dispassionate professional: behind the firesetting skills may lie a personal fascination with fire and/or all kinds of social and personal problems. And it doesn't take the very ordinary people long to learn how to use fire for advantage because they are always so deeply affected by, or attracted to, fire. We have to look more closely then at man's age-old dalliance with fire because it's an affair for which he still carries a torch!

Fire and Man

First, there is something peculiarly elemental about the way in which fire transforms matter. From the first spark to the last smoulder it appears to symbolise life and death. This fundamental role of fire in daily life - its capacity to change substances, and sometimes to cleanse or clear was not lost on our ancient forebears. For so many of them, fire seemed to be the divine light flowing from the sun as the blazing fount of all life and goodness. Fire was for the Greeks one of the four ultimate, exclusive and indeed eternal constituents of the universe. The others were Earth, Water and Air. The Chinese had five such basic elements, Metal, Wood, Water, Fire and Earth. Wood gave birth to Fire, Fire to Earth, Earth to Metal, Metal to Water - and Water to Wood again. Everything was composed of these, grew from them, returned to them. Fire was associated with the Sun so that diverse peoples from Egypt and Japan to the islands of Indonesia worshipped the Sun god, kept his fires burning and placated him with sacrificial

offerings that were consumed by fire. More significantly, the Sun symbolised justice - even for Zeno who founded the Stoics, who gave us that idea of natural law on which we have only recently based human rights.

From the Aztecs and the Incas of South America to the Zoroastrians in Iran, the Sun was the deity and fire was his special attribute. The Israelites associated fire with deity and recognised it as a purifying agent. In both the Old and New Testaments fire is associated with punishment; and burning at the stake was intended to be as much a purification of the victim and society as it was a retributive penalty. Wherever we search throughout the modern world and wherever we look down the centuries, fire is always an intrinsic part of myth, folklore, magic, mysticism and religion - suggesting of course its profound relationship with the history of mankind. Almost all legends incorporate stories of the origin of fire - as a gift from the gods or as something that man stole from the gods. Ancient Rome venerated the sacred fire of Vesta, the goddess of the hearth; the Hindus had their fire god, Agni. Fire seems to have divine qualities that could not come from man himself. The story of Prometheus is typical. In Greek mythology as you know, he was supposed to have stolen fire from Mount Olympus and to have taught men how to use it. Hearing of this, Zeus was furious and swore vengence. Prometheus was chained to a pillar in the Caucasian mountains and the vultures allowed to tear out his liver every day. Conveniently the liver replaced itself so that the pain was never-ending - a constant reminder to the Greeks that fire is really divine and that they were very lucky to have the use of it.

They knew this of course, and the difficulty of starting a new fire caused them to preserve it where possible. We sometimes forget how important it must have been for our forebears to have to relight a fire: but until fairly recently, a modern tribal people, the Andaman Islanders, were not able to kindle fire for themselves. They were an exception of course. Many primitive tribes have fire ceremonies for purification, to counteract evil, to ward off malicious spirits or to placate the gods. Perhaps the way that a fire served to keep away even the wildest animals recommended it to simple peoples as a way of protecting themselves against the forces of evil. Reincarnation is associated with fire in the different Egyptian, Greek, Arabian and Indian versions of the Phoenix - a bird which lives its allotted span, then builds a nest of spices and sets fire to the pile by flapping its wings. The bird is consumed but arises from the ashes totally renewed. The fire in Christian churches at Easter symbolises the Resurrection. And we keep memories, or intentions alive by burning candles or the perpetual sanctuary lamps - or by the undying flames at the tombs of Unknown Warriors in so many lands. We cannot even exclude the fascination of fire from the torches carried and lit a the Olympic Games or the cricket duels between England and Australia for 'The Ashes'.

Small wonder then that that captivating fire which has burnt so deeply into the spiritual and physical evolution of man has such an immediate and extraordinary attraction for young children - even infants. Small wonder that crowds can be assured for bonfires, firework displays or can be expected wherever the fire-engines gather.

Those who find an unusual delight in the flickering flames are not by any means abnormal in this respect. Between the firebug and the firework fan it is a difference of degree not a difference of kind. The pleasure the firebug finds in the flames is an exaggeration of the pleasure found by all. Therefore where there is abnormality connected with the setting of destructive fires it is usually an abnormality far more general than the satisfaction with fire. The firesetting aspect of the abnormality is a small part of a greater mental or emotional disturbance.

Not only the psychiatrists and the psychologists, but philosophers and writers of all kinds have been intrigued by the way in which the notion of fire really haunts man and his society. It is evident not only in ceremonies and mystical associations but in our use of adjectives. To take only a few of these, we have 'ardent' passions, 'burning' desires, 'fiery' tempers, 'sparks' of interest or intelligence, 'smouldering' resentments and, of course, 'old flames' for whom we may still carry a 'torch'. We describe eyes as 'flaming' and speeches as 'full of fire'. We have 'burnt' offerings and 'flaring' nostrils. Infections cause 'inflammations'; we expose ourselves for sunburn, and we 'kindle' maternal instincts. So absorbed are we in the magic of fire that our dictionaries are full of expressions associated with it - like smoke, fume, toast, grill, roast, sizzle, crackle, scorch and so on. And from each of these there are ranges of related expressions to enliven our writings and conversations. It is as if we were all obsessed with the phenomenon of fire.

The Psychology

What is it then that makes fire so humanly and so obviously fascinating? It was not difficult for Jung and Freud to cite all the legends and symbols in order to relate fire to sex. Yet more than a century before them two German writers, Platner[1] and Henke[2] had concluded that the phenomenon of incendiarism was related to puberty stress amongst the physically and mentally retarded girls in rural areas. In rural areas they could well have been right - though it is highly unlikely that only girls were involved. Besides the simple adolescent girls there must have been simple adolescent boys doing the same thing in the rural areas - and perhaps a few others not so young. For in peasant-type societies down the ages - and even to this day - putting fire to hayricks, and burning crops, barns or even houses has

(1) Platner. E, 'De amentia occulta alia observatio quaedam': Leipzig : 1797

(2) Henke. A, 'Lehrbuch der gerichtlichten medicin' : Berlin : 1812

Psychological and psychiatric interest in the abnormal character who likes to start fires or who gets a thrill, either out of watching them burning or else out of the fire-fighting itself, has always been there. That the normal fascination of fire for man becomes abnormal for some cannot be denied: but the abnormality is rarely confinedto the fire-setting. These people are disturbed or disordered in other ways. The attraction of fire for them is only part of a broader problem. Just as those abnormal people who start fires for revenge or profit merge with the general normal population, so do abnormal fire-setters merge with other abnormal people.

Let us then, first of all, dispose of the idea that there is a mental disorder which distinguishes the firebug or that there is any specific and identifiable matrix of personal characteristics which allow us to draw a profile of the typical arsonist. I know that it has been tried and I am aware that the police, the fire brigades and other investigators are very interested in the possibility. The account already given of the universality of the appeal of fire should warn us that quite apart from such motives as gain or revenge, it is difficult to exclude any group of people from our list of potential arsonists. Starting fires is not necessarily or even generally a sign of psychological abnormality. And, even if all the persons responsible for the arsons we know about (and can prove) had been arrested and convicted (which is certainly not the case), it would still not be possible to assume that most of the characteristics of the arrested arsonists would apply to the non-arrested or potential arsonists. History should be sufficient to warn us about labelling the arsonist as an identifiable type. Maybe Nero was not normal. His setting fire to Rome makes him the truly classical arsonist. But what about Alexander the Great who in the exuberance of a banquet set fire to Persepolis, the ancient ceremonial palace of the Achaemedian kings? What of Hitler and his Reichstag fire of 1933? What of the successful murderers who cremate their victims? Or the accountants who burn books likely to be embarrassing? The intelligent use of fire to destroy evidence to discredit rivals or even to divert public attention is too obvious an advantage to need any stress.

This does not mean that mentally disturbed people might not sometimes specialise in getting attention or relieving their feelings by starting fires. There was a time when legal codes allowed 'instinctive monomaniacs' or those labelled 'pyromaniacs' to be certified as insane and not held accountable for their behaviour: but if you asked for the symptoms or characteristics of these abnormal people, you would find that they were different from other mental cases or other people only because they lit fires - or were the ones most regularly arrested for lighting fires. In other words, it was the arson that defined the type - and not the type which defined the pyromania. Like the man who loved to set fire to Mini Minor motor cars - first in England, then in Australia - his troubles were deeper and more pervading than his fixation on fire. These days we are only too well aware that there are too many ordinary, rational and quite common motives for fire-setting, for arson to be treated as proof in itself of a psychological aberration.

Two major studies have sought to distinguish arsonists from others. One was a United States review of that country's Uniform Crime Statistics for arson in the ten-year period 1969-78. This showed that 89 per cent of those arrested were male, 76 per cent were white, 54.6 were under 18, 43 per cent were between 13 and 19 years of age, and 11 per cent were under 10. As between blacks and whites arrested, the percentage of blacks was significantly higher for those 18 and older than for those below 18: the whites showed the reverse pattern - more being under 18. This study confirmed that the arsonists arrested did not differ very much - in statistical terms, anyway - from the non-arsonists who were arrested.(3) Behind it was an earlier study of juvenile arsonists which concluded that the individual differences found between firesetters precluded the development of a typical profile.(4) And in 1971, Wolford produced a paper to an investigation seminar which gave the results of an experimental study of all known incarcerated arsonists in three of the southeastern states of America.(5) Again this showed no significant differences between arsonists and non-arsonists in age, race, employment records, marital status, number of prior felony arrests, length of military service or family stability. However the study did claim to show significant differences in educational levels, IQs, rural/urban background and number of crimes committed against property. It also said that incarcerated arsonists 'exhibited personality characteristics more closely associated with persons undergoing psychic stress'.

However a commentator suggested that most of the differences claimed applied more to recidivists in general than to arsonists in particular.(6) The similarities obtaining between arsonists and other types of offenders with records were far more impressive than any differences.

Jesse James, in a perceptive article written in 1965, has said:

> 'Neither sex, age, education, intellectual level nor economic status in any way limits the possibility of any individual to engage in arson.'(7)

He thought at the time that if large samples were taken, differences might be found amongst those apt to start fires: but the UCR study and others mentioned above do not bear out this impression.

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(3) Quoted in Anthony Olen Rider, 'The Firesetter: A Psychological Profile" FBI Law Enforcement Bulletin : June 1980: pp 7-13

(4) R. Rothstein 'Explorations of Ego-structures of Firesetting Children; Archives of General Psychiatry : 1963 : p 247

(5) Michael R. Wolford 'Some Attitudinal Psychological and Sociological Characteristics of Incarcerated Arsonists': paper presented at the 17th Annual Arson Detection and Investigation Seminar, Sarasota, Fla. August 4 1971

(6) A.O. Rider : op. cit.

(7) Jesse James 'Psychological motives for Arson' Popular Government, March 1965 p.24

Again, confirmation of the difficulty of drawing a fire-setting type was underlined by a detailed study of fifty arsonists aged 17-57 held at Grendon Psychiatric Prison in the United Kingdom, and published in 1969.[8] This sample of arsonists, though small, represented one seventh of all the persons imprisoned for arson in England and Wales between 1962 and 1966. The fifty prisoners in the sample averaged six previous convictions each and 46 per cent had repeated arson offences. Being in need of psychiatric treatment then and having a history of repeated fire-raising, nearly half of the total ought to have fitted a pattern typical of those who were earlier labelled as 'pyromaniacs'. Certainly 23 of them were such pronounced arsonists that the authors explored the possibility that they had a specific disorder. All that could be said however was that their motivation for fire-setting was varied and often bizarre, and that:

> 'they had learned that fire solved their problems more efficiently and often more pleasurably than any other available means. Arson in these cases was a symptomatic act which is best understood in terms of learning theory.'

Generally the fifty arsonists when subjected to psychiatric assessment and psychological tests showed no differences from other prisoners held at Grendon. They were noted however to be less motivated towards treatment.

Finally the US Department of Commerce in 1978 commissioned the North Carolina University Department of Psychology to review and appraise all that was known about the psychology of fire setting.[9] This was carried out by Vreeland and Waller. It concluded,

> 'the collection of literature presents a picture of the 'typical' firesetter. This picture turns out to be one of an individual with several maladaptive behaviour patterns of which fire setting is one. Among adults we have identified social ineffectiveness as a common factor in the general tendency of firesetters to have drinking problems, marital, occupational and sexual problems, and to exhibit a variety of criminal and anti-social behaviours... Youthful firesetters have also typically shown a number of problems associated with firesetting including stealing, hyperactivity, truancy and aggression.[10]

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(8) W. Hurley and T.M. Monahan 'Arson: the Criminal and the Crime', British Journal of Criminology. vol. 9 (1969) pp. 4-21

(9) North Carolina University of Chapel Hill Department of Psychology, 'The Psychology of Firesetting. A Review and Appraisal'. Prepared for National Engineering Laboratory, Washington DC Centre for Fire Research

(10) Ibid pp.39-40

What have we got then? In the Grendon study the arsonists were predominantly recidivist offenders, they were socially maladjusted and psychiatrically disturbed. This, of course, was equally true of so many of the non-arsonist prisoners that the hope of drawing a reliable profile recedes. The Vreeland and Waller study was firm about the 'typical' firesetter not representing any particular class or type.(11) So much for profiles. Let us not forget too the difficulty of getting a true sample of arsonists. They may be imprisoned for other offences as well, the arson may have led to prosecution for murder or wilful damage - or perhaps the embezzlement or burglary which the fire was supposed to cover has been the major charge. So only rarely will it be possible to get a true and representative sample for study.

For many reasons we have to suspect therefore the labels which so many of the so-called experts would like to tag onto fire-raisers. We have to suspect them because they apply to so many other types of offenders - and to so many other groups in the population generally - that they do not help us with investigations - and they may indeed mislead us. Let us take a few examples.

The Academy of Fire Science of the State of New York uses a teaching manual which offers a composite characterisation of a male pyromaniac. This runs as follows:

(a) He is a loner, a loser.
(b) He is suffering a setback of some kind (who isn't?).
(c) He is unable to do anything about being a loser or a pyro (presumably if he could do anything about it he would not be listed here).
(d) He is rarely an alcoholic but may drink for courage (incidentally John S. Barracato an ex fire fighter, college professor, Deputy Chief Fire Marshal of the City of New York and now with the Aetna Casualty and Surety describes the pyromaniac in another publication as "a heavy drinker but not necessarily an alcoholic".(12)
(e) He is extremely cunning. (How do we know? From the fires?)

Perhaps I need not continue because the characteristics go from (a) to (p) and include such mind-blowing factors as "May set his fires either inside or outside the structure" and "He may or may not stay in the incident area".

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(11) Ibid p. 40
(12) John S. Barracato "Fire ... Or is it Arson" : Hartford, Conn. : Aetna Casualty and Surety Co. 1979. p.4.

Of course such an instruction manual is designed for simplicity and wide use but most people with experience of arsonists would have no difficulty appreciating that generalisations of this type can be unhelpful and might even make us look in the wrong direction.

The interest in a sexual connection has been with us for a long time. In 1924, Stekel aroused interest in the psychoanalytical interpretation of arson as an expression of unconscious sexual conflicts.(13) Amongst other things he noted that some arsonists were impotent men or frigid females. This may obviously be true of some firesetters; but what about the vast majority of the sexually-impotent who do not start fires and who manage to work out their problems in other ways? It would be unjust and dangerous to believe that they are all arsonists at heart. Maybe we ought to be grateful that sexual impotence or sexual frustration are not directly related to arson. Otherwise our arson problem would be far greater than it is.

Freud's interest was aroused by his famous case of Dora in whom he discovered that fire and enuresis were related to infantile masturbatory inhibitions.(14) Grinstein in the early 1950s sought to trace the development of control over fire genetically as well as ethnologically. He commented that in the act of firesetting

> 'We are able to see the act is a direct expression of aggressive hostile impulses as well as libidinal ones.'(15)

The inference here is drawn only from the act of arson and it cannot mean that <u>all</u> arsonists are exhibiting aggressive hostile or libidinal impulses - unless we are prepared to attribute this to anyone lighting a fire illegally or irresponsibly. However Grinstein goes on to enlighten us that the habitual firesetter,

> 'has not developed internal controls sufficient to cope with the fire which he starts; his ego is incapable to dealing adequately with the reality demand.'

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(13) W. Stekel 'Peculiarities in Behaviour' New York; Boni and Liveright : 1924
(14) S. Freud 'Fragment of an Analysis of a Case of Hysteria' (1905) : Standard Edition of the Complete Psychological Works of Sigmund Freud: VII : London; Hogarth Press 1953
(15) A. Grinstein, 'Stages in the Development of Control over Fire' International Journal of Psychoanalysis XXXIII (1952) 416-20
Ibid. p. 418

Such recondite psychiatric observations do not hypnotise us quite as much as they did when psychoanalysis was at its most popular. Nowadays we ask how he knows that the internal controls were inadequate and we discover of course that he assumes this to be so because a fire was lit. That there was a lack of control is proved by the lighting of the fire - so we have a circular argument. The fire is explained by the inadequate controls, but these can be shown only because of the lighting of the fire.

The same New York training manual to which I have referred defines Pyromania as:

> "The uncontrollable impulse to start fires which may or may not be connected to sexual desires and/or gratifications."

The "may or may not" qualification renders the link to sexual desires and gratifications unhelpful to say the least but more important is the question of how we know the impulse is uncontrollable. There is no way to ascertain this except from the fact that fires were started. So we are still going around in circles.

This is however not to discard altogether the analysis of firesetting as a result of difficulties which some people have with impulse control or the management of hostility - for commonsense suggests that these are likely to be increasing as more families are fragmented and more children get less guidance through affection. Moreover, a failure to constrain impulse or manage feelings of hostility is known to be related to a great deal of delinquent behaviour. It would be surprising anyway if permissiveness in society generally did not contribute to less self-discipline or impulse control. The criticism of the work so far is provided here only to show that these psychological disturbances cannot be proved without a lot more detailed work with people who have and who do not have such problems. For a long time now there has been interest in psychiatric circles in the possible link between eneuresis, firesetting and cruelty to animals.

Macht and Mack have suggested that this is a firesetting personality syndrome. They thought that the simple notion of poor ego-superego control over our expression of impulses failed to account for all the defensive and adaptive behaviour. For them firesetting was not one but a complex of organised forms of expression which might include a signal to society for help, an expression of intense sexual

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(14) S. Freud 'Fragment of an Analysis of a Case of Hysteria' (1905) : Standard Edition of the Complete Psychological Works of Sigmund Freud : VII : London; Hogarth Press 1953

(15) A. Grinstein, 'Stages in the Development of Control over Fire' International Journal of Psychoanalysis XXXIII (1952) 416-20 Ibid. p. 418

excitement and a wish to destroy. It expressed a need to repeat symbolically the restoration of a relationship with a lost or absent parent.(16)

Maybe! But a lot more work will be needed before we can be satisfied that this syndrome exists or that it can be useful to us in our attempts to control erratic or illegal behaviour. Meanwhile let us remember what Bernard Levin of the Centre of Research of the US National Bureau of Standards wrote in the International Association of Arson Investigators (vol. 27, Jan-March 1977) :

> 'Our knowledge of the psychopathology of firesetters is limited to those arsonists who are caught or who give themselves up. In short, we know the most about the least successful arsonists.'

Nor have we dealt yet with the legal identification of the arsonist.

Legal Problems

Robert May, the Executive Secretary of the International Association of Arson Investigators, was recently quoted as saying that to detect and apprehend arsonists takes more technical expertise than a homicide.(17) Detective Inspector Lloyd Nolan of the New South Wales Police is on record as describing arson as the most difficult, frustrating and unrewarding of any crime to investigate. In a fire case, merely establishing that a crime has been committed is difficult enough. Evidence is rarely obvious or immediately available. And finding those responsible does not mean that there will be enough evidence to convict them beyond a reasonable doubt. For at a very early period in common law it was found necessary to distinguish between intended and non-intended fires. Even Bracton in the 13th century recognised this need, so that arson was one of the earliest crimes in which a mental element was emphasised. It had to be malicious and wilful for the crime to be established. Later the word 'unlawfully' was added by statute. There are still a number of legal complications arising but it seems that if negligence occurred during the commission of another felonious act - as a result of which a house was burnt down, it would not be arson. Add to this now the difficulty the police have, first in getting evidence, then in finding the person responsible, and it will be clear why, though in N.S.W. the accepted reports of arson rose from 5.08 per 100,000 people in 1972 to 20.85 per 100,000 in 1980, the clearance rate declined over the same period. In 1976 there were 377 reports and 97 clearances i.e. 26 per cent. In 1980 it was 1073 reports and 184 clearances i.e. 17 per cent. It explains why in Queensland in 1981, 107 fires were investigated 96 of which were classified as suspicious; there

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(16) L.B. Macht and J.E. Mack 'The Firesetting Syndrome' Psychiatry XXXI, 1968, pp 277-88

(17) Quoted in 'The Arson Epidemic : Who Should Investigate' Police Magazine, July 1979, p.61

was only one arrest for arson.[18] It also tells us why in Victoria only 15 per cent of the offenders are charged in cases where the forensic science laboratory has been ble to prove arson - and why if they plead not guilty they have a 61 per cent chance of being acquitted.[19] This is a situation we have to improve.

It is however not only an Australian phenomenon. In the United States, according to the Uniform Crime Reports, only nine arson fires in every hundred leads to an arrest and in less than two in a hundred is there a conviction.

Imagine that David Berkowitz, the notorious 'Son of Sam' who terrorised New York City in 1976 and 1977, killing five young women and a man and wounding seven others, was reported as telling his attorney that he had set over 2000 fires and made 137 false alarm calls in the city between 1974 and 1977. Not only had he not been caught - or even suspected - but the fires in question may not always have been classified as arson. Had these been his only offences and had he pleaded not guilty and challenged the use of the confession because it had been elicited from him under duress, he might well have been acquitted.

One way of substantiating this limited involvement of the courts in arson is to check the indices of the various law reports in this country. The Commonwealth Law Reports from 1902 to 1980 list only one reference - Stuart v. the Queen 1974 : 134 C.C.R. and this reached the High Court on a question of murder or manslaughter in a case where fifteen persons died from carbon monoxide poisoning in a fire which was lit by a 'torch' specially imported from England to persuade the owner to pay his 'protection' money. This is an important case since it establishes the liability of conspirators not actually on the scene when the damage is done - but it is almost the only arson case to reach the High Court since Federation. Not surprisingly, the Australian Criminal Reports 1979-1981 have no arson cases and indeed the Consolidated Index of Australian Law Reports does not list arson.

With such a thin line separating negligence, accident and design it may be necessary to look more carefully at our definition of arson and at the evidence which will be required to establish it. For instance, should it be necessary to wait for the match to be lit as appears in the 1954 Queensland case of R v Chellingworth (1954) Q.W.N. 35: 48 Q.J.P.R. 22, where a person who had threatened to burn the house down was found on the premises with a half-empty tin of petrol? The walls and floor were splashed with petrol and there were bags soaked in petrol. There was no evidence of a light however, so that the trial

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(18) From Annual Police Reports

(19) P.J. Thatcher 'The Trouble with Arson': Australian Journal of Forensic Sciences, v. 15, no 1 1982

judge ruled that there was no overt act manifesting an intention to commit the offence, the acts done being in preparation for the offence only. Or again, S.35 of the Queensland Criminal Code provides that a husband and wife commit no offence for 'doing or omitting to do' any act with respect to the property of the other except in the case of an act of omission of which an intention to injure or defraud some other person is an element'. So in R. v Carlton (1913) Q.W.N.8; 5 Q.C.L.L.R 169; 7 Q.J.P.R. 21, a person who was charged with wilfully and unlawfully setting fire to his wife's house (in which he was living with his wife at the time) was acquitted because there was no intention to injure or defraud another person.

On the other hand, in Victoria where Sec.197 of the Crimes Act makes it a felony to unlawfully and maliciously set fire to any dwelling-house any person being therein, it was decided in the case of R. v Whitehead (1960) V.R.12, that it was unnecessary to prove knowledge on the part of the accused that a person was in the house at the time it was set on fire. The recklessness of starting a fire - or making preparations which may result in fire - should be sufficient to establish the offence.

Maybe in each State and at the federal level we need arson to become a subject for investigation by law reform commissions or committees.

Organised Crime

To all these difficulties must be added the possibility that arson is becoming as much a corporate as an individual crime, and as much assisted by corruption in official quarters as, say, illegal gambling, prostitution or the drug trade. It is no accident but a sign of the times that in the US and in Australia there has been a more than 400 per cent rise in crimes of arson in recent years. In an acquisitive society this denotes a shift from revenge to reward. Australia is not yet as bad as the United States, but the writing may be on the wall. There, in Boston, we read that,

> 'Arson is fast becoming one of the most destructive and profitable crimes in the country. Its victims are not merely those driven from their homes but whole communities, 'and its perpetrators are not only 'torches' but also real estate companies, banks and corrupt law enforcement, fire department and insurance corporation personnel. The scale and complexity of this crime which involves such respectable institutions and individuals alongside more recognizably 'criminal' types call into question the whole theoretical underpinning of deviance theory.'(20)

(20) James P. Brady 'Arson, Fiscal Crises and Community Action', Crime and Delinquency, vol. 28: no 2. April 1982 pp. 247-70

This is what I mean by the danger that arson may become institutionalised in our society: for, ultimately, it is just another way of ripping off the long-suffering public. Arsonists for gain are said to be raping the community. Moreover a symbiotic relationship is developing between the crime and its control. They contribute to each other's growth and maintenance. Logically the more control the less crime there should be and vice versa: but experience suggests that they go up and down together. This is too complex a subject to be explored fully here. Suffice to say that even trying to control arson generates vested interests, advantages of employment, and all kinds of commercial opportunities or bureaucratic jealousies; and of course the wider and more varied the interests the more scope for different forms of corruption. In the US, arson has sometimes become the end product of urban neighbourhood decline. Unwanted or unprofitable buildings have been fired. They were eyesores, breeding places of crime and insecurity; and those still occupying them because they had nowhere else to go were usually the old or very poor, i.e. the most vulnerable. Apart from the sad effect on these few 'expendables' everyone seemed to profit from such a fire. The owners were compensated, the area was cleared for more salubrious development, and even the insurance companies could pass on their costs in higher premiums or could qualify for local government subsidies or guarantees. At the end, as usual, it was the faceless community that paid, the anonymous taxpayers - and usually those without the expertise to dodge their tax obligations. Indeed radical criminologists have identified arson as a capitalist crime par excellence since it is another business device for imposing burdens on the lower-income earners. It is, they argue, just another abuse of power to enrich the rich further and to impoverish the poor.

The worm has partly turned, however. In the United States, tenants, community groups and radical activists have organised for resistance to arson. They provide vigilante patrols, press for greater publicity to be given to the financial interests involved, seek to prevent the closing of fire stations; and they press for tighter fire regulations to be enforced. They also demand the right to examine the official documents which write off so many fires as accidental or 'cause unknown'. They have instituted broader projects of public education to make ordinary people aware of how much of their substance is going up in smoke; and they have alerted banks to the interlinks between finance, real estate and arson - and specifically to the fire-raising consequences of decisions to foreclose on the mortgages on older properties. It can hardly be doubted that Australia too needs its share of public education and public involvement in the prevention of this type of crime. We need to create a public awareness of the true seriousness of this crime, the toll it takes in lives and property and the amount it is costing the ordinary wage earner. Secondly we need to involve the public more in our professional services - not only as cheap aides but in the policy making and maybe in some organised voluntary system of fire marshals for fire safety as well as arson control. Thirdly, by publicity, we need to get the message to potential arsonists that both scientifically and in terms of public

reaction it will be more difficult to get away with it in the future than it might have been in the past.

Lack of Public Interest

Why should the public be so apparently apathetic to a crime which is costing them so very much and which has increased and multiplied so rapidly in the past decade - perhaps more than any other crime on the statute book? One possible reason is that they have felt so helpless against the revenge fire or that which was supposedly started by a crank. Effective prevention seemed to be beyond the ordinary citizen or so technical that it was the sphere of the professional. Moreover fire had for so long been associated with the notion of natural disaster. Its danger and destructiveness had been so feared that it seemed to the man in the street that it had to be a person driven out of his mind by revenge or mental illness who would even venture to start a fire.

Again, the public indifference to burgeoning fire-raising for profit is typical of the public's broader, relative acquiescence to things like corporate, white collar or organised crime. These all affect living standards - and therefore despoil so many more people than all the violence and direct robbery that steals the publicity. The odds against you being raped, robbed or murdered are a great deal higher than those against your income suffering from corporate, white-collar or organised crime. These forms of systematic robbery and extortion are more socially detrimental than ordinary theft or mugging; but they do not capture the public imagination. Of course, fire is dramatic enough - and, as we have seen, it has a deeper meaning; yet, if no one is killed or injured, it does not seem to arouse as much fear as the personal attacks or the invasions of privacy like housebreaking. In the United States it took the threat to the homes of tenants and not a few deaths to arouse the public awareness that there is now; and even now the public concern is not nearly as extensive as it might be; it certainly does not match the gravity of the true situation.

There might too be a carry over from the peasant period when fires were either accidental or started as a grudge. Neighbours would rally round to limit the extent of the destruction but they were constrained in their opposition to the firesetting by not wishing to be involved in the incipient feud.

Certainly the apparent lack of widespread indignation has two other roots. One is the systematic procedures that exist in our society for dividing an act from its true consequences. It has taken a recession and widespread unemployment to awaken the nation to the public consequences of an individual pursuit of less work for more money - both on the side of employers and employees. It took an oil shock to attract attention to the depletion of energy resources due

to unrestrained consumerism. It may have needed the tragedy of the bushfires to arouse a real concern about arson. Again arson has lacked a lobby, a pressure group, a movement for its prevention. If the Tasmania wilderness can rally so many fierce protectors, should it not be possible to find deeply concerned people to fight arson? I believe they are there but they need organisation and political support.

We need the community. The prevention of arson like the prevention of crime generally is much less a matter for the experts than for the community. It would be nice and convenient to think of this as a war with 'us' here and 'them' over there. On this conception the more of 'us' there are, the less scope 'they' have for their operations. Unfortunately this is a dangerous oversimplification easily disproved by a glance at the rise in police and fire-fighting manpower and at the rise in crime - especially in the crimes of firesetting. Even a police state does not depend upon the police alone to keep order, as may be seen from the number of street, neighbourhood, factory, school and professional committees which are generated to ensure conformity. Particularly with regard to arson we need more quality than quantity in our law enforcement, more integrity than straight increments in total numbers and more public cooperation to make things work. Now usually the police think of public cooperation in terms of the public being sensible and doing what the police would like them to do. This is one-sided however. True public cooperation does not only mean the creation of an extensive citizens' para-police, auxiliary police or vigilante organisation. It also means involving the public at the policy-making levels - it means police cooperation with public needs. It means rooting out vested interests whether in the crime itself, in industry or commerce - or in the crime control services.

Action for the Future

I believe that the guidelines for future action to prevent arson in this country are already clear to everyone here. First we need funds for a campaign. In the U.S.A. these have been raised by small increments on fire insurance premiums. This will not be any more popular with the insurance companies here than it was there - but it would follow the principle of making those with most to gain from effective arson prevention having to pay. Maybe a fund should be created with insurance and governmental money - a bit like the way we try to protect health. I will leave further discussion of how funds are to be raised to those with more expertise or involvement in the subject. Let me deal now with how the money should be used. First I think we should be careful to avoid simply increasing bureaucracies in police fire brigades and insurance by simply adding more manpower. We must go more for general community prevention than for cure by using law enforcement if only because experience suggests that catching culprits - for any type of crime - is less effective as a preventative than public education and publicly organised resistance. The mass media underlines this every day. So we need first to fund nation-wide arson-awareness programmes - to subsidise local authorities

to implement them, to advertise the dangers and costs, to mobilise fire safety groups in schools, factories and neighbourhoods. That, for me, would be priority number one. A programme of public awareness to solicit public cooperation and warn potential arsonists that they are going to be opposed by the community and ostracised as well as prosecuted.

I know that there are some who fear this might simply educate better arsonists or attract to the subject people who might not have thought of arson before. There will always be some such risk but crime is basically a community problem which is best and most effectively controlled by the community. And those investigators with their technical secrets to hide need not be afraid that a public education campaign means initiating potential arsonists into forensic secrets. It need not go that far. The public knows that there have to be some tricks up our law enforcement sleeve. Yet I suspect that a great deal of the information which many might wish to safeguard is already publicly available in the scientific journals. The main thing is to bring community pressure to bear. Each state could have its own arson "hot line" manned 24 hours a day to encourage the flow of information. And at a central point we could have an arson data collecting centre as we have for bomb incidents.

Secondly, the funds, though not used purely for manpower in law enforcement, fire fighting, arson protection and insurance investigation should be used to augment training and to provide all the scientific equipment needed to detect arson and arsonists. Thirdly we will need to sponsor research into arson - to track the incidence more precisely, to follow up all cases prosecuted: and forensic science research to improve on our equipment for gathing and analysing data. Finally to coordinate all this we will need not only a national council, board or headquarters but also regular meetings of all involved to make sure that the policies of insurance companies do not defeat both the public education and the improved detection, that fire fighting and the concern with safety does not jeopardise the collection of evidence or that an obsession with evidence does not incur unnecessary risks. We will obviously have our differences but they should be more amenable to compromise than they seem to be at present. It should not be unreasonable for insurance payments on any fire to be contingent on getting police clearance - and, where more time is needed for that clearance to be provisional, giving the insurance company grounds to recover the amount paid at a later date if further evidence is found. It should not be difficult for fire fighters to be more thoroughly trained not only in arson detection but law enforcement and for more progress to be made with the joint task forces already working.

Conclusion

Arson is a bit like cancer. It devours the cells that nourish it. It turns the blessings of fire for the body politic into an abomination and the growth expands on its own greed to the detriment of the rest of the body. Like cancer we have learned that long run prevention is superior to our relatively clumsy efforts to cure it when it gets out of control. Arson prevention like cancer prevention means rooting out the bad habits which we think are correlated with the disease. It means adopting a rigorous regime which may even change eventually the selfish and dangerous shape of our society.

That might sound idealistic but at least this conference already demonstrates that we are not prepared to fiddle whilst Australia burns.

INVESTIGATION OF VEHICLE FIRES

A.J. Anderson

INTRODUCTION

Automobile fires are not uncommon. What may be surprising is that there are not more of them. Automobiles carry relatively large quantities of highly flammable fuel, which would necessarily lead to total involvement of the vehicle if it ever ignited. Fortunately the petrol is so contained that under ordinary circumstances it does not pose a hazard. The other components of the automobile are not highly flammable. Accordingly, accidental automobile fires are not frequent.

At first glance the automobile would seem to be an attractive arson target. Cars carry their own fire fuel source. They are mobile,so they can be taken to a place where the arsonist can work without significant fear of interruption. The ease with which a car can be reported stolen provides an alternative source of suspects. What probably prevents society from being inundated with vehicle arson is that burning vehicles for profit is not a particularly lucrative undertaking. However, in the present financial climate this may well change.

Automobile insurers insure the actual cash value of the vehicle. This value is readily determinable for nearly every modern car. Insurers depreciate the value of the basic car and every accessory in it when they estimate the payoff on the policy. Automobiles do not lend themselves to the same practice of repeated re-sales at steadily ascending prices that the organised real property arsonists have perfected. The re-sale market for car parts is so high that even if an automobile is mechanically defective and unsaleable as an operable vehicle, it can be 'parted' out for nearly as much as the insurance company will pay. Most of the time it does not pay the arsonist to fix the car and sell it, so he strips it and burns it, realising on the sale of the parts and the insurance for the entire car.

Vehicle arson occurs for financial gain because the arsonist does not learn about the financial aspects until after he has burned his car. Vehicle arson also occurs for other reasons to be discussed. Arson investigators will have to be as well versed in the techniques of investigating this kind of arson as any other sort of fire.

PHYSICAL EXAMINATION OF THE VEHICLE

Exterior - Nothing on the outside of a car burns under ordinary conditions. Fires do not start on the exterior of the car, even arson fires. The exterior does, however, contain important clues about the source, origin, and nature of the fire, as well as important circumstantial evidence of intentional burning.

The radio aerial may be missing. For the base of the aerial to have melted away completely, leaving only the hole in the body, heat and flame would also have to have been sufficient to burn paint away around the hole. Also, it is likely that some metallic residue of the aerial would be left. The same rules apply to outside rear vision mirrors. Removal of these items may indicate an attempt to save re-saleable items.

Arsonists who burn vehicles for profit will usually remove most of the saleable accessories. To deter suspicion, they may replace them with cheap or damaged items. Careful examination may be necessary to detect these types of equipment switches. Wheels and tyres are often switched. The colour of the wheel may not match the rest of the car. All the wheel nuts may not have been replaced, or may not be tight. Bald or defective tyres may or may not indicate an equipment switch, but certainly constitute an additional factor to be considered.

The arsonist who strips the car before burning it has to re-sell the parts to make the ultimate profit. Investigators of vehicle fires will naturally develop positive working relationships with used auto parts dealers, and may well regard inspection of the complainant's garage and/or alternative car to be of value.

The petrol cap and filler pipe to the tank should be examined. Tests have shown that tanks do not ordinarily explode as a result of fire. They may fracture from other damage, or crack from the heat of an adjacent fire. Either of these occurrences realeases the contents of the tank and will probably result in total destruction of the car. A car with a missing petrol cap usually means that the cap was deliberately removed. The neck of the filler pipe will show striations if the cap was blown off by an explosion. Any time a 'victim' of an auto fire says his petrol tank exploded, the filler pipe *should be preserved.* These striations will not disappear unless the fire is so intense that the pipe melts. If the petrol cap can be located, it should, of course, be fingerprinted.

The position of all the windows should be carefully noted. Tests show that accidential fires do not grow large enough to totally involve the car unless at least one window is lowered to provide oxygen. If the windows melted out completely, the mechanical devices which raise and lower the window will reveal the window position.

In an intense fire the metal in the top of the vehicle will buckle and sag. This feature can be expected in most fires where a vehicle is totally involved. It would not ordinarily be expected in a fire of short duration or low intensity, as most accidental vehicle fires are.

The condition of the body of a car after a fire should give some indications of direction of fire spread. Even an intense interior fire will not usually travel against a prevailing wind.

The extent to which the top and its supporting members have sagged or buckled, and the number and location of melted windows, are important

indicators of the heat and intensity of the fire. So are seat and suspension springs.

Interior - Check the vehicle identification number. Look for any papers with signs of identification on them. The key used to operate the vehicle will often be found on the floor below the ignition lock.

There will often be evidence of a container used by the arsonist. A relatively unburned spot on the floor, or a glass or metal ring, or the handle may exist to show that something was there.

Insurance arsonists routinely claim the loss of personal property in the fire. Pieces of this property may be non-combustible. Zippers, buttons and hard metal items should still be in the interior.

Items found in the interior should be photographed both in place and after removal. The location of the object should be recorded in a diagram.

There is very little in the interior of a vehicle which could cause a fire to start there accidentally and burn with sufficient intensity to totally involve the vehicle. A totally destroyed interior is a reliable sign of arson. So is the removal of valuable accessories.

Automobile floors have low spots which should be examined for the presence of liquid flammables. Remaining carpet, padding or insulation should be removed for the examination and preserved if there is any chance of finding residue of a flammable liquid.

The boot should be included in this examination of the vehicle interior. The presence of a wheel does not necessarily mean that a tyre was attached to it before the fire. Metal parts which go into the construction of tyres should still be visible. The presence or absence of items normally found in trunks, such as jacks and tools, should be noted.

Mechanical Condition - A thorough mechanical inspection of the vehicle may show motive. The mechanical aspects of the vehicle provide important sources for both accidental and intentional fires. Any competent mechanic can check out the vehicle for pre-fire damage. The presence or absence of saleable accessories should be noted, as should the replacement of saleable parts with non-working items. Look for lube stickers if the screen survives. A mechanical report may be of value.

Most engines in burned out cars will run when re-wired, since the fire seldom damages the interior of the engine. A transmission and rear end should also run free, although the drive shaft may no longer be true or may have exploded.

The usual places for an accidental fire in the engine compartment are in the areas around the fuel pump, carburetor and wiring. Petrol is seldom accidentally present on the engine in such quantity that it runs

down the sides to the motor mounts or onto the ground. Evidence of a petrol fire in some part of the engine remote from the fuel source is an obvious arson sign. When an accelerant is poured in the engine compartment, drops commonly splash in other places. If these burn they leave behind splotches on the paint or other material on which they fall.

A ruined automatic transmission may cause a serious fire. The type of damage which could cause such a fire should be readily discernible.

Fuel System - Examination of the petrol cap and filler pipe has already been mentioned. A similar situation exists with the drain plug for the petrol tank. It often is removed to drain out the petrol, and then not replaced. Fires do not cause the drain plug to unscrew itself. If it is missing, it was either removed, melted out, or blown out. If the fire was so intense that the plug melted out, or if there was an explosion, the collar around the plug hole melts or is blown out as well. Even a plug which is replaced may not have been tightened completely. Practically all drain plugs require use of a tool to remove them. The tools will often leave identifiable marks.

Cut fuel lines should be apparent unless the fire was so intense and of such duration that they melted. Connections at the fuel pump and carburettor should be tight. If they are not, tool marks may be present on the fastener. There may be soot deposits inside parts of the fuel system that were disconnected near the fire.

Electrical System - Vehicle electrical systems are extremely unlikely to cause major fires. They operate on low voltages which cannot be maintained even at that low level for a long period. Modern insulation resists burning. Electrical components are not in locations where an intense fire may occur. There is little about the battery or its connections that would cause sufficient sparking to start a fire.

EFFECTS OF DIFFERENT TYPES OF FIRES IN VEHICLES

Cigarettes and Seat Cushions - In America numerous tests involving lighted cigarettes being placed on vinyl or cloth seat covers or in slits which exposed padding inside the seat have been done. In only one test did a flame break out. A cigarette placed on a fabric seat cover on the ground outside the car burned slowly. In no other test involving seat covers and lighted cigarettes did anything more than scorching of the cover occur. The conclusion to be drawn is that even if a dropped lighted cigarette did start a fire, it would be a small, slow fire that could easily be controlled, that would not involve the entire car and that would not be of the intensity required to cause structural damage.

Cigarettes and Floor Covering - One source reports a test involving placing a lighted cigarette on floor carpeting. The cigarette burned itself out with no damage to the carpet. Other sources concluded, without testing, that the floor carpet was by design so fire retardant that an accidental fire could not start there.

Open Flame and Seat Cushions - There have been a number of reported tests using open flame or torches on seat cushions and material. The results were mixed. Most of the tests resulted in the seat cover material scorching or flaming briefly. One test resulted in a smoldering fire over an hour in duration which consumed the outer covering of the seat and nothing else. Another test with a cutting torch applied to the seat for 20 seconds resulted in a five hour fire which destroyed the stuffing but not the covering, and did not anneal or otherwise affect the springs in the seat. Another test resulted in total destruction of the vehicle after exposed foam from a seat was lighted. The fire took 95 minutes to burn itself out after totally involving the car. The next test, which used a highway flare on the front seat, resulted in damage to the front interior of the car without involving any of the rest of the vehicle. A third total involvement fire was finally accomplished after multiple starts, burned slowly even after ventilation was improved, involved the car at approximately the same rate as the first total involvement incident, and was extinguished after 70 minutes.

The conclusions from these tests were basically that it was not easy to start a fire on seat cushions, even with an open flame of considerable intensity; that once a fire started, it spread very slowly; and that although such fires could destroy a vehicle if left untended [and with adequate ventilation] the damage was significantly less than tests in which accelerants were used.

Petrol in Interior - All three sources reported tests in which liberal amounts of petrol ranging from two quarts to one gallon were spread in the interior of automobiles and set afire. Each fire exploded into flames with the characteristic 'whoosh' of an accelerant-fed fire. The fires reached maximum intensity within 10 minutes, and totally involved the vehicles within 30 minutes. Damage to the vehicles was significantly more severe than with fires started without accelerants. Temperatures recorded inside the vehicles were several hundred degrees higher than with the 'accidental' fires. One vehicle was completely burned out in only 25 minutes.

Petrol on Tyres - Tests showed that a petrol fueled fire on the tyre nearest the petrol cap of the vehicle could ignite the vapours around the cap and involve the entire car. In one test the fire had to be re-started when the burning tyre exploded and put the fire out. There was no explosion of the petrol tank.

Petrol on Motor - The frequency of claims that a fire that totally destroyed a car occurred because petrol was accidentally released on a hot engine led each to a number of tests. From six ounces to a half gallon of petrol was thrown on hot engines or running engines. In no test did a large fire occur. Running engines stopped running. Minor damage to wiring occurred. Small ground fires occurred from fuel running off the engine. In no test did the fire communicate itself to any other part of the car even when directed against the firewall with a fan. Few, if any, vehicles will have more than eight ounces of fuel in the engine compartment at a given time. A reasonable

conclusion is that engine fires will do relatively minor damage.

Electrical Short Circuits - A number of tests with electrical short circuits, either with simple insulated wires or in conjunction with seat materials or petrol have been done. Only when sparking occurred near petrol did a fire occur. In the other tests there were heat, smoke and the smell of insulation. The conclusion must be that electrical problems will not cause fires unless there is sparking near an open accelerant.

Undercoatings - There have been testing of the flammability of undercoatings, and conclusions are that they will not sustain a fire unless they are subjected to a flame within minutes of being applied to the car.

Tail-shafts - Tests showed that a severe ground fire could heat hollow tail-shafts and cause them to explode. The floor of the vehicle was dented but not penetrated. This explosion could aggravate a fire by penetrating the fuel tank.

Glass - Laminated glass has a synthetic bonding material which emits a flammable gas when the glass melts. Glass begins to soften and flow at 1350 degrees fahrenheit. A fire that achieves that temperature is likely to be only marginally enhanced by the addition of this fuel.

Transmission Breakdown - Three tests were reported in which vehicles with automatic transmissions were blocked and overloaded. In one test the transmission did not give way. In the other tests the seals broke, the transmission came apart, and an intense fire occurred on the underside of the vehicle which would have involved the entire vehicle.

REASONS TO SUSPECT ARSON

Motive

(a) Dissatisfaction with vehicle - An important reason for the burning of a car is that the owner or driver is now dissatisfied with the car and does not consider or accept other options for disposal. The vehicle that is mechanically unreliable or disabled is a particularly frequent target. It is interesting to note that when vandals come across a disabled vehicle they usually strip it before setting fire to it. Owners often do not do that.

Cars may be burned because of the dissatisfaction that results when the owner realizes he paid too much when he bought it, or that he did not get what he expected. The car itself may not now be worth anywhere near what the price was, due to hard use or a change in other circumstances such

(a) (contd)

as availability of fuel. The car may no longer be useful to the owner or driver. A classic example of this is the joyride/ arson or the getaway car/arson.

(b) Domestic difficulties - Vehicles frequently burn because of domestic difficulties. These circumstances seem to bring out the worst in people. The burning of a vehicle, particularly one which may have sentimental meaning to the victim, is a common spiteful way of getting back. Investigators should be alert to reports of pending divorce or separation, or information that one or another person involved is having an extra-marital relationship. One party may not have wanted the car purchased in the first place or may have developed some sort of hostility to the car by blaming it for some other problem.

(c) Financial difficulties - Financial difficulties account for a substantial number of vehicle fires.

As noted earlier, hindsight makes it clear that vehicle arson is not a particularly financially rewarding endeavour. Persons who are under stress will often, however, opt for the fire solution to their problems. Investigators should be alert for information that the vehicle owner has been unemployed, that income has been substantially reduced, or that there has been some significant impairment in his family financial condition. Court judgements, business reverses, gambling debts, being victim of some property crime, and the cessation of welfare or disability payments may all constitute that impairment. Absence of insurance does not necessarily negate the financial motive for arson. Destruction of a car with a substantial loan balance is a good way to get out of the payments without damaging a credit rating. This may be particularly true where the vehicle cannot be sold at all because of damage or where it cannot be sold for the amount of the loan balance. It is possible in states with sloppy registration procedures to finance a vehicle more than once, which certainly makes the destruction of the vehcile a much more attractive financial proposition.

EXTENT OF DAMAGE TO VEHICLE

As the reports of the fire tests showed, fires which could have been started accidentally do not usually develop into the raging fire that totally consumes a vehicle. Even when the car is totally involved, the intensity of the fire and the damage are still less than where an accelerant is used. The totally gutted car with melted windows, collapsed top, completely burned interior with only ashes remaining,

annealed seat springs, sagging suspension, and burned paint all over the body of the car is the clearest evidence of a deliberately set fire. Even the damage attributable to partial fires may make it clear that it was not an accidental fire. Accidental fires do not ordinarily communicate fire from one major body compartment to the other. Fires which appear to have spread against the prevailing wind are suspicious. Fires in the engine compartment which have involved the grill, bumper and engine are suspicious because in most cars there is no way even for accidentally spilled petrol to get to the front of the car and there is nothing up there that will support fire in the absence of an accelerant. As in structural fires, evidence that a wide area burned suddenly is suspicious and suggests that an accelerant was used, causing a flashover fire with superficial damage to the area being burned and scorching elsewhere.

TYPE OF FIRE

The tests have made it clear that accidental vehicle fires in the absence of some accelerant are not fast burning fires. If witnesses report that the fire began with a 'whoosh', some accelerant was obviously used. A fire which totally involves the car in less than 20 minutes is burning too fast not to have some accelerant fueling it. A fire which becomes hot enough to melt glass within a few minutes of ignition is too hot for an accidental fire. Fires which reach temperatures in excess of 1500 degrees fahrenheit are likely to have been fed by an accelerant at some point in the fire. The smell of flammable liquids at inappropriate places in the car during and after fire suppression should be noted, as should flashback and ground fires which usually are the result of some flammable liquid.

UNUSUAL DAMAGE OR INJURIES

Accidental fires do not flame up quickly enough to burn or singe the occupants of the vehicle if they were conscious at the time the fire started. The usual evidence of multiple fire seats should be noted, as should be evidence that a sudden flash fire occurred. Damage to floor mats suggests an intense, possibly intentional fire since they are highly resistant to flame. Because they do not burn well, they are also quite likely to have absorbed some of the accelerant. Cut fuel lines or holes drilled in petrol tanks are other damage that fires do not cause.

MISSING PARTS OR DAMAGE

The absence of readily saleable accessories or parts indicates the stripping of the vehicle before the fire. The presence of a disabled body or mechanical damage before the fire is a strong sign that arson should be suspected.

VICTORIAN SURVEY OF AUTOMOBILE ARSON

A survey of cars destroyed by fire has been undertaken by Victorian Arson Squad Detectives since 1 July 1982. A sampling for 1983 is presented.

January/February

Car Fires	71
Stolen Cars	41
Not Stolen	30
Total	142

Cars not stolen are burnt for a number of reasons including:

Insurance Fraud
Concealment of Crime
Vengeance
Pyromania

Of cars reported stolen there seems a strong case against the car parked in the street:

Stolen -	Private grounds	2
	Street	28
	Flat Parking	1
	Shopping Centres	1
	Commercial Car Parks	1
	Car Yards	2
	Railway Station	1
	Outside Hotels	5

As mentioned earlier in this paper there is a strong case to believe that many cars are stripped of parts by owners prior to dumping them, burning them and reporting them stolen.

Of the 41 cars stolen 20 were partly or totally stripped.

Complete Strip - Motor-chassis parts

Miscellaneous parts	1
Engine stolen	1
Chassis stolen	3
Parts only	9
Other property with car	6
Total	20

In addition to the 41 cars destroyed by fire in the metropolitan area there were 2 in the country.

Type and model of stripped cars -

Holden	-	Various Types	-	1964 to 1979	-	8
Ford	-	Sedans	-	1970 to 1976	-	3
Toyota	-	Sedan	-	1982	-	1
V.W.	-	Sedan	-	1972	-	1

The advantage mainly gained from the survey has resulted in dumping grounds for burnt/stripped cars being identified and preventive action by Police initiated.

FLASHPOINTS OF VOLATILE MATERIALS USED IN VEHICLES

	Degrees Fahrenheit
Acetic acid glacial	109
Acetone	0
Alcohol Denatured	60
Ethyl Alcohol 95 per cent	63
Ethyl Alcohol 80 per cent	68
Ethyl Alcohol 60 per cent	72
Ethyl Alcohol 40 per cent	79
Methyl Alcohol 100 per cent	52
Methyl Alcohol 80 per cent	
Amyl Acetate [Banana Oil]	77
Butyl Acetate	72
Ethyl Acetate	24
Benzene	12
Benzine	0
Petrol 100 Octane	- 32
Petrol 56-60 Octane	- 45
Ethyl Ether	- 49
Carbon Disulfide	- 22
Keronsene - Fuel Oil #1	100
Ethyl Chloride	- 58
Fuel Oil #2	100
Fuel Oil #4 and #5	130
Fuel Oil #6	150
Methyl Acetate	14
Turpentine	95
Aniline	158
Toluol [toluene]	40
Xylene	81 to 90
Naptha - Regular	28
Naptha - High Flash	85
Crude Petroleum	20 to 90
Camphor Oils	117
Nitrobenzine [one word]	190
Napthalene	174
Olive Oil	437
Cottonseed Oil	486
Rosin Oil	266
Paraffin Oil	444
Paraffin Wax	390
Linseed Oil Boiled	403
Linseed Oil Raw	432
Lard Oil - Commercial	395
Lard Oil - Pure	500
Lubricating Oil	300 to 450
Light Motor Oil	392
Sperm Oil No. 1	428
Sperm Oil No. 2	460
Tar	160 to 180
Engine Spindle Oil	169

ARSON

P. Anderson

'Arson' the word itself, has a sinister ring, accurately reflecting the pernicious nature of the act. Regardless of statistics chosen for proof, the extent of arson in this country and throughout the western world has risen alarmingly. Arson has been described as the fastest growing and most costly crime in the western world.

A brief analysis of even the most basic of statistics will reveal the seriousness of the position. Our primary concern, of course, is what is happening in Australia. But in order to highlight the extent of the problem we might just dwell for one moment on some statistics recently published by the Californian District Attorney's Association. In the United States 925 homes, 180 buildings, 36 schools, 7 churches and 78 industrial plants are set on fire by arsonists *daily*. The cost defies belief. Australian statistics are equally alarming and indicate an upward trend. It would appear that Australia is following the North American experiences in its attraction to arson.

The very nature of the crime makes it difficult to provide accurate statistics. I hope that the police and fire authorities will shortly have access to a computerised data analysis system, which would assist tremendously in the provision of valuable data and statistics. Nonetheless, we are able to show that the incidence of arson in Australia has increased by over 500 per cent in the last decade. The financial and social cost to the country is enormous. Unfortunately, our efforts to combat, and, indeed to prevent, the current epidemic of deliberately lit fires, have not matched this staggering increase. Frankly, we have been left behind. I say 'we' because this problem is not one which will be solved by any one government, agency or section of the community.

If Australia is to be in any way effective in combating arson, it must be confronted on a collective basis in a spirit of co-operation. Governments, police, fire-fighters, lawyers, scientists, the insurance industry and society itself must act together to fight this blight which attacks every section of our community. To my mind there are two most important areas for immediate action:

- The need for the promotion of greater community understanding of arson - the provision of education in the nature and size of the problem, and in methods of prevention; and
- The need for our arson prevention detection and investigation techniques to be upgraded to at least mirror the sophistication of the methods of perpetrators of this crime.

In New South Wales, the Government has already embarked upon a number of initiatives to meet these objectives. A special Police Arson Squad has been established which has meant that police are now able to specialise in the investigation of arson incidents. Recently the size of the Arson Squad was expanded and currently has an operational strength of 19. Aerial surveillance by the Police Air Wing has been introduced. Police patrols pay particular attention to areas likely to be the subject of vandalism or arson. Of late, patrols by Police Dog Squads are assisting in protecting high risk areas, such as schools and other public buildings, and have already proved to be of immense deterrent value. Building standards for government buildings pay particular attention to the detection of potential fire hazards. The Police Academy conducts an'Arson Investigators Awareness Course'. There is an increasing contact and liaison between police and fire service personnel.

In addition to these initiatives, the New South Wales Standing Committee on Arson has been established. Its membership is made up of representatives of 13 organisations from the insurance industry, retail industry,police and government. Already it is doing good work. These programmes are a start - a foundation, if you like - but there is much more which can and must be done. It is with pleasure that I note that this conference is to address itself to the motives of the arsonist; it is essential that we gain a better appreciation of the complexities of this subject.

Of equal importance is the need for all those involved in the detection of arson, and in the prosecution of alleged offenders, to acquire a more intricate knowledge of fire behaviour and the physics of fire to ensure that no stone is left unturned in endeavouring to establish evidence of arson and to bring firebugs to justice. So, too, must we learn more about the psychological makeup of the arsonist. The science of 'body language' has a lot to offer in this regard, and much work has already been carried out overseas in the study of it. The idiosyncracies in behaviour displayed by the perpetrator of a crime might not stand as evidence in a court of law, but can be of immense value in identifying potential offenders. The insurance industry also has a major part to play.

Clearly, in monetary terms, the industry, or rather the policy holders, are the ones who carry the major burden. The industry must critically examine its operations to ensure minimum incentive for the arsonist - it must be made more difficult for the arsonist to be the profiteer.

The formation by the Insurance Council of Australia of the Insurance Resource Committee on Arson is a significant step forward in reducing arson fraud. But the industry must work closely with police to ensure maximim effort.

I spoke a few moments ago of my belief that community education should be a major component in the fight against arson. Members of our society can no longer afford to bury their heads in the sand and, ostrich-like, adopt the attitude that, unless it directly affects *their* home or

their property, they need not get involved.

After all, arson is a problem not only to society, but of society - are we getting the kind of criminal we deserve? Too often, the peripheries of arson are considered and the real impact is overlooked. Too often, we relate arson to structural damage and direct loss of capital.

But the not-so-obvious effects of the act are equally, if not more, devastating. The socio-economic effects of arson upon the community can be disastrous. For example, the destruction by fire of an industrial complex will not only place a heavy financial burden upon the community, but will also affect the employees of the destroyed enterprise, their families, the suppliers of materials and so on. And the growing incidence of fires in schools has tragic results on the education of our young people, who do not lose only a building, but books, exam notes, drawings - often their very sense of security.

It is no secret that children are attracted by fire and are frequently to blame for lighting them. The argument is often advanced that to attempt to educate school children against arson only tempts them towards the crime. It is not one to which I subscribe. The same could be, and has been said about other problems - such as sex education - which society has been reluctant to face up to. I believe it is through such programmes that we can foster in children responsible attitudes towards fire which will stay with them through adulthood and which they can pass on to new generations of children. Through such programmes, hopefully, we can not only steer susceptible people away from the commission of arson, but also harness the community's assistance in the prevention and detection of the crime.

To sum up, there are, I believe several immediate challenges before us, to be shared between the public and private sectors:

- Governments must be prepared to co-operate to enhance the detection and apprehension of arsonists;
- The criminologists' task must be to explore the phenomena of arson and tell us more about what motivates the crime.
- The insurance industry must explore ways to ensure that 'arson does not pay', working closely with police.
- There needs to be a greater public awareness of the problem; the community must be made to understand the costs, both financial and social, which are involved.
- Technology must be improved to prevent, detect and reduce the incidence of arson.

I hope this conference will articulate the problems confronting the agencies represented here today, and I trust that forums of this nature will become regular events. I am confident that succeeding conferences will be in a position to reflect on action taken and achievements made as a consequence of such discussions. The problem is one which deserves our highest attention if we are to provide protection to the community. This will be achieved only through the utmost co-operation and understanding on the part of all the agencies and organisations concerned. There must be a corporate will to act against arson.

In wishing you every success in your ensuing deliberations, I would like to leave you with the following words of John F. Kennedy, who said:

> 'There are risks and costs to a programme of action. But they are far less than the long-range risks and costs of comfortable inaction'.

ARSON - A NATIONAL APPROACH

R. Mathews

Australians have good reason to resent the toll which arson imposes annually on all of us. Irrespective of whether our measure is the lives which are lost, the private and public property which is destroyed, or the production, wages, profits and taxes which are foregone, arson is costing this country far more than we can afford. In effect, our community is being subjected annually to a hidden levy in excess of $700 million, for the kicks and profits of people who have adopted fire-setting as a way of life.

Arson is a national problem which cries out for national solutions. At the same time, it is a problem for the states, for local government and for the private sector. We are all hurting hard as a result of what arson is doing to us. It is time the arsonists were hurt in return, with much more certainty and severity than hitherto has been achieved. It is good that we are gathered here for the first time in a national seminar on arson. It will be better if learning together and reasoning together, as we are doing today, leads to us working together on a truly national basis in the future. We should not return to our respective jurisdictions and responsibilities without a much clearer understanding of how we are going to co-operate and interact with one another much more effectively in the future than has been the case in the past.

I noticed recently a report to the effect that Victoria has had to cede to New South Wales its former status as the arson State of Australia. Wearing my alternative hat, I am happy to accept in exchange our newly-won status as the State of the Arts. Be all this as it may, Victoria is ready and waiting to pull its weight to the full in any and every project which holds out a realistic promise of bringing down the appalling incidence of arson, wherever it may be occurring, to the overwhelming benefit of us all.

BUSHFIRES

Victoria has just passed through the most destructive and disastrous bushfire season in its history. The quantifiable losses to date exceed $150 million, and we are still counting. Needless to say, there are losses in terms of death, pain, terror and permanent physical and psychological disability or incapacity, which are beyond quantifying. Incredibly, a number of the Ash Wednesday fires were lit deliberately. Shortly before Ash Wednesday we had a situation where a majority of the season's major bushfires had been deliberately lit.

As a Government still in its first year of office, we found that the armoury available to us for dealing with this sombre situation was

ill-stocked. In the face of the most desperate fire danger most of us can remember, a person caught red-handed lighting a bushfire was released on bail. Another person convicted on charges arising from the lighting of bushfires was let out on a two-year good behaviour bond.

The police advised me that they had adopted the practice of proceeding against alleged firebugs on summons, rather than by arrest and objection to grant of bail, to avoid having them further disturbed in the course of inevitably unsuccessful bail proceedings. The Country Fire Authority Act - under which action was normally taken - contained no provision for the offence of malicious fire-raising, as opposed to simply lighting a fire in the open on a total fire ban day.

In the face of these deficiences, the good offices of the new Director of Public Prosecutions have been sought in ensuring that cases of firebug activity should, whenever possible, take precedence in our crowded courts.

The Country Fire Authority Act is being amended to create for the first time the offence of maliciously lighting a fire in the fire danger period, which will carry a minimum term of imprisonment.

Our volunteer fire brigades in rural areas have been issued with a new form - the C.F.A. Supplementary Fire Report - for bringing to notice immediately fires which occur in suspicious circumstances.

We are experimenting with an anti-firebug hotline, so that people in possession of information which may lead to the identification and apprehension of firebugs, or the avoidance of deliberately lit fires, can bring it to attention in the easiest and most effective way possible

All this additional input is being used to identify areas of maximum arson risk, where over-flights by C.F.A. spotter aircraft and other deterrent measures can be stepped up. The role of arson in this year's bushfires is being investigated by a team on which both police and fire service personnel are represented.

I acknowledge that this band-aid therapy falls far short of an adequate or fully appropriate response to the problems which are facing us.

Our courts have an unenviable task in reconcilling a proper respect for civil liberties with a proper respect for the safety of the community where firebug activity is concerned. It may well be that a reference to the Law Reform Commission on this whole deeply vexed aspect of the matter would be timely.

NATIONAL FIRE RESEARCH INSTITUTE

In more practical and immediate terms, the information about identifying, apprehending and deterring firebugs which we have at our disposal is gravely deficient. This reflects faithfully the fact that, as a nation, our provision for fire-related research across the board is grossly inadequate.

In my own State, fragmentation of fire services between the Forests Commission, the Country Fire Authority, the Metropolitan Fire Brigades Board and other groups has been a significant factor in allowing fire-related research to languish.

This shortcoming cannot be dismissed lightly in considering the case for a single Victorian Fire Services Board. More generally, Australia needs a National Fire Research Institute, to which we are all able to give our support and from which we would all benefit immeasurably.

The Queensland Minister for Environment, Evaluation and Administrative Services, the Honourable W.D. Hewitt, has raised with me recently the possibility of regular meetings of Ministers with responsibility for fire-services, such as those in which Police Ministers already participate, and I look forward to putting forward the proposal for a National Fire Research Institute when the first of these meetings takes place. I hope that, in the event of the proposal being supported, there will be an early reference on the firebug mentality and how society can identify and cope with it. It is absurd that so many of the firebugs we catch have previously served undetected as members of one or more of our fire services.

STATISTICS

There is a further problem.

We have all been handicapped in our policy analysis and decision-making as a result of the clipping of the wings of the National Statistician, which our former national government perpetrated in 1976. Nobody now doubts that this was an act of official vandalism, for which a high price has been paid.

It has cost us, among other things, the reliable and comprehensive statistical data from which an effective anti-arson strategy may well have developed much earlier than will now be the case.

Simply introducing the Supplementary Fire Report for suspicious circumstances, which I mentioned earlier, has opened up a new capacity to analyse and compare trends.

In this one example alone we can see results.

For the period January to April this year, 50 per cent of rural fires have been cleared through the Arson Squad, as opposed to 20 per cent of urban fires reported as arising from suspicious circumstances.

Accurate data about the origin of fires is indispensible. We will not begin to progress until we begin to read the patterns and the trends.

In these circumstances it is doubly welcome that the holding of this national conference on arson has coincided virtually with publication of Australian Standard 2577 'Collection of Data on Fire Incidents'. I note that this material has been derived to some extent from the National Fire Incident Reporting System Handbook of the United States Department of Commerce. It may well be that this is not the only respect in which we all have much to learn from America in fire-related matters. Victoria's fire services will be co-operating closely in the new arrangements, and it is our hope that, in this way, the valuable time which official myopia earlier cost us can now be made up.

STANDING COMMITTEES ON ARSON

In initiating regular ministerial meetings we will not compete with, but rather complement, the excellent co-ordinating work which is being done already by the Victorian and New South Wales Standing Committees on Arson and the Australian Fire Protection Association.

We are all indebted very deeply indeed to the members of the Victorian Police whose initiative in approaching the insurance industry and other interested groups led in 1980 to Victoria's Standing Committee on Arson being established, and also to those responsible for getting off the ground the New South Wales Standing Committee two years later.

There is no doubt that the growth of anti-arson networks at both the State and national levels has enhanced immeasurably the level of co-operation between agencies with fire-related responsibilities, and lifted the rate at which arsonists are being prosecuted well above that to which we - and they - have been accustomed.

I emphasise again the vital role of co-operation in combatting arson in all its guises and complexities.

No individual jurisdiction can hope to cope with arson on its own. Neither overlaps nor separations of jurisdiction can be allowed to impede the free, full, frank and expeditious exchange of information on which the detection of arson, the apprehension of arsonists and - ultimately - the deterrence of arson, overwhelmingly depend.

It remains for us to overcome outstanding difficulties, such as the basis on which fire reports can appropriately be made available to those for whom they have a legitimate interest. I note in passing that this is likely to be facilitated, as public servants are able to gain indemnity against defamation proceedings from Freedom of Information legislation.

It remains for us to increase the size and capacity of our Arson Squads to the point where all the information we gather is used to the greatest possible advantage.

It is difficult, if not impossible, to do justice to competing claims for extra policing in times when our forces are notoriously under strength and resources everywhere are stretched to breaking point, but the needs of those who bear the brunt of the war on arson are too plain and pressing to be ignored.

PREVENTION

Finally, we must ask ourselves again what relative values we are prepared to assign relatively to the proverbial ounce of prevention and pound of cure.

Only this last weekend Victorians have been appalled again by fire destroying school buildings to the value of a further $1 million.

Research on major arson offenders admitted to social welfare institutions over a three year period, from 1971 to 1974, has identified revenge as the reason most commonly given for setting fire to schools.

It may well cost no more to manage schools in ways which minimise the number of young people with such massively negative reactions towards education than it does to go on replacing the school buildings which currently are being burned down.

In the wider sphere, the mounting of a national campaign to bring home to Australians the gravity and magnitude of the arson problem is long overdue.

The time when arson could be laughed off or otherwise taken lightly by householders and citizens is long since behind us.

As the Insurance Council of Australia has pointed out, the number of people whose lives are likely to be overshadowed directly by arson has risen over the last decade from 5.2 in every 100,000 to 21 in every 100,000, and there is no reason to doubt that, in the absence of a concerted anti-arson strategy, these figures will climb even higher in the years ahead.

Arson is no longer something which only happens to other people but a real and present threat and burden to the community as a whole.

We cannot settle for less than a national approach to arson without selling short the millions of our fellow Australians whose lives and property are entrusted to our care.

ARSON IN RURAL SOUTH AUSTRALIA

L.C. Johns

To the tourist planning a holiday in Australia, South Australia does not seem to exist. According to statistics, only 2 per cent of tourists to Australia find their way to South Australia.

Despite this apparent anonymity, South Australia not only exists,but continues to grow in many directions.

South Australia, the country's fourth largest State, covers a total of 984,377 square kilometres - one eighth of the Australian continent.

The State is a land of generally low relief, the inland area being largely covered by featureless plains of sand and gibber deserts. Approximately half the State is less than 150 metres above sea level and 80 per cent is less than 300 metres above sea level. Even the dominant mountains, the Mount Lofty/Flinders Ranges system nowhere exceeds 1,200 metres. Whilst of no great elevation, these ranges extend over a distance of 800 kilometres.

The mountain chain, however, has an important climatic influence, which results in higher rainfall on the plains to the west and in the ranges themselves and relatively dry conditions in the eastern plains.

The western half of the State is largely occupied by a low plateau over which an intermittent series of low ranges extends.

The basic features of the South Australian climate are hot dry summers with mild nights, and cool but not severe winters, with most rainfall occurring during the months of May, June, July and August. In fact, 82.6 per cent of the State receives less than 250mm. of rain, whilst less than 0.05 per cent (an area of some 750 Ha in the Mount Lofty Ranges) receives 1000mm and over.

The wettest part of the State is the Mount Lofty Ranges immediately to the east of Adelaide where the average rainfall is as high as 1,200mm. The diabolism of this quirk of nature is that the Mount Lofty Ranges have become, year after year, the most fire-prone and potentially disastrous area of what has come to be known as the driest State in the driest continent.

From December to February, temperatures generally range from warm to hot throughout the State. In locations 75 to 150 kilometres inland, temperatures usually exceed 32 degrees C. and are frequently in excess of 37 degrees C. The hottest temperature ever recorded was 50.7 degrees C. at Oodnadatta in 1960.

A combination of warm to hot temperatures, an average index of mean relative humidity of less than 35 per cent and frequent hot northerly winds often in excess of 40 km/hour, combine to present many parts of the State as potential tinder boxes ready to literally burst into flames from late December through to April.

In terms of rural industry, South Australia's semi-arid Mediterranean type climate lends itself to cereal production and livestock farming. Wheat, barley and oats account for 99 per cent of the three million Ha. cropped in 1979, which produced 17.4 million tonnes of grain. Viti-culture is predominant with South Australia. Clare and Barossa Valleys and Southern Vales, produce some of the finest wines in the world, whilst the thousands of 'Riverland' oranges are grown and despatched from Waikerie in the heart of the Riverland plain.

South Australia is only now emerging as an area of vast and relatively untapped mineral resources. Mining and development is expected to expand in the immediate future. Copper, coal, uranium, iron, opals, salt, dolomite, kaolin, natural gas and petroleum resources are pre-dominant.

SOUTH AUSTRALIA'S FIRE SERVICES

South Australia is served by two Fire Services, viz - the South Australian Metropolitan Fire Service and the South Australian Country Fire Services.

The Metropolitan Fire Service protects the metropolitan areas of the cities of Adelaide and Port Pirie, some 180 km. to the north, with some 750 permanent personnel. A number of country towns are protected by Metropolitan Fire Services auxiliary personnel. The Bridgade has a history dating back some 100 years.

Although the first Bush Fires Act dates back to 1847, the Country Fire Services is not steeped in the long historial tradition of fire services throughout the world.

The Bush Fires Act of 1913 gave councils the authority to appoint Fire Control Officers with specific powers in fire prevention and suppression. It was not until 1916 that the State's first Fire Control Officers were appointed.

The Country Fire Services is a voluntary fire fighting service extending from the Adelaide metropolitan area to afford urban and rural fire protection to an area of 886,000 square kilometres or approximately 90 per cent of the total area of South Australia. The service comprises 465 brigades, with 15,000 registered members.

The Country Fire Services also provides personnel and equipment for salvage, vehicle accident rescue, hazardous substances spillages, and assistance in emergency situations where fire may not necessarily be occurring.

The Country Fire Services provides protection for a number of urban fringe areas with significant populations. Examples are:

Salisbury - that part protected by the CFS. approximate population 25,000; risks include timber mill, timber yards, light and medium industrial business, fuel storage.

Stirling - totally protected by CFS. Population 15,500. Densely populated, heavily bushed area (scene of 'Ash Wednesday' fire, February, 1980). Risks include shopping precincts, hospital, old people's home.

Mount Barker - totally protected by CFS. Population 9,000. Risks include tannery, foundry , light industrial, fuel storage, linseed oil production, brick kilns and two smallgoods factories.

Mitcham Hills - that part protected by CFS. Approximately, population 20,000. Densely populated, heavily bushed area with extreme life and property risks. Other risks include shopping precincts, general commercial, four hospitals, two large rest homes, residential drug and alcohol rehabilitation centre. Property value in excess of $350 million.

Outside the urban fringe area, CFS brigades provide protection for 110 towns with population of 200 or more. Many others are little more than a rail siding, grain storage silo and a few houses.

17 towns have a population between 1,000 and 2,000;
8 towns have a population between 2,000 and 4,000;
1 town has a population in excess of 5,000.

Some risks are special to various areas of the State and include:

(1) Some 150-175 wineries scattered throughout five major locations, viz. Southern Vales, Barossa Valley, Clare, the Riverland and Lower South East.

(2) An excess of 100 grain storage silos throughout the State, providing storage for grain in excess of 17 million tonnes per season.

(3) Shipping and wharf risks are prevalent throughout the coastal areas of the State. Risks may involve fishing vessels and associated shore-based industries, or more complex grain handling facilities as are located at Thevenard (Ceduna) on the West Coast and Ardrossan on the Yorke Peninsula.

(4) Some 375 schools and 63 hospitals are located in Board's area.

(5) Other special risks within the area covered by CFS brigades are the Apcel paper plant at Millicent in the South East; the Waikerie Co-operative fruit packing in the Riverland; a large plywood production plant at Nangwarry in the Lower South East; and Telecom installations throughout the State.

Brigades and Associations are autonomous bodies authorised and sponsored by their respective local government councils. CFS brigades and regional fire fighting associations are also established in parts of the State outside of local government areas.

The Country Fire Service Brigades are assisted by a small permanent headquarters group, located in Adelaide, of some 40 officers and civilians, some of whom live in the regions more remote from Adelaide.

Fire investigation has been the responsibility of CFS Headquarters Research and Fire Protection Division and the shift from cause investigation in relation to bush fires to cause investigation in relation to deliberately lit bush and property fires has been thrust upon our service with no option but to take up the challenge of pain-staking investigation and the gathering of accurate and acceptable evidence.

This shift of emphasis to fire investigation has not been without its problems. For example, our small Research and Fire Protection Division is staffed by personnel qualified and experienced in practical research and information gathering rather than the highly specialised task of arson investigation. Arson investigation in the countryside is no less exacting and sometimes even more frustrating than in metropolitan areas.

During the financial year 1981/82, (the first year in which the newly formed fire investigation team went on 24 hour call and began responding at regular intervals), the statistics record the following fire causes contributed to arson.

Rural (bush,grass,scrub)	75
Structural	14
Vehicle	13
Total	102

The total fires for the year were 2,220, and in this light, the number of known arson cases represents only 4.59% of the total. However, there were a further 429 where causes were listed as 'unknown' and if only half of these fires were arson, the percentage of arson in the rural community must surely begin to cause concern. Without a doubt, arson has reached rural Australia.

To the Metropolitan Fire Service, the statistics just quoted might appear to be somewhat insignificant in comparison to their arson problems and also on a national level, but to go from a non-investigation situation to two or three per week without an increase in investigation staff places the same strain on our resources as the multiple arson investigations of a metropolitan fire service. More importantly, this increases the chances of the crime either not being detected, or the case, if it reaches the courts, not succeeding in a conviction.

It is my considered opinion that public apathy and a lack of understanding by all those except the fire, law enforcement and insurance agencies, will continue to contribute to the proliferation of the crime of arson.

Like its counterpart in the computer age, the crime of arson continues to be tolerated by a largely indifferent society which is really not interested until it affects them personally.

One point of particular interest by 'those who care' has been the rising groundswell from Country Fire Services brigades, firefighting associations and concerned citizens expressing dismay at the leniency of penalties imposed by the courts in rural areas where cases of arson have been proved.

It would appear that the penalties provided are quite ample but the penalties imposed frequently belittle the seriousness of the crime.

I am forced to ask the question, 'Is the judiciary really serious about playing their part in combatting arson; do they really see the crime as it has become?'

There are problems and difficulties facing rural fire investigation at both National and State levels.

At National level these include the following:

(1) The lack of a central data base facility
(2) The lack of a central research facility.
(3) The lack of meaningful statistics correlation.
(4) No facilities or medium for the exchange of ideas or knowledge.
(5) The lack of a recognised training facility within Australia which will enable fire investigators to obtain training to various levels and just as important, a qualification which is recognised *and* accepted in the courts.

(5) contd

This is a pressing but solvable problem which I implore appropriate authorities throughout Australia to give serious consideration to. Surely the crime is serious enough to warrant establishment of a course. The facilities and expertise must exist in the world of Australian academic and arson investigation authorities.

(6) The National fire report form pro forma proposed for introduction throughout Australia is virtually useless for the recording of fires in rural areas.

At State level, some of the more pressing problems of arson investigation in rural areas are as follows:

(1) Lack of adequately trained investigators to meet the growing demand of the crime. I am sure all agencies suffer from this problem.

(2) A clear definition and understanding of the roles of each agency involved in arson investigation.

(3) Time and distance of travel to the more remote townships - four to five hours driving or flying is not unusual.

(4) The time and distance problems helps to compound the problem of the maintenance of good evidence.

(5) Educating the local Country Fire Service Brigade personnel in the recognition of unusual events at the time of the fire and the signs of arson and the maintenance of possible evidence. Even remembering to call CFS Headquarters when 'things do not look right' is a slow education task - remember we have 465 brigades which differ widely in experience, equipment and knowledge.

It would be quite unrealistic not to point out that there are some positive signs in our State's fight against the epidemic of the century.

Sound thinking people have pooled their ideas (and problems) in the formation of the Arson Liaison Group - the problem has been recognised and identified. To support this, it is encouraging to learn that just last week the Premier, on behalf of State Government has acknowledged the formation of the State Committee and the efforts of the various agencies in dealing with the problem.

Police, fire and technical service officers have, through personal endeavour, co-operated to develop the team approach. It is only through the team approach that the chances of successful prosecutions will increase. Detecting arson is only the tip of the iceberg, bringing the offenders to justice is the name of the game.

Slowly but surely the Country Fire Service brigades are accepting that *every* fire they attend is a potential arson case and as such the early call to the investigators, the preservation of evidence and the re-collection of the events following arrival at the scene is improving our chances of successful detection and prosecution.

In South Australia we enter the mid 1980's with some hope but little satisfaction of having achieved measurable gains in the fight against the crime of the century.

POLITICS OF ARSON

R. Smith

The word 'Arson' seems to have its origins in the late 17th century although the concept - wilful and malicious destruction of property by fire - is much older, for example,Nero and the burning of Rome.

No doubt this interpretion of fire was brought from the 'Old Country' to Australia, although it has taken to the late 20th century to recognise the problem as one that is highly destructive, costly, dangerous and organised, thus a threat to the whole community.

Traditionally, fires have been seen as the exclusive concern of insurance companies. In some respects this is still the case, as demonstrated by the outmoded and inequitable method of funding fire brigades still in operation in some States. Certainly, the cost of fires is identified as an insurance industry problem. In recent times, police involvement in detecting and investigating the crime of arson has been increasingly recognised, and this seminar, organised by the Institute of Criminology, is an expression of the seriousness with which arson is now regarded.

Reaching this position has taken some time and effort. The police in Victoria first started talking to ICA in late 1979 about their concern for the rapidly increasing incidence of arson. As a result, the police, ICA and other organisations formed the First Standing Committee on Arson in March 1980.

Since that time, the insurance industry has been concerned to make 'Arson' a dirty-word in the community; to establish it as a recognised and hated public enemy. In the early days it was quite acceptable to score off an insurance company by making a successful claim following an organised deliberate fire. Constant publicity on the cost of arson, and emphasis on who ultimately pays the bill, have made this particular lurk less socially acceptable.

This is a major achievement of the insurance industry people in the community know it is their hip pocket that will be hit by their neighbour's deliberate fire.

Parallel to this shift in attitude has come a much tougher stand by insurance companies. More companies now have their own specialist arson investigators and more are prepared to take their case to court. In Sydney eight or nine successful denials of claims have caused potential arsonists to think again. An automatic payout by an insurance company is no longer the case.

This is a significant trend. If it was not possible to obtain insurance it has been estimated that about 70 per cent of deliberate fires would not happen.

Legitimate grounds for refusing to accept a risk are difficult for insurers to identify unless considerably more questions are asked, not only about the physical aspects of security and fire safety, but also the moral hazard that may be embodied in the commercial, financial or personal history of the proposer.

It is at this point that I must take issue with the Law Reform Commission regarding some of the recommendations they have made to change certain clauses in the insurance contract. If these changes were put into effect an insurance company's ability to avoid a fraudulent insurance claim would be severely curtailed. In this the Commission has not shown itself to be up-to-date with current trends.

In order to assess whether to accept the risk to calculate the premium and decide whether there should be any loadings, the underwriter should have before him information which is relevant to the particular risk sought to be covered. Having decided to grant cover under the basis of the information upon which the risk can be accurately assessed, the underwriter is then concerned to ensure that the risk does not increase during the period for which the cover has been offered. Finally, when a loss has materialised, the underwriter must be in a position to assess the extent of that loss and the degree to which it is covered by the policy.

Non-disclosure is concerned with a failure by the proponent to volunteer information to the insurer. Misrepresentation is mainly concerned with proponents' failure to answer accurately questions put to him by the insurer. Under the duty of disclosure the proponent must disclose all material facts which are within his knowledge. Non-disclosure does not render a policy of insurance void. Its effect is simply to render it voidable at the option of the insurer. But if the insurer does avoid the contract, it is voided not simply from the moment when the act of non-disclosure occurred but it is treated as if the policy never existed, thus preventing a fraudulent claim.

While non-disclosure is concerned with the proponent's duty to volunteer information, misrepresentation is related to his duty to answer truthfully questions put to him by the insurer. Insurers have sought to avoid any problems which might arise in interpreting questions, and deciding whether any statement is material or not to the risk, by inserting in the proposal form or in the policy a clause whereby the proponent warrants the truth of his answers. This approach allows the insurer the means to develop a case for denial of liability in the case of fraud by seeking to show conflict between what has been said on the proposal form and what is discovered to be the case subsequent to the event. Misrepresentation usually arises in the context of proposed answers to questions put to him in the proposal form.

The Law Reform Commission in their Report NO.20, headed 'Insurance Contracts' state that the rule of non-disclosure should be modified. It is their contention that, if an insurer wishes to rely on innocent non-disclosure, they should warn the insured of his duty of disclosure before the contract is entered into. This duty should extend only to

facts which the insured knew or which a reasonable person in the insured's circumstances would have known to be relevant to the insurer's assessment of the risk.

The same modification is recommended for the rule in regard to misrepresentation. In addition, when determining whether there has been a misrepresentation, any ambiguity in the question asked of the insured should continue to be resolved in his favour. Stipulations in a proposal form to the effect that a failure to answer a particular question will be deemed to be an answer in the negative, should also be rendered ineffective according to the Law Reform Commission. Moreover, the Law Reform Commission believes that an insurer should be deemed to have waived the duty of disclosure to the relevant extent where it has failed to pursue an unanswered or obviously incompletely answered question contained in the proposal form.

On the question of fraud, the Commission believes the insurer's right to avoid a contract from its inception for a fraudulent non-disclosure or misrepresentation should be retained. However, a court should have the power to disregard the avoidance and adjust the right of the parties in cases where the loss of the insured's claim would be seriously disproportionate to the harm which the insured's conduct has caused or might have caused. This means that being a little bit fraudulent is fine.

It could be agreed that an insurer should not be entitled to avoid a claim by reliance upon a basis of contract clause. It could be accepted, with some reservations, that an insurer should not be entitled to avoid a claim by reliance upon innocent non-disclosure or innocent material misrepresentation even though I have been led to believe that ignorance has never been an excuse before the law. The law reform would allow a client who fails to disclose that he had 200 litres of flammable liquid in his factory, to later plead innocence on the grounds that he did not realise that the liquid was hazardous and would add materially to the risk of fire.

To protect their position, insurers must look for more detailed proposal forms to be filled in by the insured prior to the acceptance of any risk. Many of the current proposals and renewal forms in use are the greatest weakness in an insurer's defence even to the point of not being completed at all. These forms have two roles which can be of assistance to insurers:

- They can elicit information which will aid an underwriters decision to accept or reject the risk.

- Details in the forms may provide evidence to support an insurer's denial of liability.

We all know that large commercial properties are more likely to be the targets for deliberate fires. But all other classes of business are subjected to the threat of insurance fraud and operating considerations may prevent some companies, or all companies in some instances, from surveying the risk. Thus, obtaining as much information about the nature of a risk and any moral hazard involved through the proposal form is essential.

To some extent insurance companies can be said to be subsidising crime in Australia, and with the future help of the Law Reform Commission we could end up its main supporter. A thorough job of screening risks before providing insurance cover could help to reduce loss of life and property and would reduce insurance costs. The selection and pricing of risks which are sound from a physical, financial, moral and operational standpoint are essential in determining the appropriate cover to indemnify the insured in the event of a loss. Obtaining sufficient information to make this judgement can be done through a properly structured proposal form.

In the U.S.A., the Insurance Committee for Arson Control is compiling a model proposal form with questions geared to screen out risks which are potentially arson-prone. This has been developed into two stages which seek to isolate and treat specific insurance-fraud conditions. The first stage includes a number of trigger questions. Inadequate or questionable responses require completion of a more detailed second stage which would deal specifically with the insurance-fraud potential of a particular risk. The answers to the second questions may be key indicators in identifying a potential fraud. Consideration should be given to adopting the same approach here, particularly if the Law Reform Commission's proposals on non-disclosure and misrepresentation are introduced.

Issuing a renewal notice with a form requiring updated information on the risk and moral hazard should also be considered as a means of identifying any change in the material circumstances of the risk. In 12 months business could have got worse, unwanted stocks accumulated, machinery guards removed, vehicles could be in an unroadworthy condition, all of which could be indicators to an insurance fraud. Falsification of the information on this form would even under Law Reform Commission's proposals, be grounds for voiding the policy and denying the claim. Those of us here today who are anxious to see arson reduced should make this known to the Law Reform Commission.

Another matter needing careful consideration is the attitude of the judiciary to arson crimes. Traditionally, wilful destruction of property by fire has been seen as a threat to property only. Recent events in South Australia and Victoria connected to the 'Ash Wednesday' bushfires have demonstrated tragically that deliberate fires also threaten and destroy life. And yet the seriousness of this type of crime is not reflected in the sentences imposed on convicted arsonists. Recently, in Victoria, an employee of a plastics company deliberately set fire to the factory causing $1.5 million damage. He was charged and pleaded guilty to arson. The committal court recognised the gravity

of the offence by posting bail at $10,000. However, the trial court imposed a sentence of $100 good behaviour bond over a period of three years. Such a sentence is ludicrous and offers absolutely no deterrant at all. Worse, it allows the arsonist the freedom to set more fires.

The legislation in most States allows severe sentences for arson - life imprisonment in South Australia and a maximum of 20 years in Victoria. Improved techniques in arson detection and investigation are likely to lead to an increase in arrests and convictions. However, this effort will be entirely wasted unless the judiciary can come to grips with the implications of arson and incendiarism and deal with them accordingly. It is a grave crime that threatens not only property but life as well. It must attract the severest sentences possible.

There may be an opportunity here for the Australian Institute of Criminology to use its special relationship with the judiciary to develop greater understanding by the legal profession of the crime of of arson - how it can be prosecuted, the treatment of evidence in court, sentencing and so on.

The importance of a national intelligence network to collect and analyse information on arson and incendiarism cannot be over-emphasised. Mr Fraser's Government had resolved to establish a Crimes Commission and the insurance industry would have sought to ensure that arson became a reference for this Commission. Its future is now in some doubt, and it seems that the Australian Bureau of Criminal Intelligence offers the only established means of collecting data on a national scale. It is known that professional torches exist, and that they readily cross State borders in pursuit of suitable business. As the criminals are not fettered by State borders neither should police intelligence. Petty disputes must not be allowed to interfere with good police work.

Final points relate to the Federal Government's role in combatting arson. As we now have a new Government in Canberra it is opportune for this first'National Seminar on Arson' to forward recommendations involving government support. In the U.S.A. there are about 16 Federal Agencies involved in various counter arson programmes. These range from the Federal Bureau of Intelligence to the Internal Revenue Service, U.S. Postal Service, U.S. Forest Service, The Bureau of Land Management and so on. These sixteen agencies participate in or offer assistance in 97 types of activities, including providing discretionary funds, public awarensss campaigns, research and prevention programmes as well as investigation and detection measures. In Australia, only one Federal agency is involved - the Australian Bureau of Criminal Intelligence.

In addition, in the U.S.A. there are eight Federal Statutes governing arson-related violations with maximum sentences ranging from 6 to 20 years of imprisonment. One of the most significant of these is *Racketeer Infiltrated and Corrupt Organisations Act* (RICO). RICO is intended to control the infiltration of legitimate businesses by organised crime and has jurisdiction over arson when it can be shown that a group of people have been involved in a 'Pattern of Racketeering Acts'. RICO offers one great advantage for the insurance industry in that civil

suits can be lodged against those convicted to recover costs and damages. Insurance companies can recover legal fees and investigation costs related to arson claims. Senator Don Chipp has called for similar legislation to be introduced in Australia.

The Federal Government in Australia can no longer shirk its responsibility in this area. Government assistance must be forthcoming to support programmes developed by the Standing Committees on Arson and by the insurance industry and those which could be organised by community groups. Arson is a public enemy, and public funds are needed to fight it.

ARSON IN NEW SOUTH WALES

L. Noonan

Firstly, I will touch upon the legal aspects of arson. Arson has been termed the easiest crime to commit but the most difficult to detect.

In arson the law requires that we must show intent or that the arson was intended to result in the wanton destruction of property by fire. In this regard the obtaining of evidence for a prosecution is the sole responsibility of the police. When an offender is charged with arson, the law requires the crown to prove its case beyond reasonable doubt. In the civil courts however, the degree of proof is lessened and the fair preponderance of evidence of balance of probability suffices.

On the lighter side perhaps credence could be given to the views expounded by President Manuel Gabrera of Guatemala in 1909 who stated:

> 'Fire in houses or establishments that are insured is presumed to be arson, and consequently those who are interested in receiving the value of the insurance shall be imprisoned and shall not be liberated until their innocence is proven.'

This type of offence is committed in many ways for many reasons. The more common motives are - revenge, vanity, terrorism, riot participation, racial or religious persecution, pyromania, thrill seeking, sexual satisfaction, organised crime, concealment of another crime, payment of money and insurance fraud. The circumstances under which these motives are fulfilled display infinite variety.

NEEDS OF INVESTIGATORS

Prior to the introduction of the Arson Squad in New South Wales, research was conducted to establish the needs of arson investigators. The methods used in arson investigation here and overseas were studied. It was noted that in the past many investigations were conducted by unskilled, untrained and sometimes disinterested personnel, or by police who were capable of conducting fire investigations but often overloaded with other police duties.

The abilities of the detective to be employed in this area of police duties were therefore canvassed. It was established that a proper investigation of an offence of arson requires diligence, patience, perseverance and a willingness to co-operate fully with other police and various other bodies. Police find arson the most difficult, frustrating and unrewarding of any crime to investigate. Unlike murder or most other crimes, the evidence in arson matters is not always

obvious and immediately available or apparent. To conduct an investigation requires many more man-hours than is generally realised. It was resolved that all members of the Arson Squad should be interested volunteers, of high intelligence, mentally equipped to conduct protracted investigations, and suitable for training in the technical aspects of fires.

On the 22 November 1981, eight detectives were transferred to the Criminal Investigation Branch and attached to the Arson Squad. That personnel has since been increased to fourteen. Five members of each arson awareness course are also temporarily transferred to the Squad for a period of two months on the job training. As a result of the the increased incidence of arson it was agreed that this Squad could not investigate each and every offence. It was necessary to introduce a criterion of damage to property in excess of $50,000.00 before asking for the assistance of that Squad. However, in the case of serious fires where death or injury occurs, or in matters of public interst, the Arson Squad will attend and assist.

Because of changing technology, it was decided to introduce an Arson Awareness Course for the further training of detectives, scientific personnel and police prosecutors. The syllabus includes all aspects of the investigation of this type of crime. Some members of the Arson Squad also attend the commercial crime course and crime analysts course conducted each year at the Australian Police College, Manly, New South Wales. Further, they are all required to attend a one-day seminar on familiarisation with and demonstration of explosives. At that seminar they witness the effect of explosives and accelerants used to destroy motor vehicles and other property.

PROGRESS

Meetings were held with many interested bodies who are affected by this type of crime. The views and needs of their representatives were obtained and evaluated. It was established that insurance companies suffered huge losses from arson fraud.

When looking at the arson-fraud situation it was found that a number of persons who had more than one suspicious fire could still obtain the benefit of insurance. The main reason for this anomaly was the unavailability to insurance companies of data bank records. We found that it was too easy to obtain insurance cover on property. One area of concern was a lack of proper documentation of proposal forms. Therefore we as police are unable to assess whether or not a dishonest advantage was gained at the time of entering into the contract.

In our view, the insurance industry is better equipped to combat arson than we are. In this regard, when the opportunity arose to address

New South Wales members of the Insurance Council of Australia I suggested that the insurance companies could consider:

(a) Removing the incentive for arson fraud by providing insurance only for the correct value of property;

(b) inspecting and surveying buildings prior to issuing policies;

(c) employing properly trained claims officers and managers to detect fraud;

(d) checking to see if there is anything unusual about the insurance proposal;

(e) obtaining a credit check and investigating the background of the applicant;

(f) contesting claims through the courts when fraud is involved and the evidence falls short of a criminal charge;

(g) co-operating with the police, fire brigade, and other authorities. (In this regard it is suggested that a claim involving a suspect or offender not be settled until all police inquiries and court proceedings have been completed. Research has shown that when claims are settled before an inquiry is completed the investigation efforts fail. Under these circumstances, police naturally lose interest, as do prosecutors and the courts.);

(h) obtaining signed proof of loss by way of statutory declaration;

(i) blacklisting and refusing insurance to fraudulent claimants;

(j) investigating the value of a 'Hotline' programme to allow informants to supply information anonymously;

(k) displaying reward posters at arson scenes, offering a reward;

(l) offering reinstatement policies, and replacing damaged property rather than paying out money on claims;

(m) providing for the disclosure of previous fire and/or burglary claims on proposal forms and policies;

(n) collating intelligence relative to claims and sharing this intelligence with other companies through a data bank computer.

Police and firemen now have a better understanding of each other's roles. This is due to lecturers from both organisations attending each other's academies and lecturing on this type of crime. Firemen are now more alert in the detection of arson and arson offenders. Through their alertness and initiative a number of arsonists have been arrested.

Obviously the insurance industry has agreed that there is a need to review their procedures in an effort to combat this crime. Some insurance companies are now attempting:

(a) To remove the incentive for arson;

(b) a more efficient type of Proposal Form to combat fraud;

(c) to train company employees who are now more aware of the attempts to defraud their employers;

(d) to review premiums in areas of high risk;

(e) to reject fraudulent claims and fight them in the civil courts.

It was found that the continuity of investigations was often delayed due to the unavailability of witnesses. Firemen and police because of their varied shifts, time off duty, holidays and other reasons are often unavailable for interview. For these reasons material facts vital to the investigation are sometimes forgotten. This anomaly resulted in the introduction by the New South Wales Fire Brigade of a 'Suspicious Fire Incident Form'. There are thirty six questions posed in that document to the senior fire officer who first attends the scene. He is required to complete the form for the information of investigators. The availability of this document now enables scientific investigators and police to be aware of the opinion of the fire fighters.

An example of some of the questions posed in that form are:

(a) The state of the fire on arrival - whether in initial, middle or advanced stages;

(b) colour of the smoke and colour of flames;

(c) any familiar face in the crowd, and so on.

This form is later collected from the fire station by police and handed to the scientific investigators to acquaint them with the fireman's opinion.

My department has now introduced a form - 'Examination of Scene of Arson'. This form is a four page document which is completed by the scientific investigator during the scene examination. The two forms also act as a check list during the progress of the investigation. Both forms are in turn handed to the arson investigators.

At this stage it is anticipated that the fire brigade has identified the origin of the fire and that the scientific investigator has identified the cause. It is then a matter for the arson investigators to establish a motive and identify suspects or offenders.

The specialised training of police in the modern methods of arson investigation has led to a better quality of fire investigation. In addition to members of the Arson Squad, there are now detectives stationed throughout New South Wales who have successfully completed the 'Arson Awareness Course'. These police are utilised to investigate this type of crime when the Arson Squad is not available.

Police in New South Wales have been instructed to avoid highlighting this type of crime. Our experience is that the highlighting of arson leads to its increase. However, arrests for arson are being released to the media for publication as a deterrent.

One area of concern is that we now have questionable persons who present themselves as competent to investigate this type of crime. Before employing investigators we advise that you assess the credibility, qualifications, previous experience and technical training of the so-called 'instant experts'. I am confident that the courts of New South Wales will question the expertise of and the value of evidence gathered by unqualified people. Perhaps the Government should look at the question of licensing private investigators employed by the insurance industry to investigate the crime.

The high incidence of arson over recent years has caused concern among police. This fact no doubt prompted the Principal of the Australian Police College, Manly, to direct each member of the current Senior Police Course to prepare a paper on arson. The

twenty-four participants are all senior police officers from New Zealand, Fiji, Australian Federal Police and from each State of Australia. Following the marking of these papers a committee of course members was formed to formulate an overall course paper. After completing that document, that committe made the following nine recommendations:

(1) A committee should be convened to study the arson legislation of all states with a view to establishing uniformity in the identification of the offence.

(2) Each police force should have an established arson squad comprised of specialist investigators.

(3) Police, fire and insurance investigators should attend inter-service training. (On-the-job training for general police.)

(4) Arson investigators from all states should attend training courses on a national basis.

(5) A national data bank should be established at the Australian Bureau of Crime Intelligence.

(6) The collection, collation and dissemination of arson information should be the responsibility of the respective States, and the Bureau of Crime Intelligence.

(7) A more detailed proposal form should be implemented by insurance companies.

(8) A public awareness in schools, etc., by a campaign through the media supported by a 'Hot Line' programme with rewards offered for information leading to the arrest and conviction of offenders should be developed.

(9) Legislation should be enacted to provide for the free flow of information between police, insurance and fire services and for the protection of individuals from civil redress.

This course paper will be published towards the end of May and copies will be available to the public. I consider that the recommendations made in this paper are all constructive suggestions that need attention. I most certainly will obtain a copy of the paper and submit its recommendations to my superiors for consideration.

FORWARD PLANNING

There is a need for the resources to cope with the increased incidence of arson. Therefore a request will be made for an increase in the size of the Arson Squad in New South Wales and of available technical aids.

Statistics indicate that the crime of arson is clearly the fastest growing crime in the western world. The United States of America is particularly affected. As a result of this many law enforcement agencies and fire brigades throughout America have established highly sophisticated and detailed training programmes concerning the ivestigation of arson. It is clear that expertise must be gained and applied for a successful investigation to be carried out.

The formation of the New South Wales Arson Squad was a most positive step, and there is no doubt that all members of the Squad have gained invaluable work experience. 'Arson Awareness Courses' have been highly successful.

The majority of training manuals, literature, and training films on arson investigation originate from America and Canada. They are acknowledged as the most suitable for our needs, having in mind life-styles and social structures. Law enforcement agencies and fire brigades throughout the world send their representatives to participate in and study the various methods of investigation throughout those two countries. Apart from academic facilities available, the study of practical investigative methods is obviously necessary to implement those most effective.

A request has been made to the Minister for Police and Services by the New South Wales Standing Committee on Arson for the overseas training of police and firemen. That request is under consideration.

Some of the areas requiring urgent study and evaluation are:

(a) The value of an Arson Task Force made up of members of the fire brigade, scientific police, police prosecutors and detectives.

(b) The value of 'Hot Line' programmes as used in parts of the United States and Canada to encourage members of the public to contact authorities with information relative to arson.

(c) The value of the implementation of reward schemes and the displaying of reward posters at arson scenes.

(d) The value of publicity relative to the dangers of arson and also deterrent programmes designed to make the public aware of the cost to the community generally.

(e) The use of technical aids in the investigation of arson, including explosimeters and combustible gas detectors (know as sniffers) used for the detection of hydrocarbon vapours at the scenes of fires.

(f) Latest crime scene investigation methods being used by arson squads in America and Canada.

(g) Procedures and methods relative to bushfire investigations by authorities controlling this area in America and Canada.

(h) Methods of maintaining accurate statistics relative to all fires. This is an area requiring urgent review.

(i) Latent fingerprint identification on exhibits recovered at fires. Through the use of laser beam and coloured light exposure.

(j) The possible purchase of the latest training films and literature being used in America and Canada.

(k) Methods of investigation of arson committed upon schools, government buildings and motor vehicles.

My Department has purchased a new computer scheduled to begin operating next July. Planning has commenced for the supply of necessary statistics relative to all fires. Trends and high risk areas will be monitored. Plans to combat arson can then be prepared and implemented.

We anticipate that the New South Wales Fire Brigade can assist us with similar information when their new fire recording system commences also in July.

It is intended to continue training courses and to up-date our current training procedures.

We will request the federally funded body - Film Australia to produce suitable training films.

We will continue to monitor changing technology, here and overseas.

We will request that Arson Squad investigators from my State attend the proposed 'National Arson Course' to be conducted in Canberra. It is anticipated that that course will be funded by the Federal Government and police forces throughout Australia will be invited to send participants.

By increased training and expertise we will strive to improve methods of determining fire causes.

A request will be made to my Department to consider recruiting or employing scientists for technical purposes.

A request will be made to my Department to consider recruiting or employing psychologists to assist police in their investigations.

CONCLUSION

The investigator's value is directly dependent upon:

(a) Firstly, the extent to which he is mentally equipped to conduct an arson investigation.

(b) Secondly, his perseverance, determination and patience to wait for a break in the case.

(c) Finally, and most importantly,the evidence available to him.

ARSON - IS IT REALLY A FIRE BRIGADE PROBLEM

J.A. Boath

Let us examine that. The picture up until recent times was one of almost total discouragement, and firefighters were a party to the general apathy.

In the not-too-distant past, nobody really cared about arson. Even though arson is a capital crime, carrying penalties akin to those for murder, such as 14 years imprisonment. There was (and still is now) no wholesale community revulsion against arsonists.

The police preferred to find an accidental fire rather than an unsolved crime.

Firefighters aided and abetted this attitude by ignoring the obvious and incorrectly identifying the cause of fires. This was the reason for the high number of 'cause unknown' listings on fire reports - if you put down 'cause unknown' you did not have to do any more paper work.

Insurance companies paid out on dubious claims rather than take on lengthy and costly court battles, where interest was accruing every day over the period of non-payment. The public did not care because small individual premium increases had no mass impact. In most cases, they weren't even detected.

The Ned Kelly syndrome prevailed, and it still does. If someone can burn down a house or a building that is insured, collect the insurance money and get away with it - good luck to him is what people say. So the only person who has been caring very much about arson has been the arsonist - and the person who stood to profit from the fire. Sometimes but not always, the arsonist and the profit maker are the same person.

I believe that the apathy towards arson has come to an end - the fact that we are all here at this major seminar is a good indication of that.

This seminar is the most pronounced public demonstration so far that those who are the first affected by arson - all the professions and interests represented here - are really starting to care very deeply about the problem.

And this seminar will be the spark, I hope, that ignites a passionate response in the community against arson and the arsonist, because ultimately it is only by changing the community attitudes - and that includes our attitudes - that we are going to be successful in what is a guerilla war in the streets of our cities against criminals whose weapons are fire and hydrocarbons.

If we are to try to change community attitudes, those of fire brigades are of paramount importance, because the firefighters are the first to come face to face with the front line of this urban warfare. How do we go about changing fire brigade attitudes?

Well, let us look at some of those attitudes and the reasons for them.

It Is Too Hard

Investigating fires is hard work and takes a lot of time for very little perceived success. No firefighter wants to create work for himself.

If a fire appears a line-ball situation as to whether it is suspicious or from natural causes, the firefighter in the past would almost certainly have opted on the easy side.

On a wet and windy night, when you are tired and wet from fighting the fire, it is much more comfortable back at the fire station than turning over and sifting through rubble and embers.

The Insurance Pays Anyway

Maybe the attitude of the firefighter on this aspect of the problem reflects the community attitude. Firefighters can't see a cost benefit in pursuing matters too diligently. And who cares about insurance companies - they have got plenty of money.

I Never Hear Any Feedback - They Never Arrest Anyone For The Fires

People need to know whether they are being effective in whatever they are doing. Firefighters often complain that they never got any feedback. They put in reports and statements and so on, but the end result - or even some interim information along the way - is seldom passed back down to them. For all they know, their efforts are a waste of time. This is a real killer of enthusiasm and the team-work approach. It is like the man running the first leg of a relay not finding out how the race has finished. Extremely frustrating.

Courts Frighten Me

You'll often hear this from a firefighter who has cause to be going into court. Courts are unfamiliar places to the firefighter - and are to be avoided if at all possible. This is another and a deep-seated reason for a working firefighter not to look for suspicious circumstances surrounding a fire.

Anyway, It's Usually Electricity

This is the hatstand of the careless firefighter and of other careless investigators. In actual fact, blame can be sheeted home to electrical malfunction in only about 1 per cent of fires.

But if you put down electricity as the cause of fire, it saves you having to look further for the real cause. It is not unusual for police to do exactly the same when asked to investigate.

They Never Asked Me

Many firefighters have pertinent information regarding a suspicious fire - but never get asked about it. Usually investigation stops with the opinion of the first fire officer to arrive - (and note, I said, 'officer', not 'firefighter'). Firefighters at times - and certainly if they receive proper training and conditioning - will have vital information to contribute. They often have important pieces of information but are unaware of their value in creating an overall picture.

At the simplest level, firefighters can be aware of crowds and of regular faces among them. Late last year two of our men received certificates of commendation for their alertness in spotting a suspicious person at a number of fires. They informed the police, and the police were able to successfully arrest and prosecute the person in question.

SOLUTIONS

These are the problems. If you look closely at them, you will see that, just like the community generally, the overall stumbling block is attitude. How do we go about changing the firefighter's attitude as the first step in a campaign to change attitudes generally? Let us start with a new, positive approach.

Arson Is A Fire Brigade Problem

Arson is definitely a fire brigade problem because they are first on the scene, have to cope with the initial major problem, are at risk themselves from the work of the arsonists, and have the potential to contribute most by starting off the campaign against arsonists on the right foot.

Suspicious Fires Are Found By Firefighters

Like we have buried the myth about electricity, let us bury any myths that may be held about super sleuths who come along and find suspicious circumstances surrounding a fire that the fire brigade has not identified. It happens occasionally, but the frequency is so small that it would not even be statistically relevant.

By far the vast majority of suspicious fires are discovered by fire-fighters, and it is the fire brigade which alerts other organisations and people - the first link in a chain that hopefully leads to conviction or a successful result in a civil court.

Vital Early Evidence

Some of the most important evidence can be obtained while the fire is still burning. This early evidence, often from the very first seconds and even sometimes as the brigade is arriving, might just be the tiny trigger that generates a far more detailed investigation than otherwise would have been the case.

Seeing somebody leaving the scene hurriedly is an obvious example, but just as important is the condition of any door or window that was open or forced, or to what extent the building was involved on the arrival of the brigade.

We recently had a situation in Sydney where the proprietor's stated time of locking up and leaving, and the extent of fire involvement on the arrival of the brigade a few minutes later, were incompatible. This was the first indication that the fire needed more detailed investigation. Such investigation produced two other suspicious circumstances. Taken together, the overall picture looks like resulting in, at the very least, a successful defence of non-payout by an insurance company to the tune of more than $100,000.

Utilising Firefighter Experience

Firefighters - with due regard to everyone else here - know fire behaviour better than anyone else. Simply, they see more of it, both naturally and un-naturally caused. Because of that fact, they are in a much better position than anyone else to be alert to suspicious circumstances.

Even the most junior firefighter can be considered to have more value in fire observation than the average citizen because of the theoretical training firefighters receive. The aggregate picture that emerges from talking to all the individual firefighters present may give a much truer reflection of the circumstances surrounding a fire than the story that emerges from talking to just one firefighter - even if that firefighter is a senior officer.

Fire Statistics Tell A Story

Various aids and tools are available to most trades. Fire report statistics are a ready-made tool to identify and hopefully counter trends in the arson spectrum.

N.S.W. Fire Brigade statistics tell us that suspicious vehicle fires have increased over a period of 16 years by 400 per cent, and in recent years the rate of increase has been even more alarming. Building fires also show an abnormal increase, but not to the same extent. Statistics can indicate geographical problems as well as numerical ones. This is evidenced by the school fire experience in Sydney in recent years where vulnerable areas have been identified.

This has allowed the N.S.W. Education Department to take specific security measures, in identifiable areas at risk, in order to combat a clear statistical trend.

Similarly, a combination of fire and economic statistics might be utilised in arson prevention by identifying in advance, areas and types of businesses most at risk.

For example, we know that the fast-food industry has recently undergone a vast upheaval in the area of insurance premiums! The new A.F.I.R.S. should very much improve this area, and it is expected that all fire authorities will adopt the system.

Producing A Competent Firefighter Witness

It is not too difficult to produce a competent firefighter witness. All it needs is closer liaison with police and legal people, suitable training in the preparation of statements, as well as the encouragement of better, and therefore more effective, attitudes by feeding back relevant information.

Results Will Be Immediate

The results of the changed approach I am advocating will be immediate - possibly because our overall effectiveness against arson is now so relatively poor. A more enlightened attitude within the N.S.W Fire Brigade, dating from about a year ago, has already produced results.

In a major warehouse fire, the design of arsonists was foiled by evidence presented at a Coronial Enquiry. The successful case turned largely on the experience and training in fire behaviour of fire brigade officers, and the result was $1 million payout prevented - and a recommendation from the bench that criminal proceedings be started. The way this million-dollar payout was prevented was unusual and teaches an interesting lesson.

After major fires we take photos of building construction behaviour for training purposes. Some months after taking the photos, the officer in charge at the fire was due to attend the coronial enquiry. He asked whether photos were available to jog his memory. It was only when the photos were reviewed at this stage that certain aspects concerning the fire came to light. The photos were handed over to the police as evidence together with the fire brigade interpretation of their meaning. The photos, and a fire officer's evidence in court, resulted in the successful conclusion of the case. On the same day, in another court, the same officer gave evidence on denial of liability by an insurance company.

Again, a payout of $1,000.000 plus was avoided based on the experience of the officer and his being able to confidently give the background to the reasoned conclusions to which he had come. Similar cases are in the pipeline, but they can not be discussed at this stage because they are sub-judice.

There are other results from utilising the experience of senior fire officers. In one case recently an insurance company was possibly saved major expense when a fire brigade officer was able to show that a fire in a pizza parlour, which the insurance company considered suspicious, was naturally occurring,with fire-spread caused by a well-known accidental method.

Projected Improved Effectiveness

Within fire brigades it should be a relatively simple matter to place greater emphasis on arson awareness, and to train firefighters better in cause and origin determination. This is being done in the N.S.W. Fire Brigade with excellent results already as previously stated.

It should also be relatively easy to create better understanding between firefighters, police, insurance companies and their fire investigators. Again, this better understanding is under way in New South Wales with an excellent relationship existing particularly between the fire brigade and police arson squad.

The Board of Fire Commissioners of N.S.W. has recently decided to make certain advice more readily available to the insurance industry and to investigators. This will help enormously. Feedback from these steps, provided it is passed down the line, will encourage the crack-down on arson at an accelerating pace. Where possible, the feedback of successful convictions and preventing of arson fraud payouts should be made public so as to encourage a community awareness of a successful counter-attack being made against arson. This is a firm plank in the N.S.W. Standing Committee on Arson's platform.

WHAT SHOULD THIS SEMINAR DO

Just by being here we have achieved a greater public awareness of the fight against arson, but there are a number of positive steps that could result from this seminar.

1. Each State represented here should decide to increase the training of firefighters and firefighting officers in arson detection.

   It may be that a national training programme needs to be set up, or that a number of people should go overseas for detailed study and training to come back and pass on what they have learned.

2. All sections of the fight against arson represented here should give serious consideration to a team approach to arson investigation.

Time will not allow me to spell out how that team approach should work, but an article in the current issues of the N.S.W. Fire Brigade's magazine, Fire News for April 1983, explains my thoughts on the matter.

3. We should, from this seminar, decide to mount a public education campaign to reinforce the repulsive nature of the crime of arson, and to educate people that arson is a cost that hits every single individual in the pocket - whether or not the arson fire occurs in their own back yard or 3000 kilometres away across the nation.

4. From this seminar we should structure a national arson committee, if only to become a central co-ordinating point for information on arson trends and arsonists across Australia. It could also act as a lobby group to secure the funds needed to mount the public education campaign I have outlined.

But whether or not we decide to take those steps, we can - at the very least - all leave this seminar more firmly committed to working together to eradicate arson from our community and ensure that arsonists are where they belong - behind bars.

ARSON IN AUSTRALIA DIMENSIONS OF THE PROBLEM AND RESOURCES TO COPE

J.S. Evans

In fighting arson and incendiarism our first task must be to establish the dimensions of this threat in Australia. Regrettably, this first and vital hurdle is one we have not yet overcome. Nor are we likely to do so in the foreseeable future, unless there is a change of direction at Federal Government level.

COST OF ARSON TO THE COMMUNITY

Police reports recorded about 3,000 cases of deliberately lit fires in Australia in 1980/81 at an estimated cost of $120 million. This dollar loss figure, which does not include unreported deliberate fires, represents only the superficial loss of structure and contents. Police experience suggests that their estimates could be trebled if all insured losses are taken into account. If the police are correct, these total insured losses, which cover such items as loss of profits and production, as well as standing charges like salaries and rent or services, could be about $360 million. It should be remembered that police estimates do not include the hidden, social costs arising from loss of jobs and taxes, or those associated with loss of life and injuries, fire fighting, police investigations, court proceedings and re-building of property to improved fire-safety standards.

Using an American model developed by the National Fire Data Centre, a very rough extrapolation of figures suggests a basic additional social cost of arson of about $480 million, more than the national budget for the Department of Foreign Affairs.

As the Fire Data Centre has pointed out, 'Fire costs society much more than just the direct dollar loss of what is burnt in the fire. The cost of running fire departments, the cost of building fire protection into buildings, the cost of insurance, the cost of medical treatment and temporary housing and many other costs must be considered in computing the total bill to society - direct property losses account for only 25 per cent of the total'. This gives an incomplete picture of the dimensions, social and fiscal, of the arson problem in Australia. At this point you would be justified in asking why it is that more accurate figures are not available. There are several reasons.

Only now are the State Police Forces, through the Australian Bureau of Criminal Intelligence, looking to introduce standard terminology and a standard fire reporting form. This will ensure that data will be compatible from state to state which was not so previously. In addition, the system will provide comprehensive police estimates of deliberate fire costs. Collection of these records by the Bureau will provide the opportunity to cross-check information against other files held and so assist in identifying evidence of organised crime. An

investigative facility not previously available. The insurance industry is fully in support of this initiative and hopes the Police Commissioner's meeting in May 1983 will agree to its introduction.

Recently, the Standard Association of Australia published a new standard, AS 2577, for the collection of data on fire incidents. Based on similar systems operating in the United States and New Zealand, the Standard provides a method for reporting, collecting and processing fire-related data for statistical purposes. Hitherto, the agencies involved in collecting fire statistics have not provided an accurate picture of the true cost of fires. Although the new standard will assist in planning an evaluation of fire protection methods and equipment it will also provide a means of recording and analysing suspicious fires. This information, correlated with that provided by police reports, will provide the first real attempt to collect national fire and arson statistics.

I understand that the Western Australian Fire Brigade, together with that State's branch of the Australian Bureau of Statistics, are working on a computer programme to implement the Standard. Once established, the programme will be adopted on a State-by-State basis. Again, on behalf of the insurance industry I would like to encourage the ABS to accept data from the States and compute national figures on fire incidents.

INSURANCE INDUSTRY INITIATIVES

The insurance industry has not been lagging behind in terms of collection statistics, though these are more related to insurance fraud than total fire costs. Two programmes introduced by the Insurance Council of Australia are geared to aiding insurers and others in fire claims investigation. In time, these programmes may also provide a useful cross-reference with other records to establish the true dimensions of arson and incendiarism.

The Insurance Register of Losses was established in Victoria in March 1980, and went national in April 1982. At present, input is received from more than 220 loss adjusting organisations representing 184 insurance companies. Investigations into insurance fraud - arson fraud for example - can be aided by data on the Register. Adjusters can identify when claims have been lodged against more than one company for the same event; when insurable interest has been overstated; when individuals have developed claims histories through several classes of business; when false names are being used and so on. To date, it is estimated that the Register has contributed to claims savings in excess of $1.5. million.

Another thrust towards offsetting arson and fraudulent claims is covered by the Insurance Reference Bureau Limited, which was established in July 1982 and operates totally separately from the Insurance Register of Losses.

Membership of the Bureau is open to all authorised insurers, police, fire services, and loss adjusters. All ICA members are members of the

Bureau. Its purpose is to facilitate an exchange of recorded information between members. Data has been accumulated from ICA member companies since 1975 in the form of 'Request for Information' circulars. Since July 1982 the collation of information has become more formalised and a phone-in enquiry service provides access to this 'insurance experience'. Members requiring information on a specific claim can ask for details to be cross-checked with those on the Bureau's file. If a match is found the enquirer is provided with contact names in insurance companies which have provided the matching file so that follow-up investigations can be completed direct with the insurers concerned.

I firmly believe it is essential for all agencies involved in combatting arson to come to grips with the political, social and fiscal costs of this crime. Only when the size of the threat can be measured will it be possible to gauge what resources are required to combat it.

Considerable research has yet to be done in a number of areas, such as social and community costs, and perhaps I can use this as an opportunity to invite the Institute to consider what their Research Unit can contribute to finding effective solutions to gathering accurate data in these areas.

The criminal and political acts are clearly those that can be dealt with by the legal system. However, the behavioural motives are much more difficult to treat. If we are to examine the resources available to cope with arson-related problems then we must ask ourselves about our ability to cope with the psychology of arson. We must find out why these attitudes are expressed in fire and what can be done to prevent individuals from resorting to the torch. Some research has been done on this subject overseas, but, as far as I'm aware, there have been no studies peculiar to the Australian arson scene.

Vandalism, which may be inspired by aggression or anti-establishment feelings is a significant cause which can be easily overlooked.

The All-Industry Research Advisory Council (AIRAC), a working group set up by the insurance industry in the USA, recently completed an 'Arson Incidence Claim Study'. Information was obtained from 7,630 claims lodged with the 10 largest insurance companies. These are the results of their study.

- In 1,615 cases (15 per cent) arson was involved. Total loss in these cases - US$165.5 million (31 per cent).
- Arson is more common in commercial risks than residential buildings.
- Average arson loss for commercial and residential buildings = half as much again as loss from other fire causes.
- In 50 per cent of cases motive for fire is vandalism. Next most common motive is insurance fraud.

It is to this last statement that I would like to draw your attention. As far as I am aware, no research has been done Australia-wide to establish how many deliberate fires are attributable to vandalism. However, as the Australian arson scene seems to reflect that in the USA, there is every reason to believe that vandalism is the cause of a significant percentage of deliberate fires in this country. This is all the more disturbing because information from a recent US Federal Bureau of Investigation study showed that youths between 13 and 19 years of age accounted for 42.8 per cent of arson arrests. While many of these arrests would have been associated with school fires, the US experience has shown that these fires are just one manifestation of a developing trend in juvenile arson which now includes homes and businesses.

If the same trend is developing in Australia, and figures from New South Wales would seem to suggest it is, vandalism represents a significant problem for those authorities involved in juvenile counselling. It also presents opportunities for novel and unfamiliar remedies. Perhaps one of the most exciting programmes in the United States dealing with young firesetters is their juvenile counselling programme involving fire brigade personnel.

In 1975, Dr Kenneth Fineman, a member of the California State Psychological Association, established the Fire Services and Arson Prevention Committee to tackle the problem of juvenile arsonists. The Committee is composed of psychologists, firemen and members of the public. The goals developed by this Committee, and since adopted by other groups running similar programmes, are:

1. Teaching fire services personnel to recognise problems in children that may lead to recurrent firesetting.

2. Teaching fire services personnel how to interview firesetting children and their families.

3. Teaching fire services personnel methods and strategies for educating curiosity firesetters and their families.

4. Teaching fire department personnel to determine children and families which require professional mental health assistance based on the severity of their problem.

5. Teaching fire services personnel ways to refer children and families for appropriate mental health insurance.

These programmes seek to divert the juvenile firesetter from the criminal justice system and involve him or her, and often the parents as well, in an intensive counselling programme.

The various programmes now in operation in the US have some common elements. Both parents and the child concerned are interviewed and given sympathetic counselling when appropriate. Often this will involve fire safety and fire consciousness educational programmes through school or direct with firefighters at the local fire station. In all cases, firefighters try to be understanding and helpful, working *with* the young offender, rather than punishing. The limitations on the firefighter's ability as a counsellor are well recognised and no attempt is made to take the place of professional mental care.

Most programmes have now developed specific handbooks or guidelines on interviewing techniques and model procedures. When it is obvious that children do require professional help, referrals are not made unless the parents have given their consent. All of the programmes have high visibility in their communities. Often parents will bring their child to the fire prevention officer when they become worried about fire-setting behaviour, even before the child has become a first offender.

Statistics collected by these programmes show very effective results. In Los Angeles the number of incidents in juvenile firesetting fell from 169 to 20 in one year. In Upper Arlington, Ohio there is a 3 per cent repeater rate from a total of 360 young people who have gone through the counselling programme. In Seattle, the group there reports a 95 per cent success rate with their programme.

I have quoted this example to illustrate that creative use of existing resources can be employed to minimise the threat of deliberate fires.

RESOURCES - SUFFICIENT TO COPE?

I have attempted to outline the extent of arson and incendiarism in Australia, and given some idea of the far reaching ramifications of an activity which is both costly and destructive. To balance the scales, it is appropriate that I now consider the current resources marshalled to prevent and counter the spread of deliberate fires.

A State-by-State round-up of police preparedness reveals that only one State, Victoria, has had an arson squad for any length of time. That was established about 20 years ago and now has 17 officers. New South Wales formed an arson squad in November 1981 and now has 20 officers. In Queensland the arson squad was separated from the bomb squad in February 1983 and now has 12 officers. A squad of 8 officers is being formed now in Tasmania supplemented by at least one CIB officer in every division who has been trained specifically in arson investigation. In South Australia, Western Australia, Australian Capital Territory and the Northern Territory there is no specialist squad to investigate deliberate fires. I suggest that police resources to cope with the alarming increase in this crime are totally inadequate on a national scale.

State Governments, in recognition of their responsibility to protect the public, must consider allocating more funds for the development of specialist arson squads. To be fair, I should point out that in Victoria

and New South Wales the arson squad complement has more than doubled in the last 12 months. An indication of the gravity with which arson-crime is viewed in those States.

In this respect, training of detectives in arson investigation is an essential adjunct to their capability to uncover deliberate fires and seek those who started them. There is no doubt that experience 'on the job' is invaluable, but it must be complemented by detailed and specific training. Investigations, especially when arson-fraud is suspected, must cover not only the fire scene, but the financial, personal and insurance circumstances of any suspects. It is demanding and time consuming police work which requires the development of particular skills and knowledge.

It is encouraging, then, that training of police at the State level is likely to be supplemented by a comprehensive national arson investigation course developed during the last 12 months. A training programme which will assist detectives in identifying deliberate fires and the devices used to start them, taking and preserving of appropriate evidence, recognising an arson-fire and being aware of the many arson-fraud schemes devised by organised crime, is the start of an effective deterrant to deliberate firesetting and one fully supported by the insurance industry. Once again, the message to be conveyed to the Police Commissioner's meeting next month is that the insurance industry hopes they agree to the course being established as quickly as possible.

Another area needing close examination and one where resources are probably insufficient to deal with the workload is that of police forensic laboratories. In Victoria we enjoy probably the best equipped police laboratory in Australia for arson detection and certainly one of the most knowledgeable investigators in Dr Peter Thatcher. In Victoria too, the forensic facilities have been boosted by a mobile laboratory that can quickly get to the scene of a fire. In Tasmania, the forensic facilities are also of a high standard under the general supervision of Sergeant Ron Martin, whose studies in the USA, Canada, and the UK have broadened his own considerable experience and skills.

I am sure both will agree that two basic points apply to the investigation of fire scenes. First, arson investigators must be able to get to the fire-scene as quickly as possible, preferably while it is still smouldering; and second that a thorough examination of the scene is a job for specialists. For example, metallurgical engineers can pinpoint the temperature to which a metal has been raised, so can determine the likely source of the fire. Chemical engineers can track the path of a fire by measuring the intensity of heat that has caused plastics to melt or be consumed, or they can establish if accelerants have been used. Electrical engineers can establish if a given piece of material has been energised by electricity to the point of ignition. Elimination of all accidental causes of a fire is the first step in establishing if it was deliberate and yet these skills, if available to the police, are often available only after a considerable delay.

Advanced technology does exist to assist in fire investigation such as the use of argon lasers to raise fingerprints from burnt metal objects, or ultra-violet rays which can detect fluorescence from accelerants found at fire scenes or infra-red rays to examine burnt documents. However, I doubt that many police departments in Australia have such sophisticated equipment at their disposal.

The fire brigades, too, must come under some scrutiny. Certainly, in South Australia and Tasmania and most recently in New South Wales and Victoria, newly established fire investigation units can assist police by establishing the fire cause and providing valuable eye-witness accounts of the fire in its early stages. Most representatives of brigades to whom I have spoken emphasise that their role is to establish the fire cause. However, they also acknowledge that many of their officers require specific training in fire scene investigation and a basic arson observation course to help recognise tell-tale signs that can point to an arson fire.

Once again it seems that appropriate training and support equipment is lacking.

In examining those agencies directly involved in fire investigation I would not like you to think that I intended to overlook the insurance industry. Certainly this industry has much to do to marshall its own resources effectively. However, some useful work is being done already. I have mentioned the Loss Register and Reference Bureau; the Insurance Resource Committee on Arson is currently looking at projects including an Arson Award Scheme, guidelines on the preparation of a case for civil court and the development of a detailed, more demanding proposal form on which acceptance of a risk will be based.

In addition, this Committee in conjunction with American Reinsurance will be staging two arson workshops in September led by John Barracato, a well-known and respected arson investigator from the United States. These workshops are aimed, primarily, at the insurance industry and are designed to produce ideas for effective anti-arson programmes.

It would be inappropriate before completing this presentation not to mention the Standing Committees on Arson. These committees, established in all mainland States, have quietly done much behind the scenes to combine an 'all-fronts' attack on arson. These organisations, representing police, fire brigades, the insurance industry, gas and electricity services, loss adjusters and so on have done much to pave the way towards closer co-operation and understanding of each other's problems.

In many ways, these committees are microcosms of what we have here today. A long time ago they recognised that arson and incendiarism are not merely problems for the police, or the fire brigades, or the insurance industry. Arson is a problem that affects every one of us, directly or indirectly. In drawing all these forces together, this seminar should be seen as the catalyst for promoting understanding of the threat, a more purposeful commitment to controlling the social and fiscal costs of deliberate fires and the inspiration for allocating those resources which will effectively reduce this menace to the fabric of our society.

THE SOCIAL CONSEQUENCES OF ARSON

M.R. Pallavicini

The New South Wales Standing Committee on Arson congratulates the Australian Institute of Criminology on bringing together for the first time all parties interested in the arrest of the rising trend of Arson.

Specialists from government, police, fire brigades, the insurance industry and other national bodies will deal with specific aspects of the definition, investigation, prosecution and prevention of arson and, as a non-specialist in this field, I will try to describe broadly the social consequences of this rising crime in Australia.

Reference to a large amount of reading material on arson available overseas, largely in the US and Europe, has not brought to light any papers which might deal with the overall social implications of arson, and I therefore must start completely from the beginning. This is made all the more difficult because I am an engineer and not a social scientist.

The Oxford Dictionary defines arson as the 'wilful setting on fire of a house or other property'. To this specification American legal definitions add the word 'dwelling' that is 'dwelling house', 'public building, motor vehicle and aircraft'.

Again the Oxford Dictionary defines 'social' as living in communities, unfitted for solitary life, concerned with society or mutual relations of men or classes.'

Finally 'implication' = 'consequence' is defined as 'the involvement of the truth of, or meaning.' Through some lateral thinking I believe we can stretch this definition to include the terms, 'loss' 'handicap' or even 'blessing'.

Since the original dictionary definition of the term 'social' was written, mankind has developed into a complex inter-related technological society with one human depending on the other, none of us being able to live as hermits under present circumstances. Thus it would appear reasonable to extend the term 'Social Consequences of Arson' to more tangible and intangible costs, and the effects of arson fires to every member and every group of the Australian community. This then would include governments at the three levels, owners, lessees, individuals, businesses, producers, services industries, carriers of liabilities under contract (insurers), adults, children, city dwellers, farmers, employed, unemployed, men, women and children of all walks of life.

INCIDENCE OF ARSON

Although we all may at times feel compelled to quantify the incidence of arson in Australia in terms of the number of cases of arson, the number of lives lost and the monetary loss resulting from arson, it is good to say that at this stage we can only apply experience factors from overseas to somewhat incomplete statistics available from the Australian Bureau of Statistics and the Insurance Council thus coming up with very vague estimates of the problem in this country. Figures quoted for material and consequential loss in this country have ranged from $110 million - $200 million but we do not have a reasonably accurate measure of the monetary loss to Australia at this point in time. It is, however, hoped that the introduction of the new Australian Fire Incidence Reporting System as laid down in the new Australian Standard AS2577-1983 will result in reasonably accurate estimates of monetary material damage/loss once the system has been introduced universally throughout all fire brigades in Australia in the next 2-3 years.

To illustrate, however, the magnitude of the problem, a few words about arson in the United States may be in order. Crime in the United States is divided into Index I, Index II crime with Index I crime hitherto consisting of -

murder and non-negligent manslaughter
forceable rape
robbery
aggravated assault
burglary
larceny-theft
motor vehicle theft.

All other crime is considered of lesser severity and classified as Index II crime. The US Congress has recently decreed that arson be added to Index I crime and it is now reported on together with the above classification in the Uniform Crime Reports of the Federal Bureau of Investigation.

The FBI Uniform Crime Reports 26 August, 1982 for the year 1980-81 report the following Index I crimes for a total of nearly 13,000 reporting police forces covering a population of 220 million -

murder and non-negligent manslaughter -	21,461
forceable rape	78,235
robbery	561,212
aggravated assault	615,710
burglary	3,572,630
larceny, theft	6,833,051
motor vehicle theft	1,028,852
arson	119,102

This then really means that in the US one murder is committed every 23 minutes, one aggravated assault every 49 seconds and one case of arson in just under every four and a half minutes. I would be stretching one's imagination to translate the US incidence of arson to Australian conditions because obviously the same sociological conditions do not apply here. But if one were tempted to draw a straight out proportional comparison, an arson case would happen in Australia once every 64 minutes resulting in some 8,700 cases per year. Purely from the statistics on suspicious fires available in New South Wales this might be inflated but not so unreasonable as to disregard the magnitude of the problem in the US and its implications for Australia altogether. Incidentally the same FBI report indicates that 15.4 per cent of all arson cases in the same population sample were 'cleared by arrest'.

SOCIAL CONSEQUENCES OF ARSON

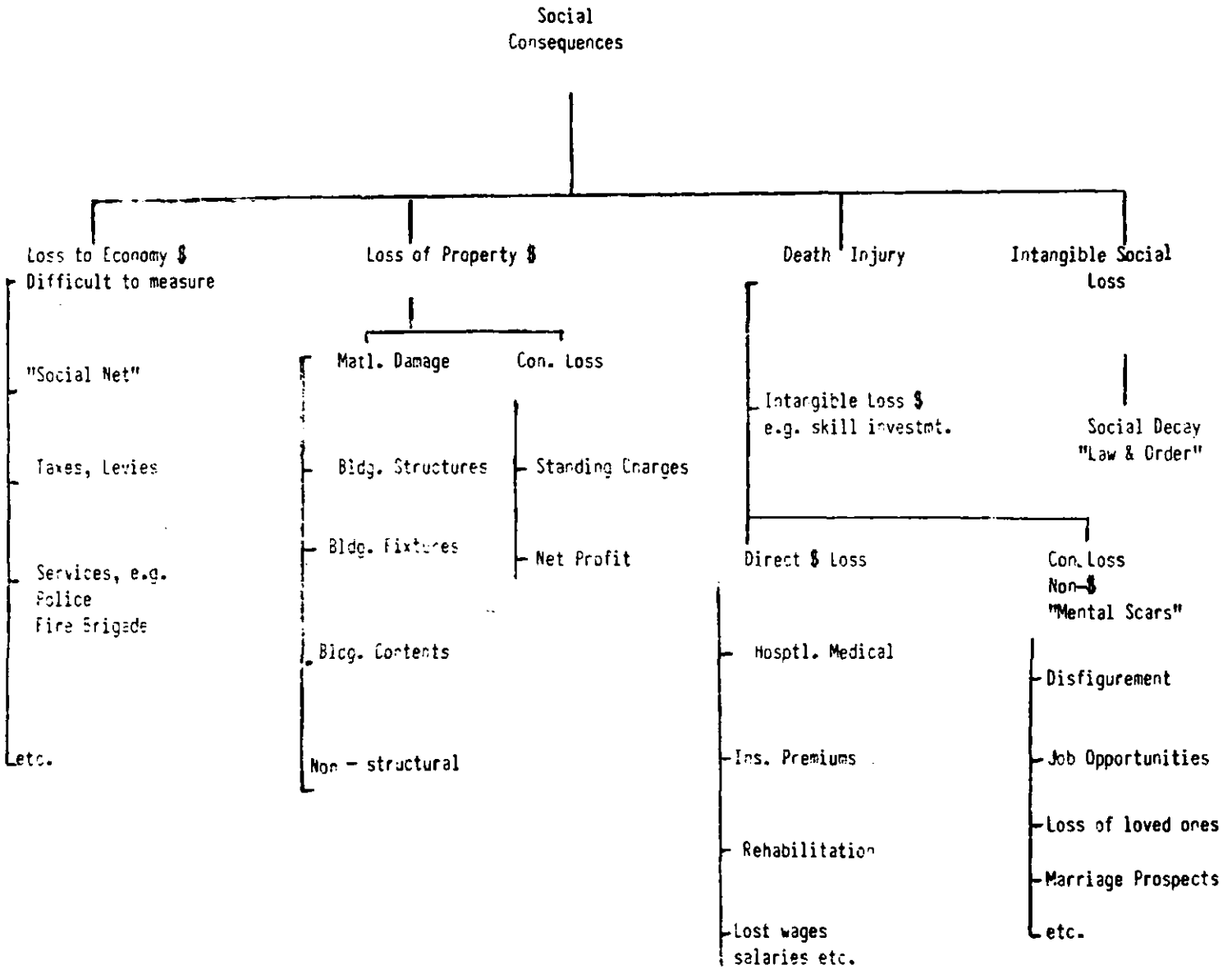
To a layman the social consequences of arson to the community would be the total of the tangible consequences measurable in monetary terms, the intangible monetary losses which cannot be readily measured financially and the equally important intangible non-monetary losses to individuals and sections of the community resulting from loss of property, loss of life and injury.

It would appear that the intangible non-monetary loss to individuals and the community are those losses which simply cannot be replaced and the consequences wrought upon individuals and groups resulting from such losses. These would include mental scars resulting from the loss of life of a loved one, serious injury to a member of a family or friend and the psychological consequences remaining with the persons affected for the rest of their lives. Graphically the overall social consequences of arson could perhaps be illustrated as in the diagram on the following page.

It is now proposed to examine details of these individual categories of social consequence in the following paragraphs;

Loss of Property - With regard to loss of property resulting from fire, including arson, it is assumed that such property may either be insured, under-insured or not insured at all. Where such property is not insured at all, the property can be assumed to be entirely 'self insured', that is the owner has to make his/her own arrangements for the funding of the replacement. The same reasoning applies to under-insured property where the proportion of the funding by the owner for the under-insured portion of the property to the total replacement cost of the property bears the same relationship as the sum insured bears to the total value. In other words the owner has to pay his share of the replacement cost.

Typical examples of completely uninsured property are government property such as public schools in New South Wales, railway rolling stock, permanent way and signalling equipment, Telecom telephone exchanges and the like. Typical examples of under-insured property would be owners of residential, commercial and industrial buildings


Social
Consequences
Loss to Economy $
Difficult to measure
"Social Net"
Taxes, Levies
Services, e.g.
Police
Fire Brigade
etc.
Loss of Property $
Matl. Damage
Con. Loss
Bldg. Structures
Bldg. Fixtures
Bldg. Contents
Non - structural
Standing Charges
Net Profit
Death Injury
Intangible Loss $
e.g. skill investmt.
Direct $ Loss
Hosptl. Medical
Ins. Premiums
Rehabilitation
Lost wages
salaries etc.
Con. Loss
Non-$
"Mental Scars"
Disfigurement
Job Opportunities
Loss of loved ones
Marriage Prospects
etc.
Intangible Social
Loss
Social Decay
"Law & Order"

who have not kept their insurance up to date in line with inflation. A hybrid form of insurance would be one for large industrial plants including government owned electric power stations which may be self-insured up to an agreed value per event say $1 million or $5 million per electricity generating unit. A loss exceeding this 'deductible' would then involve the insurer.

Whatever the status of insurances the losses incurred to the insurance industry can be expressed by the 'claims' or 'loss' ratio -

$$\text{Claims ratio} = \frac{\text{Premiums earned}}{\text{Claims plus expenses}} \times 100$$

where the expenses include fire brigade charges, commission, margins for unexpected contingencies and, of course, a provision for profit.

Breaking down the readily measurable monetary loss for properties still further we find that this can be defined for pure material damage and the consequential loss.

Monetary Material Damage Loss - With due diligence this loss can be readily measured and includes basically, but is not limited to,loss of building property and non-building property.

Building property in turn includes building structures, building fixtures and contents.

The types of buildings generally affected by fire are those listed in the Australian Model Unifrom Building Code and the resulting State Government Uniform Building Regulations by their building classification numbers, for example -

Class	I:	Single dwelling houses
Class	II:	Buildings containing two or more flats
Class	IV:	Commercial/Professional office building
Class	VII:	Bulk storage warehouses
Class	VIII:	Factories
Class	IX	Buildings of public nature etc.

Building fixtures would include equipment not forming part of the permanent structure but necessary to make this structure habitable and useful including equipment for -

Heating
Cooling
Ventilation
Plumbing
Power supply distribution
Joinery etc.

Under 'contents' one understands the myriad of personal property belongings of the owner, lessee or tenant of a building which is far too multitudinous to be described in detail here. One only has to think of our furniture at home, in the office, in schools, universities, hotels, hospitals and other buildings of human habitation, the raw materials, work in progress and finished goods in factories, workshops and on farms and the many gadgets which characterise daily life in the technological age.

Items of particular value to individuals, which can either not be valued in monetary terms at all or only under great difficulties, are items of personal value to occupants such as diaries and photos of loved ones and of course items to which an art value or historical value should be attached. Whilst objets d'art and items of historical value can be valued by officially approved valuers, such valuations nevertheless are based on subjective views, and in any case the art or historical value of an item destroyed by fire can never ever be replaced again.

Buildings and Contents of Historical/Art Value - Whilst the contemporary view in the Australian insurance industry is that buildings and contents of historical and/or art value cannot be replaced, experience overseas has shown that such buildings and contents with due precautions can be replaced faithfully even after total destruction. This pre-supposes that faithful and detailed records of such buildings and contents have been kept in safe places by such means as micro-filming, drawings, specifications, assessments and estimates by architects and curators experienced in the valuation of art treasures and historical buildings. Generally speaking, equal or better replacement materials are available today for reconstruction.

To illustrate, in West Germany today the famous cathedrals of Cologne and Passau have been fully reconstructed and/or restored after World War II and are insured for their *full* replacement value. Artists are available today to recreate the precious murals in these cathedrals, schools of carvers exist which can re-create the precious altars contained in these cathedrals and which are worth many millions of dollars today, and the selection of materials for these tasks is already pre-planned by state government archives, museums and similar institutions. Thus it will be found that the insurance value of, say, Cologne Cathedral approaches DM 1 Billion.

Nevertheless the historic value attached to such structures can of course not be recreated, and points the intangible and immeasurable loss to society and the dilemma of its assessment.

Property Outside Buildings - Monetary loss resulting from arson can be incurred by property outside buildings which is far too multitudinous to mention in all detail here. Suffice to stimulate the readers

imagination by reminding him that such property might include:

crops, fences, forest, bush, grasslands, mineral and agricultural stock piles in the open, open cut and underground mines, vessels, aircraft,mobile equipment spanning from the bicycle to the million dollar 300 tonne tip truck, special equipment including drilling rigs, overland conveyors, bucket wheel reclaimers and stackers for the mining industry, electrical transmission lines, natural gas/oil pipeline, railway lines and equipment, bridges and road tunnels, civil engineering works including dams, etc.

Consequential Loss to Owner or User - Having broadly indicated the type of readily measurable monetary loss resulting from meterial damage caused by fire including arson, it is now proper to consider the consequential loss to owners or users. Such consequential loss can be measured by the standing charges a business must continue to pay, plus increased cost of working while the premises damaged are being restored or re-built, and the net profit loss in the period from the occurrence of the fire until the original turnover has been re-achieved. In fact turnover is one of the measures used for the consequential loss.

It is often not realised that, once a business has burnt out, many standing charges continue to accrue. These include items such as:

key salaries, office wages, warehousing wages, rent, rates,land taxes, agents salaries, travelling expenses,auditors fees, motor expenses, advertising, insurance premiums, superannuation, bank charges, interest, postage, telephone, office sundries, lighting, heating and water, trade sundries, repairs and renewals, directors salaries, directors fees, depreciation.

It should be remembered that this type of consequential loss accrues whether the business or person is insured or not insured, or a private individual or a corporation. The consequential losses illustrated above occur through:

- Loss through continuation of standing charges which cannot be met out of the reduced income earned after the fire.
- Loss of net profit through reduction in production or sales.

Such consequential loss at times may be as large or even larger than the loss due to material damage, and in certain instances can be a multiple of the material damage loss.

Consequential loss which cannot readily be measured in monetary terms and therefore cannot be insured may include:

under-insurance against material damage, difference in value of stock at time of fire and at the time of subsequent replacement, depreciation of undamaged stock after fire, cost of preparation of fire and consequential loss claims, litigation costs, third party claims, failure to recover book debts owing to destruction of records, loss of goodwill, etc.

It will be readily appreciated that the subject of the assessment of consequential loss is very complex, and unless owners or users are fully and properly advised in these matters and covered, some inherent consequential loss resulting from the preceding material damage loss is likely to occur in most cases.

Miscellaneous Consequential Loss to Third Parties and the Community - Here we strike the first major difficulty in assessing in monetary terms intangible losses from arson fires accruing to third parties and the community as a whole.

In general such losses would include real material losses not capable of being readily assessable, including, but not limited to, losses to government at the three levels in discontinued taxes, excise, levies, charges, etc.

It is a matter of grave concern that the outlays for social services appear to escalate exponentially at an almost uncontrolled rate, and it is common knowledge that the new Commonwealth Government is struggling in order to rein-in expenditure on the 'social net', the safety net which is supposed to catch a member or section of the community beset by unforseen loss of one kind or another. Outlays for this social net would certainly be increased after fire in general and arson in particular, through support by the community of individuals, families and dependents through social services including:

'unemployment benefits, pensions for widows and dependent children, invalid pensions, other pensions, cost for rehabilitation,'etc.

Yet other intangible losses might include items such as interest from lost government investments, loss of income returned into circulation, and government and private ex gratia compensation (for example NSW Criminal Compensation Scheme, maximum amount payable $10,000 in each individual case).

We must not forget the lost investment, qualifications, skill, expertise, experience and the additional expenditure on migration, training and retraining to cover lost ground. Also under this heading come such immeasurable losses such as soil erosion after bushfire which may go into the millions of tonnes as experienced right now in vast areas of the Australian countryside. Losses of this kind will sooner or later have to be compensated for in order to sustain a growing population.

Finally there are numerous losses to the Australian community in the form of charges for government services including sections of government departments dealing with fire and arson, for example, police, fire brigade, CIB, forensic laboratories, government analysts, ambulance, courts, corners, prosecutors, barristers, solicitors, emergencies services, gaols, counter disaster organisation and the like.

LOSS OF LIFE AND INJURY

Having broadly outlined the losses resulting from damage to/or loss of property in consequence of arson it is now proposed to list the losses resulting from death or injury in consequence of arson. Here again distinction can be made between losses directly measurable in monetary terms and intangible losses which cannot be so evaluated.

Direct Losses Measurable in Monetary Terms - In our major hospitals in major cities we have a number of burns units. These cater for the treatment of the unfortunate victims from fire and it is common knowledge that serious burns injuries apart from scarring the victim physically and mentally for life, require disproportionate hospital and medical expenses. Losses resulting from the loss of life or injury would then include hospitalisation in burns units, medical expenses, rehabilitation, funeral expenses in case of death, insurance compensation which reflects itself in higher insurance premiums etc. Such losses would of course also include immediate lost wages to the wage earner and/or dependents.

Intangible Monetary Losses - There may also be certain intangible monetary losses resulting from loss of life or injury. A wage or salary earner killed or injured as a result of fire may not realise his/her professional or artistic development during the span of the life concerned. Such person may either be killed or permanently handicapped and it would be impossible to forecast the heights of professional or artistic development such person might have achieved had fire not intervened. Such a person might have become an artist or inventor bestowing great blessings on the community which are now lost (on the other hand the person may have become a tyrant and the community has gained from the incident).

Consequence of a Mental/Psychological Kind - Hitherto I have mainly dealt with the social consequences of arson which can to a great or lesser extent be measured in monetary terms. It will be readily appreciated that most of the monetary losses quoted above can be replaced by extra expenditure, additional resources and greater effort by individuals and the community to overcome the loss of the property damaged or destroyed.

Unhappily this is of course not so in the case of the mental or psychological consequences resulting from fire and here we enter entirely uncharted depths of the problem of social consequences resulting from arson.

It will probably depend on the psychological constitution of an individual, his/her standing in society and the circumstances accompanying a fire as to how such individuals will react purely to the loss of property. A person may experience total loss of property from fire and be scarred mentally for a short period only or for the whole of his/her lifespan. In many cases given the opportunity to rebuild and reconstruct may be a challenge which may soon smooth over mental scars resulting from the fire. On the other hand, once burn

injuries or loss of life have occurred permanent mental scars are practically unavoidable.

There may be a myriad of causes for mental scarring and these may include the mere loss of a home in bushfire caused by a pyromaniac, the realisation of impending death by burning or violent injury, long term suffering in hospital, permanent disfigurement with a possibility of having to remain secluded from society and the mental anguish at the loss of a loved one in fire or the permanent disfiguration of a husband, a wife or a child.

Other social consequences of arson may be the loss of job opportunities or job security and retardation in personal development. All of these in one form or another are accompanied either by the loss of the chance to marry or lead a relatively normal personal and family life.

Reverting to serious burns, it must be remembered that scar tissue loses its elasticity and will not grow. Hence the frightening disfigurement of burns victims even after repeated skin transplants. Worst affected in this category would be small children in the growing stage, who, over the span of their physical growth will require numerous repeated skin transplants so that the skin covering the organ affected by third degree burns may grow with the patient.

Religious, ethnic and cultural backgrounds unhappily may contribute to the permanent scarring of such a poor victim of fire. It may not always be remembered that in some ethnic groups daughters are married away by their parents into a family of their choice without the girl having a great say in the matter. Cases are not unknown in this country where small girls seriously burnt from scalding or fire were virtually left by their parents to fend for themselves in the streets because the prospect of marrying away-for-profit the female off-spring had withered away with the incident.

Who really can put a price tag on such consequence from fire or arson? All the money in the world cannot eliminate the mental scars of such poor unfortunate girls exposed to the extremes of society's cruelty! Consequences of this kind cannot be measured and surely are the worst consequences of fire and arson.

There are other mental consequences resulting from physical loss which readers may not necessarily be aware of. When in 1975 the Derwent River bridge in Hobart Tasmania collapsed as a result of the impact by a sea-going vessel, a vital communications link between the city of Hobart and its northern suburbs was destroyed. During the ensuing years of reconstruction residents of the northern suburbs working in the city had to spend several hours each day on additional travel either by ferry or by taking a long detour across an upstream bridge. Sociological studies have since discovered that the number of marriages ending in divorce rose dramatically in the years between the destruction of the old and the opening of the new Derwent River Bridge. Who is to say that similar social consequences will not occur resulting from the burning of 2,400 homes lost in the bushfires in Victoria and South

Australia in February, 1983? Sociologists could perhaps tell us in 10 years time. The social consequences from fire and arson spread indeed far and wide.

Breakdown in Social Values and Behaviour - There are other social consequences of arson worthy of closer examination. There is the arsonist who 'got away with it' and will repeat arson again and again. There is the general lowering of public morale resulting from what appears to be increasing crime including arson and seemingly absent action on the part of the authorities to curb such crime. There are the 'torches' and organised crime entering the field of arson for profit. Who would believe that in the USA there are companies specialising in arson equipped with their own jet aircraft and police officers, fire fighters, insurance underwriters, claims staff and fire investigators on their payroll? Yet there are such companies!

When considering the breakdown in social values and behaviour the question surely is justified if, and what kind of, reporting of arson is likely to lead to auto-suggestion. Time and again one reads of court cases dealing with crime which was committed as a result of physical violence depicted on television programmes. It seems that reporting of crimes could breed further crime among the weaker members of the community and the question of auto-suggestion and responsible reporting of arson ought to be high on the agenda in future arson research in Australia.

One could be forgiven for assuming that society seems to have accepted certain forms of crime. The death penalty has generally been abolished, sentences have become more lenient, gaols have become too small, and at times it might appear that the public is not interested in the mental and physical effort required to minimise the social consequences of crime through meaningful education, maintenance of 'law and order' incluiding the expenditure for the additional services necessary. Unless this trend is reversed the outcome for the Australian community may prove to be horrendous.

CONCLUSION - RECOMMENDATIONS

Presented by a layman in the field of sociology this paper tried to lay down a 'specification' of the social consequences of arson. It by no means represents a study of these consequences. Rather, it is intended to provide a background for a suggested overall in-depth study of social consequences of arson in Australia, a study which should include the measurable and intangible monetary costs. Most importantly, however, such a study should illuminate in detail the effect of arson and pyromania on individuals and the community and the interaction of crime, punishment and its reporting. Perhaps the Australian Institute of Criminology may see fit to take the initiative in such a study, which should be programmed so as to be on-going, thus providing the community with trends in arson in years to come I commend this initiative to the Institute.

IT CAN'T HAPPEN TO ME: ARSON AND RISK MANAGEMENT

R. Houghton

Risk Management is a term which may not be familiar to all of you. It has become a somewhat fashionable buzzword in business management today yet it is simply another management tool - one each of you probably utilises in your daily work and private activities. Generally speaking, the risk manager aims to apply a logical decision-making process to the risks identified in order to increase the profits and/or operating efficiency of an organisation. He (or she) systematically anticipates those events which could produce loss, and adopts a course of action to prevent that event, or if that is not possible, to reduce the impact of loss. As with all management, it requires common sense to balance the actual costs of loss against the costs of achieving security against that loss.

The backbone of this discipline is a five-step[1] process:

1. identifying an organisation's exposures to accidental loss;

2. analysing, by measurement and evaluation, the extent of the risk;

3. developing alternative techniques to treat each exposure and choosing the most appropriate;

4. implementing the best technique or combination of techniques for treating each exposure;

5. monitoring the results produced by these techniques in order to control and co-ordinate the organisation's entire risk management effort.

In short, risk management has one basic goal - to protect assets and profits by reducing the potential for loss before it occurs. It is often equated, or confused, with insurance. Risk management did have its origins in the insurance field - the reason for this was not necessarily logical or philosophical, but simply that purchase of insurance was generally the most common, if not the only, treatment of risks. Today loss prevention and loss control are considered at least

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1. The number of steps is not particularly important - specialists in risk management and other fields detail the process in different numbers of steps - it is essential only that *some* logical procedure is adopted.

as important. As the frequency and severity of risks escalate, it can often be very difficult to buy insurance to adequately cover the loss exposures. The costs of premiums could be unacceptable to the insured. In addition, it can be impossible to arrange cover at all on some high risk operations. Because of these changes in the traditional insurance market, many organisations have looked to ways of dealing internally with the risks they face. This trend has spawned the business discipline of risk management.

Although basically simple, the process should really be viewed as an applied science - computers are increasingly being utilised to statistically analyse loss data and develop forecasting techniques. As an independent science, it has been recognised for only 20-30 years throughout the world, and for only about 10 years here in Australia. The individual elements however have a far longer history - I refer specifically to loss control, safety management, insurance, etc. The significant distinction is that all elements are now considered together in the complete management of risk.

Arson is a steadily increasing phenomenon, and risk managers, insurers and crime control agencies are necessarily devoting more attention than ever before to its control. There has been the temptation in the past to adopt a 'head in the sand' posture, which is usually expressed in one of two ways: either 'If they are out to get me, they'll get me'; or 'It won't happen to me'. Yet the rational manager realises that to ignore a potential problem does not make it any less likely to happen. The masses of data available indicate that arson is a big problem right around the world, and it would be a short-sighted and foolish manager who would say definitively, 'It can't happen to me.' In simple risk management terms, the threat of arson must be handled the same as any other risk - it must be identified, analysed, evaluated, and either transferred or accepted, and the results monitored.

The first step in the risk management process is *risk identification* or *risk discovery*. It is necessary to explore the degree of exposure to arson and a checklist of what to look for is a good starting point. Such a checklist would incorporate the following to be examined:

- all past fires, particularly those with unexplained causes;
- actual cases of arson;
- where the premises are located
  - isolated or populated area
  - reported cases of arson or unexplained fire losses in the vicinity;
- occupancy patterns of premises
  - 24 hour or seasonal operation
  - public access

. peculiarities of premises

- security/protective measures (internally and externally)
- special fire protection measures
- structural condition
- employee's attitude to security/loss control.

The second step is risk analysis - *measurement* and *evaluation*. The results of the survey conducted using the above checklist should indicate the extent of the loss exposure. The risk manager should now examine both probability and impact, or in other words, frequency and severity. In general, study of frequency, severity and predictability of possible losses provides a basis for establishing risk management priorities and a beginning point for deciding which risk management techniques are appropriate for each exposure, which in this case is threat of arson.

The difficulty (and success) of this task depends largely on the expertise, experience and resources of the risk manager, and the size, scope and complexity of the organisation. There are, however, many avenues of assistance in this regard: risk management/loss control consultants, underwriters, insurance brokers, fire protection agencies, various government departments and others.

An important point to consider in the analysis of this risk is: what is the arsonist's motive? Any treatment must be preceded by a knowledge of why arson happens at all, and why it is so prevalent. Psychiatrists, criminologists and also insurers have been examining for many years what motivates the arsonist. And it is probably the insurers who have the most immediate concern, for it is they who often bear the brunt of the costs. And yet many arsonists do not believe that what they are doing is so wrong. 'John', a professional 'torch', had this to say:

> '.... but most would think of me as just a bloke doing a favour that is going to help them out a real lot. I am not a crim like the blokes who work for the car rings or do jobs for the big boys around the Cross. Jesus, the insurance companies rip everyone off - insurance is just legalised gambling with the house covering the odds so heavily, they are the real crims. No one thinks getting something back from an insurance company is a crime.'[2]

2. Royal, W. 'The Man of the Match'. Australian Penthouse, April 1983.

There are four generally accepted principal motives for arson:

1. behaviourial disturbances
2. criminal reasons
3. political reasons
4. business rivalry.

It is useful to look at each of these areas individually.

. behavioural disturbances

- hatred/revenge (for example former employee)
- pyromania
- jealousy (sabotage)
- boredom
- individual revolt

. criminal based

- organised crime ring (fraud)
- insurance deception
- blackmail
- cover-up other crimes (burglary,employee dishonesty)

. politically motivated

- industrial disputes
- terrorist activities
- to 'celebrate' national days or historic anniversaries
- intimidation
- to manipulate public opinion

. business reasons

- elimination of competition
- jealousy.

The next step involves the *development* and *choice* of methods to prevent arson, or at least, reduce its effects. The questions asked in the initial survey will indicate where the gaps are, and what corrections to existing practices should be made. This step in the risk management decision process requires imaginative consideration of a wide range of possible alternatives. Such decisions can be assisted by utilising capital budgeting and decision theory guidelines by which top management of many organzations reach other business decisions. Making risk management decisions with the same decision tools used to make production, marketing, and other business decisions helps demonstrate that risk management is - instead of a completely different field - only a specialised branch of general management where

'revenues' are such things as accidents prevented or insurance premiums saved, and where 'expenses' are typified by the costs of safety measures or non-productive downtime following an accident.

Listed below are some of the steps that could be taken to deter the arsonist:

. organisationally

- control entry points
- provide staff passes
- control visitors and their movements
- guard the premises (especially when closed)
- carefully allocate and account for keys
- illuminate the premises at night
- lock away securely all valuables
- put away any items that might assist the arsonist
- never ignore crank calls or threats

. structurally

- ensure door, windows, walls, etc. are secure
- install burglar alarms/fire alarms
- connect alarms to security centre and/or police/fire brigade centres
- connect emergency power supply
- install automatic fire extinguishing systems

. good housekeeping

- ban smoking, where appropriate
- store properly and orderly all stocks, but particularly dangerous materials
- remove and destroy refuse regularly
- ensure stairs and passageways are kept clear
- maintain and overhaul equipment, as necessary
- trim grass and shrubbery to eliminate hiding places and fuel sources
- install good lighting

. inspections

- investigate all malfunctions
- ensure that 'good housekeeping' is maintained (by regular and sometimes unexpected visits)
- ensure noted deficiencies are righted immediately
- accompany all visitors to sensitive areas
- check for signs of interference
- ensure any back-up devices are operational

. recruitment

- pre-employment checks on mental stability including, if appropriate, to determine a psychological pre-disposition to pyromania
- understand levels of intelligence, knowledge and other factors necessary for *safe* performance, and ensure that only applicants who meet these minimum standards are employed

. supervision and training

- employ experienced and well-trained supervisors
- ensure personnel are capable of implementing the resources available
- re-train periodically, update on new techniques
- control and monitor contract guards, if used
- observe new employees for indication of mental deficiencies and take appropriate action
- observe behaviour of employees under stress

. purchase of insurance

- consider in conjunction with above loss control techniques
- retain as much of each claim as the organisation can afford

Many of these factors are extremely subjective and thus must be evaluated and utilised with caution and discretion.

The risk manager must always strive to optimise loss control effectiveness within the constraints of his budget and available resources and make decisions about the comparative cost-benefits of different techniques. He must not consider each loss exposure in isolation - the treatments for many overlap, and this should be taken into account in the cost analysis.

The fourth step is *implementation* - probably the most difficult and the most important. It is extremely unlikely that identification procedures will reveal that there is *no* exposure. Without implementation, the surveys, the analyses, the theory are largely a waste of time. This step probably absorbs the bulk of the effort of most risk management specialists.

The programme must necessarily evolve over time at the fastest practical rate. When any changes are to be implemented, risk management is no different from any other management strategy: it is essential to use a carefully-planned and well - communicated step-by-step approach. This minimises the inevitable resistance to change; it permits systematic problem-solving; and it builds an awareness of the multiple benefits of the process. Lastly, it provides an in-depth understanding of the programme, all of which encourages a commitment from each employee, which is vital.

Some potential conflicts can occur between the risk manager and managers of other departments within the organisation. In dealing with these conflicts the risk manager must work co-operatively with all members of the organisation to reach its common goals. A risk manager cannot operate effectively in a vacuum, and is vicariously dependant on the co-operation and commitment of his colleagues for his own success.

Post-treatment risk evaluation is the final step in the risk management process - *monitoring the results* of the techniques implemented. It is important to remember that the measures taken to prevent and reduce arson are generally similar to those used to protect against other risks - in particular, burglary, fire and espionage; and reduction in these losses should be considered in the cost justification completed prior to implementation. The risk manager should also have ready at all times a continually updated contingency plan in the event of fire; whether it was induced by an arsonist or other means is not particularly important.

Having implemented the various 'treatments', the 'treated risk' must be compared to the risk profile of the 'untreated risk' that the original analysis divulged. Checking the results provides the necessary control for determining whether the original choice of techniques was correct or even, if originally correct, whether conditions have changed, so that a change in techniques is called for. To keep the risk at an acceptable level, risk factors must continue to be monitored. The risk manager must be alert to warning signs, and must attempt to keep up-to-date with new methods of treatment.

The steps in the risk management process, as outlined,are in reality connected to one another, as if in a self-perpetuating circle: one automatically leads to the next, and the last should lead to the first, to begin again the process.

Negligent arson, which differs only in that the extent of the damage was not intended, should also be considered. However, this loss is difficult to protect against, because those who accidentally cause fire damage by careless handling of flames or dumping of live cigarette butts, do not necessarily fall into any of the categories discussed earlier under 'Motive'. The action taken, however, to guard against wilful arson will also assist in the prevention of negligent arson.

Risk managers of large entities today have tremendous responsibilities. Together with the 'old' risks that have always been around: fire, arson, burglary, theft, flood damage, motor vehicle damage, employee accidents, machinery breakdown - the list is practically endless - the modern risk manager has to anticipate the consequences of extortion, terrorism, computer crime, political risks, product contamination, pollution, and an increasing liability exposure.

Today, risk management is more important than ever when controlling costs is a significant key, to not only profit, but survival. It is unfortunate however, that when times are tough some short-sighted managers attempt to prune the risk management programme - the result of which could be devastating.

The emphasis within this paper has been on the role of the risk manager within an organisation (or other professional assigned this responsibility)in the prevention/reduction of arson. However, the insurer's role, I believe, is equally important in achieving this goal. The insurer must insist upon more complete underwriting even where it threatens premium income and cash flow. As it is in the insurer's interests as much as the risk manager's, the two would be well advised to consult with each other, discuss the problem as it relates to specific circumstances, and draw up and implement an appropriate game plan.

It is no longer possible to gamble on the chance that an organisation will be spared the ravages of arson. It can, and if not guarded against, will probably happen to any organisation. If management fails to initiate and maintain such a programme, the results could be costly in terms of dollars and cents, but even more so in terms of human lives.

Oscar Wilde could very well have been speaking of arson and inadequate foreplanning when he said - 'Misfortunes one can endure, they come from outside; they are accidents. But to suffer from one's own fault - ah! - there is the sting.'

THE BURNING QUESTION - WILL THE INSURER PAY

P.F. Coldbeck

INTRODUCTION

The arson with which this paper is concerned is the 'fire for profit' arson. That is a fire deliberately set with the aim of receiving payment from the insurance company. The fire for profit arsonist has two aims. Firstly to avoid conviction at worst, and preferably to avoid detection or prosecution. Secondly to have his claim paid.

Until comparatively recently, the attitude which the insurance industry generally appeared to have taken towards this type of arson was that if the prosecuting authorities did not believe that there was sufficient evidence to justify a prosecution, or if after a criminal trial the insured was found not guilty, then the insurer had no option but to pay the claim. Where insurers did decide to initially reject a claim, short term economic considerations seemed to dominate so that in many of those cases ultimately the insurer agreed to a settlement. As a matter of economics it was sounder to agree to pay $50,000.00 than to fight and run the risk of losing $100,000.00.

It is not surprising therefore that the incidence of this type of arson has substantially increased.

THE DIMENSIONS OF THE PROBLEM

As this conference has already been informed there are no reliable Australian statistics available to indicate the growth in arson generally, and this type of arson in particular. However, there appears to be no doubt in the minds of those concerned, whether police, fire fighting authorities or insurers, that there has been a huge increase in the incidence of this type of arson.

A great deal of work on arson has been done in the United States of America. A United States Senate Permanent Sub-Committee conducted detailed investigations in 1978 and 1979 and its efforts are recorded in three volumes which have been published. In one of those volumes the Sub-Committee reported that, in 1977, 240,000 arson fires occurred throughout the States at an approxiamte cost of $1.6 billion. It was estimated that the incidence of all types of arson had increased by 70 per cent from 1970 to 1977 (*Arson in America:* Report of the Committee on Governmental Affairs, United States Senate, made by its Permanent Sub-Committee on Investigations, 96th Congress, first session 1979).

The American *National Fire Protection Association* in its Fire Journal of July, 1980 reported that nationally the estimated number of incendiary or suspicious fires had escalated from 5,600 in 1951 to 177,000 in 1978.

A further report of the *National Fire Protection Association* stated that the 1979 dollar loss for 'fire for profit' arson was 24.5 per cent higher than that in 1978. (*'Insurance Facts'* 42-27 (1980-81) published by the Insurance Information Institute).

It is not suggested that American experience has been mirrored in Australia. There may be reasons for thinking that there are factors in America, such as organised crime, which do not operate in Australia, or operate to a lesser extent. However, that there has been an alarming increase in fire for profit in Australia cannot be denied, and perhaps the American experience gives some indication of what may have happened in Australia

Must the insurer pay? - The proposition this paper seeks to demonstrate is that the fact the insured is not convicted of arson does not mean that the insurer cannot successfully resist payment of the claim. For the purposes of this paper it is to be assumed that the insured was responsible for setting the fire and has either not been prosecuted or if prosecuted found not guilty.

The development of this proposition involves an appreciation of the difference between the relevant rules of the Criminal Law and the Civil Law and also of the rights which insurers have both under the Common Law and pursuant to the terms of their Policies.

As the paper is to be presented to an audience largely of non-lawyers, an attempt has been made to state the relevant rules of law as simply as possible. Some of the statements of law might reasonably be regarded as over-simplified (and like most good rules there is always the exception to prove the rule). Nevertheless, the statements of law are put forward as being accurate.

The criminal onus of proof - In a criminal case the prosecution has the onus of proving the accused guilty beyond reasonable doubt. The accused does not have to prove anything. He does not have to give evidence or have other evidence called on his behalf. If he raises a reasonable doubt or if the prosecution fails to prove his guilt beyond reasonable doubt then the verdict must be not guilty.

Unless the police are able to obtain a confession or there are eye witnesses, then the police case against the arsonist is based on circumstantial evidence. In the very nature of this crime it is rare for the police to have eye witness evidence available. That makes the prosecution's task all the more difficult, and if there is a gap in the circumstances upon which the prosecution relies which in turn gives rise to a reasonable doubt then that leads to the verdict of not guilty.

The civil onus of proof - In a civil case however the party seeking to prove his case has to do so only on the balance of probabilities, that is that it is more likely than not. That is the standard of proof which an insurer has to satisfy in defending an action on the policy on the ground that the insured set the fire.

The High Court of Australia has said 'No matter how grave the fact which is to be found in a civil case, the mind only has to be reasonably satisfied and has not ... to attain that degree of certainty which is indispensable in the support of a conviction upon a criminal charge'. (*Rejfek* v *McElroy* (1964-65) 112 CLR 517 at 521-2). Of course in an action where an allegation of fraud is hotly contested the court will be more cautious about coming to a conclusion, even on the balance of probabilities, than may be the case where the fact in question is less contentious or of less significance.

Because of the difference in the standard of proof required in criminal and civil matters, the same evidence given against the insured on a prosecution may be insufficient to justify a conviction, and yet in the civil action be sufficient to satisfy the court, on the balance of probabilities, that the insured was responsible for setting the fire. The insured may have been found not guilty, but in spite of that, the insurer may not have to pay.

The insured's obligations under the policy - At the outset, when a person is proposing a risk to an insurer, he is under a duty to make a full and frank disclosure of all material facts. This duty is not necessarily confined to providing accurate answers to questions on the proposal form. Questions relating to the accurate description of the risk, the insured's previous insurance record (claims made, claims rejected, insurances cancelled or declined) and directed to deteriming how the amount of the sum insured has been fixed are regularly asked. But the insured has a positive obligation to disclose all relevant information, not merely truthfully answer the questions asked. If it was the fact that the insured had comparatively recent convictions for arson, even though it is unlikely the proposal for a fire policy would ask that as a specific question, those convictions are material facts which the insured is obliged to disclose.

Of course not all facts set out in a proposal are material. For instance, the colour which a house was painted is unlikely to ever be a material fact. On the other hand, the question as to whether the house was weather-board or brick would almost certainly always be material as would be the fact that a previous insurer had successfully denied a claim. The state of mind of the insured at the time a proposal is being completed is not relevant. If the fact in question is material and the statement made in the proposal is incorrect then the insurer does not have to pay.

After the fire the insurer has the opportunity of checking not only the accuracy of the declarations made in the proposal, but also whether other material facts have been concealed, and if it transpires that there has been a material mis-statement or non-disclosure in the proposal the insurer does not have to pay.

In the course of a criminal investigation the insured, if suspect, is not obliged to answer any questions which the police may put to him. His position, however, if he is making a claim under his policy is quite different.

Most fire policies contain a claims procedure condition which is expressed in similar terms to the following:

> 'On the happening of any destruction or damage the insured shall forthwith give notice thereof in writing to the Company and shall within thirty days after such destruction or damage, or such further time as the Company may in writing allow, at his own expense deliver to the Company a claim in writing containing as particular an account as may be reasonably practicable of the several articles or portions of property destroyed or damaged and of the amount of destruction or damage thereto respectively having regard to their value at the time of the destruction or damage together with details of any other insurances on any property hereby insured. The Insured shall also give to the Company all such proofs and information with respect to the claim as may be reasonably required together with (if demanded) a statutory declaration of the truth of the claim and of any matters connected therewith. No claim under the Policy shall be payable unless the terms of this condition have been complied with.'

The insured, if he wants to pursue his claim cannot elect to remain silent. He cannot decline to supply relevant information, even on the ground of self incrimination, if he wishes to pursue his claim. Not only does the insured have to answer questions and provide information, he has to do so honestly. Most fire policies also contain a condition which is expressed in similar terms to the following:

> 'If any claim be in any respect fraudulent or if any fraudulent means or devices be used by the Insured or anyone acting on his behalf to obtain any benefit under this Policy or if any destruction or damage be occasioned by the wilful act or with the connivance of the Insured, all benefit under this policy shall be forfeited'.

Even if such a condition is not expressed in an insurance policy it is clear as a matter of insurance law that the insurer is entitled to avoid paying the claim if the insured makes any false statement in pursuing the claim with the intention to deceive the insurer. (see *Britton* v *Royal Insurance Co.* (1886) 4 F. & F. 905).

In contrast with the materially false statement or non-disclosure in the proposals, the insurer, in seeking to avoid payment on the ground that a false statement has been made in pursuing the claim, also has the onus of proving that the false statement was made with an intention to deceive. Whilst not under-rating the difficulties that this may cause, it should be borne in mind that the onus has to be discharged on the balance of probabilities and after the insured has been required to submit all relevant information.

And it is an onus to be discharged in court after the insured has given evidence and been cross-examined. Whilst a court might hesitate to infer an intention to deceive on the bases of one proved false statement, if there were a number of them, and if the court was not impressed with the insured's attempts to explain them, it would be open to the court to conclude that the statements were made with an intention to deceive. A single false statement may be of such significance that the court could come to the conclusion, on the balance of probabilities, that it must have been made with the intention to deceive. Why else would the insured claim to have lost a valuable painting in the fire when it could be proved that he had sold it at auction three months beforehand?

In the investigation of suspicious arson claims it is often easier to discover the fraudulent or untrue statement made in pursuring the claim or in the proposal than it is to implicate the insured in the cause of the fire. And it must always be remembered that if the insured is suing for indemnity he has to establish his entitlement on the balance of probabilities. In deciding whether he has discharged that onus of proof the insured's credit as a witness has to be taken into account. The matters which the insurer raises in its defence may so substantially discredit the insured that the court concludes that he has not discharged his onus of proof. But whatever the reason the result is the same, the insurer does not have to pay.

An example - The propositions which have so far been made in this paper may be more clearly illustrated by an example of an insured actually successfully avoiding conviction but not receiving payment of his claim. The relevant facts were as follows:

(i) The insured property consisted of some five or six acres upon which were erected an old house and a number of old out-buildings. They were located in a medium sized Victorian country town and the land was used for growing vegetables. The house was severely damaged by a fire on the 3rd May, 1979.

(ii) The insured was a prominent local citizen a Justice of the Peace and president of the local football club. He was well known and highly regarded.

(iii) Approximately six months prior to the fire the local health inspector recommended to the local council that the building be demolished as unfit for human habitation. The insured was aware of that recommendation. The recommendation that the house be demolished could not be put into effect until it had been ratified by the Victorian Housing Commission. The health inspector had submitted a report to the Housing Commission and the Housing Commission had made contact with the

(iii) (Contd)

insured in an attempt to make arrangements for an officer of the Commission to conduct his own inspection. By various means the insured had succeeded in delaying the conduct of that inspection.

(iv) Some two months prior to the fire the insured submitted a new proposal to his insurance company increasing the sum insured from $15,000.00 to $25,000.00. At that time he made no disclosure of the threat of demolition which then existed and his proposal included a declaration that he and his family were the occupants of the building. Because of the almost certainty of a demolition order being made the value of the building was probably nil.

(v) At the time of the fire the property was occupied by 'Mr Torch' and his wife and three children. Mr and Mrs Torch had been engaged by the insured to assist in harvesting the crop.

(vi) The police case was that 'Mr Burn', who was a friend of Mr Torch, was approached by the insured with a proposition that Mr Burn should arrange to have the dwelling burnt for which he was prepared to pay. During the discussion, according to the police case, the insured suggested to Mr Burn that an old kerosene heater which was located in one of the sheds should be brought into the house as that would give the fire brigade an explanation for the cause of the proposed fire.

(vii) On the night of the fire Mr Torch and Mr Burn drove to a town some 20 to 30 miles away where they filled the car with petrol at a self-service station. They apparently did so on the basis that the town was larger and they were not known there and in the hope that they would not be noticed. Unfortunately they over-filled the tank which caused a minor panic at the service station. The incident highlighted their presence at the service station and the fact that the car had been over-filled with petrol.

(viii) They returned to the property and petrol was syphoned from the tank of the car into a container. Mr Burn departed. On entering the house Mr Torch woke his wife and children and told them to get out of bed. He then proceeded to splash petrol around not knowing that the kerosene heater had been lit. There was an explosion and a fire erupted. Mr Torch and his three children were burned. His wife escaped unharmed. It was very close to homicide.

(ix) On the morning following the fire the local police attended and observing the kerosene heater came to the conclusion that it had been the cause of the fire and that there therefore no suspicious circumstances.

(x) The insured notified the insurance company on the morning after the fire. An insurance adjuster attended the scene later that day. In the course of a preliminary discussion with the insured the adjuster was told that the insured had been told by the captain of the local fire brigade that the kerosene heater was the cause of the fire. The insured indicated to the adjuster that he was concerned to have the place cleaned up as soon as possible and sought permission for that to be done. The adjuster told the insured that that was a matter for the insurance company which would not be able to make up its mind until after his enquiries had been completed.

(xi) Whilst he was in the town the adjuster spoke to the fire brigade captain who informed him that he had not had any discussion with the insured about the circumstances of the fire and had not expressed any opinion to him about the cause of the fire.

(xii) The fire occurred in the early hours of a Thursday morning. The insured however arranged a working bee involving members of the local football club and the property was cleaned up the following weekend. Thereafter forensic tests to establish the presence of petrol would have been pointless.

(xiii) Approximately 10 days after the fire the insurer received an anonymous telephone call from a person who said that he had information which would save the insurance company $25,000.00, and which he was prepared to convey upon payment of $5,000.00. The anonymous caller was Mr Burn. The police were notified and, to shorten what is a long story, ultimately both Mr Torch and Mr Burn were interviewed by the police and full statements were made by each of them. The insured was also interviewed by the police but he declined to make any statement or admission.

At the conclusion of the police enquiries Mr Burn and Mr Torch were both charged with arson and the insured was charged with being an accessory before and after the fact of arson and the three of them were charged with attempting to defraud the insurance company. They were all committed for trial.

(xiv) At the commencement of the trial application was made on behalf of Mr Burn to have his statement to the police excluded from evidence on the ground that it had been improperly extracted. After a two day hearing the trial judge ruled that it would be unfair for the statement to be admitted in evidence. The Crown decided to lead no further evidence and Mr Burn was discharged.

(xv) The trial of Mr Torch and the insured proceeded over a number of days. At the end of the Crown case a submission was made on behalf of the insured that he had no case to answer on the ground that the statements made by Mr Torch to the police implicating the insured in the fire were not admissable as evidence against the insured as Mr Torch and the insured were co-conspirators. The trial judge ruled, as a matter of law, that the insured had no case to answer and he was discharged. For reasons which are not material for the present purposes Mr Torch was ultimately found not guilty. The only point of relevance in relation to his trial was that he did not go in the witness box

(xv) (contd)

and give evidence on oath denying the truth of the statements which he had made to the police including those implicating the insured.

After a comparatively short interval the insured then started to press for payment under his policy. His solicitors threatened to sue the insurance company but in fact that has not happened. There are no doubt a number of reasons why this has not happened but the major ones would appear to be the following.

Firstly, if he did sue the insurance company the insured would have to give evidence. On being cross examined on behalf of the insurer with a view to establishing his involvement in the fire he would expose himself to the risk of being charged with perjury. Secondly, the episode appeared to have had a very salutary effect on Mr Torch who was remorseful and appreciated the almost fatal danger to which he had exposed his family. There was good reason for believing, if he was subpoenaed by the insurance company to give evidence, he would confirm the statements which he had made to the police including those implicating the insured in the fire. Thirdly, there were the problems which confronted the insured by reason of his failure to disclose to the insurer at the time he was increasing the sum insured the threat of the demolition order.

Insurers can help themselves - The basic rights which an insurer has under the policy and at common law seem to have been forgotten.

The claims procedure condition offers the insurer fertile ground, which in the past has been poorly cultivated. What is the sort of information with respect to the claim which may reasonably be required? Those matters canvass the personal and background information in relation to the insured and the insured property, the insured's whereabouts and actions at the time of the fire, who had access to the building and matters relating to the cause of the fire. The insurer ought to be able to obtain full information about when the property was acquired, at what price, how much was owing on the property, the insured's general financial position, and other personal matters such as marriage break-up or illness which might subject the insured to heightened financial pressures. The insurer should obtain details of the insured's previous insurance claims experience which encompasses the nature of any claims which my have been made and questions as to whether previous claims were rejected or whether other insurers had cancelled or declined to renew insurances.

Detailed information of the insured's whereabouts and actions at the time of the fire should also be obtained. Questions as to whether any contents had been removed or added shortly prior to the fire are also relevant as are questions directed to establishing who had access to the building. Generally, the insured is not present at the time of the outbreak of the fire and often will assert that he alone had

keys to the building and that the building was securely locked when he last left. Finally the insured's views as to the cause of the fire ought to be obtained and, where the fire has an incendiary origin, as is more often than not the case, the amount and type of flammable liquids stored in the building.

If the insured has been responsible for setting the fire, then it is likely that he will be prepared to make untrue statements in pursuing his claim.

Having required the insured to provide all relevant information, the insurer is in a position then to verify its accuracy. If in the course of doing so it becomes clear that there has been a fraudulent statement made then the whole of the claim is forfeited. If an insured claimed that a valuable piece of jewellery was lost in the fire and the insurer could prove that was not the case, then the insurer is entitled to reject the whole of the claim, and not simply the claim for the item of jewellery. (See, for instance, *Lek* v *Matthews* (1927) 29 Ll.L. Rep. 141).

Today it is not appropriate for an insurer to proceed on the basis that, if the police get an arson conviction, the claim will not be paid, otherwise it will. Whilst it is not suggested that insurance investigations should interfere with police enquiries, the former attitude that the insurer should await the outcome of police enquiries before making its own investigations also is not appropriate.

The insurer can, if the insured wishes to pursue his claim, require the insured to provide information. The courts have recognised the insurer's interest in requiring the prompt supply of information in order to verify allegations,and to pursue other lines of enquiry which may enable the insurer to minimise its loss. Whilst the amount of detail which an insured is obliged to supply in order to comply with the condition will vary according to the circumstances, the insured must supply sufficient detail to make it reasonably practicable for the insurer to ascertain the character and the extent of the loss claimed and to check possible exaggeration or deliberate falsity. (See *l'Union Fire & Accident Insurance Co. Ltd.* v *Klinker Knitting Mills Pty. Ltd.* (1938) 59 C.L.R. 709).

It is not suggested that an insured who fails by a day or two to meet a deadline to provide a claim form, or who inadvertently omits a detail or two is not entitled to indemnity. However an insured who deliberately refuses to provide the information to which the insurer is reasonably entitled within a reasonable time exposes himself to a substantial risk that the insurer will be able to successfully resist the claim on that account.

CONCLUSIONS

A better awareness of the rights which insurers have ought to lead to an improvement in the manner in which fire claims are investigated. In turn, that should increase the chances of arson fraud being discovered and proved. If police officers understand the rights which insurers have they may seek assistance from the insurance investigators in connection with their own enquiries. Apart from any possible increase in the chances of improving the arson conviction rate, the police may have drawn to their attention circumstances which would lead them to investigate possible 'false pretences' offences, or, if the insurer had required a statutory declaration, perjury.

The manner in which insurers have, at least until recently, investigated and settled fire claims has left a lot to be desired. In practical terms the collection of the necessary evidence to enable an insurer to successfully fight a claim is no easy task. The difficulties insurers face are substantial, and even a strong suspicion on reasonable grounds does not satisfy the test that it is more likely than not that the insured was responsible for the fire. The cause of the insurance industry in defending suspicious fire claims will not be advanced unless the insurer's case is properly prepared and presented. It is one thing for the insurer to be suspicious, but quite another to prove those suspicions even on the balance of probabilities. Again, for many reasons it is submitted that there has not been in the past a close enough liaison between police and fire fighting authorities on the one hand and insurance assessors and investigators and insurance companies on the other. As a result all have suffered. Those matters of themselves could well be a topic for another paper or other papers. They are acknowledged as matters of great significance to which the Australian insurance industry should be addressing itself. For the legal rights which have been discussed in this paper do not count for anything unless they are properly exercised.

At the outset it was stated that the arsonist with which this paper was concerned had two aims. It has been assumed that the first of those aims, to avoid conviction, has been achieved. If insurers mindful of their rights, having collected the necessary information and being properly prepared, determine to fight and not to settle, then the second of those aims, to obtain payment, will not be achieved. And if the word gets around that insurers are fighting, and winning, then is it unreasonable to submit that this will, in itself, ultimately have a deterring effect?

THE ROLE OF AN INDEPENDENT INVESTIGATOR IN ARSON ENQUIRIES ARSON - A GROWTH INDUSTRY

J. Thomas

A document distributed at the inaugural seminar of the New South Wales Standing Committee on Arson, about mid 1982, was titled 'The Arson War'. The title appears to reflect the opinions of those persons with a knowledge of the subject, that not only has the crime of arson already reached alarming proportions in this country, but also that it is a growth industry.

It is understandable that, with the rapid increase in suspicious and proven arson fires in recent years, there is a lack of reliable State or national statistics upon the subject. We are forced to look at overseas trends to see what the future holds for Australia. Typical of the forecasts from overseas is the advice received some months ago from Robert E. May, Executive Secretary of the American-based International Association of Arson Investigators, that Australia appears to be experiencing similar problems to those encountered in the United States some seven years ago.

Having identified the problems associated with arson in this country, the obvious question is, 'What are we doing about it?' At State level various programmes are already underway, although such measures are still in their infancy. The arsonist has no regard for State boundaries and so it is encouraging to see the problem now being discussed at a national level. Perhaps the consensus of opinion resulting from this conference will enable closer co-operation of all interested parties to disprove the pessimistic forecasts both from home and abroad.

For my own part, I welcome the opportunity of discussing the role of an independent fire investigator in arson enquiries. I am hopeful of demonstrating that not only do the duties of such investigators serve to reduce the high incidence of fraud upon insurers, but also that they take no small part in the suppression of the crime of arson.

THE PROBLEM IN NEW SOUTH WALES

Many of us have had little involvement with the problem of arson outside of our own particular State. My experience has mainly been confined to the State of New South Wales, and much of what I have to say will obviously relate to that State. You will no doubt find some comparison to the circumstances prevailing in other States.

About 18 months ago the New South Wales authorities took positive steps to meet the problem of arson in establishing the C.I.B. Arson Squad. The concern at official levels was confirmed some months later in the appointment of a Standing Committee on Arson.

One of the most common motives for arson is of course an attempt by an insured person to benefit from a fraudulent insurance claim. The flood of suspicious fire claims in recent years has brought about a noticeable change of attitudes by insurance underwriters. No longer can a suspected arsonist expect to have his insurance claim settled, merely because the available evidence falls short of a criminal charge. Where fraud/arson is suspected, an independent fire investigator is now frequently appointed as a matter of policy.

POLICE AND THE INDEPENDENT FIRE INVESTIGATOR

In dealing with suspicious fires, there are some common misunderstandings as to where an investigating police officer's duties cease, and the area of an insurance investigator's activities. You may find some interest in comparing the distinct separate functions of each.

On the one hand, a police officer's duties are confined to the 'preservation of law and order and to the protection of life and property'. He is unable to involve himself in matters of a purely civil nature, or to allow the criminal law to be used towards civil ends.

On the other hand, the normal duties of an independent insurance investigator are purely of a civil nature, in the gathering of evidence to enable an insurer to make a commercial decision. His duties encompass a host of activities in which an investigating police officer would not normally involve himself. Such matters as the prior claims history of the insured, the moral hazard aspect, non disclosure in the proposal, and misrepresentation in the claim, may become most important to an insurer in considering the question of liability, but are often of little value in considering whether or not a criminal offence has been committed.

The criminal offence of arson is one of the most difficult charges to prove and it is a credit to the professionalism of the New South Wales Police Department, and in particular to the C.I.B. Arson Squad, that the clean up rate is so high in that State. However, whilst police enquiries frequently establish that arson is involved, the strict standards of proof required under the criminal code (beyond a reasonable doubt) will often preclude the arrest of even the strongest suspect. Under such circumstances a police officer would probably be unable to take the matter further.

A belief in some quarters that if the evidence falls short of a police charge then a civil denial of liability is unlikely to succeed is frequently unfounded. Whilst the available evidence may not meet the high standards of proof required under the criminal law, it may nevertheless satisfy the lesser standards of proof of the civil law, to provide an insurer with potential grounds for a denial of liability. This is the main arena of the independent fire investigator's activities.

By way of demonstrating the point, I refer to the recent decision of *Rogers, J.* in the matter of *Borgiani* v *Farmers & Graziers Limited.*

There is not sufficient time here to discuss that case in detail. It may be sufficient to say that the matter was thoroughly investigated by a competent police officer but the evidence fell short of a criminal charge against the insured. It is therefore of interest to note the concluding remarks of *Rogers, J.* in that judgement

> 'I am satisfied to the appropriate degree and extent that the fire was, in terms of the relevant clause of the policy, set by means or devices used by the insured or by Miss Wilson (his girlfriend) on his behalf, and that the conceded deliberate attempt to destroy the premises was carried out by the plaintiff or by his associate'.

Notwithstanding the strong remarks of Mr Justice Rogers in that civil judgement, I remain satisfied that the available evidence would not have measured up to the standards of proof required under the criminal law.

I believe the lessons to be learned from such decisions are not only that some measure of justice can be achieved by an insurer taking a firm stand with disputed fire claims, but also that such decisions serve as a major deterrent to other would-be fraud/arsonists.

Some of the obvious benefits resulting from insurers taking a firm stand with suspicious fire claims are:

1. Such action is in keeping with official endeavours to suppress the crime of arson.
2. The interests of legitimate policy holders are protected in keeping premiums to a minimum.
3. The deterrent effect such action has upon others.

In considering the deterrent effect, we have probably all seen the phenomenon of a series of similar suspicious or proven arson fires erupt in a particular suburb; or an outbreak of fires amongst a particular ethnic or other group of persons. I recall that over a short period, about six or seven months ago, a series of fires erupted in six separate business houses in the main street of one Sydney suburb. The last four of those fires were closely examined by insurance investigators, resulting in the denial of liability in respect to three of those claims. We are left to speculate as to whether or not such a stand on the part of the relevant insurers has since acted as a deterrent, but you may find it significant that there have been no further similar suspicious fires in that area.

THE FIRE SCENE

The examination of a fire scene is one of the most important aspects of an insurance investigator's duties. It is unfortunate that all too often the investigator receives his instructions long after the date of fire, when the insurance underwriter can only treat the matter as a problem claim. Under those circumstances the scene has frequently been disturbed resulting in the loss of valuable evidence.

In this regard it is encouraging to see that one national insurer,Q.B.E. Insurance Limited, having researched the subject, have formulated a firm policy of appointing both the loss adjuster and the investigator from 'day one', subject of course to the existence of certain criteria. I am satisfied that results will speak for themselves in due course. One might anticipate that the fraud/arsonist will soon give that insurer a wide berth, leading to more stable premium rates for legitimate policy holders.

Each fire scene, and the circumstances surrounding same, varies considerably from fire to fire. It is thus impossible to generalise in respect to all that is required in the investigation of suspicious claims. There are however various common denominators which are worthy of discussion.

The scene will undoubtedly have been examined by the investigating police The evidence resulting therefrom is intended for presentation at a criminal trial, or at a coronial inquiry, and is not available for private purposes. It is therefore of the utmost importance for an insurance investigator to conduct his own examination of the scene. As a matter of practice, an experienced fire investigator approaches each fire scene as a potential arson.

It is of importance to realise that if police enquiries do not result in arson being firmly established they would probably be unable to take the matter further. In the case of an insurance investigator, however, if arson is not proved, or even where arson is completely eliminated, there may nevertheless be other evidence available which could vitally affect an insurance claim. Such matters as the storage of excessive or illegal quantities of dangerous or highly inflammable substances on the premises, gross negligence on the part of the insured, or a substantial alteration in the usage of the premises, may have placed the insurer at much greater risk than was ever intended. An insurance investigator would endeavour to identify the extent of stock or other contents remaining at the scene, to determine if there is evidence of any fraudulent misrepresentation in any subsequent claim.

The examination of the fire scene, where the building or other property has been completely demolished, can create serious difficulties for an investigator. Such problems are not always insurmountable and it may for instance be beneficial to engage the services of an expert in a particular field or profession. By way of example, the services of an analyst are now frequently used to prove that the quantity of stock claimed to have been destroyed in the fire was grossly inconsistent

with the evidence found in the debris at the scene.

In many instances the arsonist's intention to completely destroy the building or other property is thwarted by the early arrival and expertise of the fire brigade. A wealth of evidence is often available at such fire scenes. It is important however to recognise that the fire officers may have altered the scene in some manner whilst carrying out their fire fighting duties.

Some of the matters a fire investigator would have regard to, in examining the scene, are as follows:

1. The time of discovery, and by whom. Witnesses may be in a position to advise on such matters as the precise location where the fire commenced, or whether or not an explosion preceded the fire. An eye witness may be in a position to state whether or not any person was seen to leave the scene.

2. Whether or not there are signs of forcible entry to the premises other than those occasioned by the fire officers. If a burglar alarm system was installed it would be important to determine if same was properly set at the time of the fire and if it was in fact activated prior to the fire.

3. Establish the location of the main seat of fire. Two or more separate and unassociated seats of fire would probably preclude any suggestion of an accidental cause. In establishing the location of the main seat of fire, an investigator looks for the common fan shaped pattern where the fire has burnt upwards and outwards. There may also be evidence of spalling of any adjacent brickwork, concrete, or cement rendering. The depth of charring will normally diminish outwards from the seat of fire.

   If other seats of fire are evident, it becomes necessary to determine if they are secondary to the main fire, or completely separate and un-associated. Secondary fires are frequently caused by burning timbers or other materials falling from roof level to the floor.

   Where an accelerant has been used it is not uncommon to find distinct fire trials throughout the building. In such cases the point of ignition is not necessarily the location of the greatest fire damage. Odours of petroleum-based accelerents or chemicals may also tell their own story.

(3) (contd)

Having located the seat of the fire, an investigator endeavours to determine if there are any electrical fittings or other potentially dangerous equipment in the vicinity which could be attributed to an accidental cause. Examination of the debris may also provide evidence of a timing device, or the remains of unusual quantities of inflammable material.

(4) Where an attempted fraud is suspected, the quantity of stock or other contents remaining at the scene is all important. When the contents have been totally demolished the insured may be called upon to indicate the location and description of same. If doubt remains as to quantum it may be necessary to methodically sieve all debris to recover non-flammable hardware such as nuts, bolts, screws etc.

(5) When seeking documentary proof of the loss from the insured it is sometimes claimed that all records were destroyed in the fire. In examining the scene the investigator would note if such documents remained intact and arrange for their safe keeping.

(6) Enquiries from neighbours may not only establish the time of the discovery and the circumstances surrounding the fire, but may also indicate if property was removed from the premises prior to the fire.

(7) Having completed an examination of the scene, photographs are normally taken of the general area and of any particular evidence at the scene. It may also be useful to prepare a rough sketch plan.

EVIDENCE AND 'PRIVILEGE'

The taking of statements and the gathering of other evidence can be a most exacting, time consuming, and sometimes frustrating experience. Witnesses are frequently inexperienced in such matters and may arrive at conclusions which are not supported by the facts. Patient questioning of a witness will normally overcome such problems and establish a factual account of the incident.

Statements, documents, and other evidence, must be obtained and preserved in a manner suitable for legal requirements, having in mind that such evidence may be subjected to the closest scrutiny at any future litigation or coronial inquiry.

Witnesses should be interviewed at the earliest opportunity whilst the incident is still fresh in their minds. At the outset of enquiries something said or seen by a witness may not seem important, and may only become significant as the enquiry progresses. An experience investigator will record all such information in the statement of the

witness. He will later be faced with the task of sifting through all of the available evidence to present same in an orderly fashion in his formal report to the insurer or their legal advisers.

A perennial problem for an insurance investigator is the retention of 'privilege' over his reports and the other documents raised in the course of his enquiries. Decisions in recent years have altered the law in this regard. As I understand the present position from a lay viewpoint, the only means of safeguarding the privilege of such documents is for the investigator to receive his instructions directly from the insurer's legal advisers before commencing his investigation.

Insurers do not always follow such procedures, and all too frequently the privilege claimed upon such documents is lost. Perhaps insurers should look more closely at that problem.

THE PROPOSAL

At the time of receiving his instructions the investigator would normally request that he be provided with copies of all relevant documents including the proposal. The depth of his enquiry places him in a good position to determine if irregularities are evident.

A policy of insurance is of course one of the utmost good faith and the insured has a well defined duty to disclose all material facts at the time of the proposal.

A problem frequently encountered in this regard is that, where an investigator uncovers evidence of a history of prior fire claims with other insurers, which have not been disclosed, he is often unable to confirm such claims from the relevant insurers. It appears to be the practice of insurers only to retain such records for a very limited period.

When an investigator's enquiries produce evidence of a serious non-disclosure he merely raises such facts in his formal report for the consideration of the insurers' legal advisers

THE CLAIM

When an investigator is appointed there is often no further action taken by the insurer or appointed loss adjuster pending the outcome of his enquiries. Problems sometimes arise when an insurer does not insist upon the insured complying with the policy conditions in submitting a formal claim within the specified period.

The investigation may, for instance, produce evidence of a potential criminal fraud by the insured. The investigating police would probably be unable to prove such a criminal charge if a formal claim has not been lodged with the insurer.

FRAUD

Motivation to commit arson usually falls into such categories as revenge, vandalism, pyromania, an attempt by a criminal offender to destroy evidence, industrial sabotage, and fraud. The insurance investigator is basically interested in the fraud situation.

It is easy to lay the blame on somebody else's doorstep when things are not going right. From time to time we hear complaints that the investigating police have failed to prefer criminal charges of fraud when same becomes evident in the claim.

The true position is that the police attend a fire scene, firstly to determine if arson is involved, and secondly to identify the culprit, whoever he may be, and whatever the motive. They would normally have no knowledge of an attempted fraud unless a specific complaint was made.

The insurance investigator has the benefit of closely examining the claim and other documents, and is in the best position to determine if there is evidence of an attempted fraud. Again, such evidence may not measure up to a criminal offence, but may nevertheless indicate that the insured is in breach of the general policy conditions, in making such wilful misrepresentations in support of his claim.

In dealing with a suspected fraud/arson situation, the motive is not always readily identifiable. It is true that enquiries often indicate that an insured was in such desperate financial circumstances as to provide a potential motive for a fraudulent claim. Where such evidence is not available, one must consider such motives as greed, an intention by the claimant to re-develop the site from the proceeds of a fraudulent insurance claim, to destroy evidence of an internal criminal offence such as embezzlement, or merely to obtain 'new for old' under the reinstatement conditions of the policy.

In considering whether or not there is a potential fraud/arson involved, the investigator endeavours also to answer such questions as:

1. Has arson been firmly established?
2. Have the insurances recently been placed or increased?
3. Is there any prior history of fire, or other potential fraud claims by the insured, his relatives, or close friends?
4. Were contents removed prior to the fire, or is there an absence of contents that are usual to such a situation?
5. Are the contents unusable, obsolete, or unsaleable?
6. Was the fire discovered shortly after the departure of the occupant?
7. Is there evidence of disputes among business partners, or spouses?

8. Has there been any alteration to the zoning of the land, or is there any application to re-develop the site?
9. Is there any action pending by the local council such as a 'Closing Order'?
10. Had the realty been offered for sale recent to the fire?
11. Is there co-insurance?
12. Does the insured have a history of dishonesty?

The list is by no means comprehensive, and perhaps merely demonstrates that if fraud/arson is involved there is obviously a motive.

CORONIAL INQUIRY

When an insurer, or other interested party requests a coronial inquiry the investigating police will brief the police sergeant assisting the coroner as to the available evidence. It is at this point of time that discussions and co-operation between the investigating police and the insurance investigator will lead to the coroner becoming aware of all the relevant facts at the hearing.

The evidence resulting from the attendance of the fire brigade at the scene, and subsequent police enquiries, may firmly establish that arson was involved. The type of enquiries conducted by insurance investigators may produce additional evidence of an attempted fraud.

It is not unusual for the insurance investigator to request a coronial inquiry on beyalf of an insurer. He is occasionally 'left with egg on his face' when, at the last minute, the insurer negotiates a settlement of the claim and no longer requires a coronial inquiry. Under such circumstances the investigating police have usually spent time and effort in obtaining statements, and preparing the matter generally for the court, only to find they are no longer required.

The coroner may hear evidence to determine the 'cause and origin' of the fire. He will normally not entertain the introduction of evidence which will not assist him in this regard.

The increase in the number of suspicious fires has undoubtedly led to a greater volume of matters being listed for hearing at the coroner's courts. The additional stress placed upon the court system sometimes results in a lengthy delay before a matter can be finalised. In this regard I sense a leaning by the courts to dispense with a coronial inquiry into a fire when it becomes evident that the coroner could only arrive at an open verdict.

CONCLUSION

By way of conclusion I refer to an address given by Detective Sergeant Mick O'Brien of the C.I.B. Arson Squad, Sydney, wherein he adopted the theme that arson could be likened to a cancerous growth in the community. He might forgive me if I take the liberty of carrying the analogy a little further.

Having diagnosed the problems associated with arson, it is evident that a major operation is called for. The seriousness of the ailment requires consultation, co-operation, and teamwork among the specialists.

It is true that during the past few months, the problem in New South Wales has abated to some extent. Whilst I would like to think there has been some miraculous cure, it is more likely that the patient is merely undergoing a short period of remission and will suffer a relapse in due course.

Perhaps if we heed the advice of those specialists who are not disposed to conservative treatment, then the prognosis will be good.

'WHAT OF 1993?'

R.G. Bennett

In some areas what I say may be critical but it is meant to provoke sincere and honest evaluation of today and where we aim to be in the next 10 years.

I speak in broad reference from information given to me by my members and from around Australia, added to which I refer to experience gained in my own State.

To speak at a convention such as this is certainly a challenge and I regard the experience as an honour in the view of the very high levels of expertise, not only of the speakers but also the many who attend.

With such a list of technical experts covering the very wide range of arson detection and inter-related concerns, there was really little left for the loss adjuster to speak on in reference to the general concern of arson. Let me assure you however that we are concerned. We also have pride in what we do and do not enjoy seeing our clients ripped off.

From the outset, it was clear that I had been left the one subject that means so much to me - a sincere concern for those who are to follow and who represent the life blood and continuity of the loss adjusting profession. In general terms, this theme, which is my major concern, can indeed be related to all of the professions represented at this convention.

Recognising arson, determining the cause of it and the reasons for it, apprehending the culprits, the prosecution of those responsible, and continuation from case to case, has been the lot of many separate professionals in the past, who must be regarded as the pioneers in the Australian field of arson investigation.

Certainly, in 1973, there was a growing concern of the increasing incidence of profit-motivated arson. Yet, should we not ask ourselves just what has in fact been done in the past 10 years to 1983 to professionally educate and pass on to trainees - the young men and women who follow us - the pioneering experience gained by those who may in 1983 have run their race. Here I refer to education on a national level and to incorporate uniform standards.

One of our major concerns from the very first thought of assembling at this convention should be to seriously answer the question ... 'What of 1993?' This question is not asked in terms of the significance of present statistical data on how many arson related losses are occurring or in terms of the total average cost per unit loss.

Rather, the question is raised in the following terms - will the trainees of 1983 be further advanced in the future in their knowledge and be

equipped with more sophisticated training aids, and will they have acquired a greater stock of arson recognition methods than those they succeed?

If we and those who sponsor this convention are truly concerned at the horrifying statistics of arson related losses, then it is our duty - no, it is our obligation - to leave no stone unturned in ensuring that in 1993, the trainess of today will not reflect on this convention as just one of resuscitation - just so much mouth to mouth.

There are many problems to be faced if the arson issue is to be seriously challenged from a federal level - in fact, I am not convinced that State agencies, such as the police and fire departments, have considered a uniform approach towards the necessity of teamwork in combating and challenging those responsible for the crime of arson.

I do know that Arson Squads, or whatever other nomenclature is used, experience difficulties in promptly attending to all 'suspect' fires, and this applies particularly to the forensic technicians.

Often, therefore, the front line ends up consisting of fire brigade personnel and loss adjusters or investigators. In the case of the smaller fire, it may well only be the loss adjuster/investigator.

Often, the adjuster is confronted with a 'pushy' insured and an underwriter who, being pressed by the broker, wants to avoid compounding an act of arson but also wants to show that his company is prepared to abide by the principle of good faith.

Additionally, the underwriter and adjuster is aware of daily charges and consequential losses which continue, despite cessation of trading, and which cost may well be the basis of a claim at some later date.

State agencies such as police and fire services see their role in a different light. I have heard of some police officers stating that their duty is to apprehend a person who has broken the law, so why should they concern themselves with crime prevention. This may be digressing, however the point is made in respect of attitudes. I am however convinced that this would be the exception rather than the rule but it nevertheless still exists.

Also, arson enquiries often take second place to more serious crimes and in fact arson enquiries are often dropped while other investigations are carried out on a priority basis. Clearly, this would or should not be the case if a specialist arson team was formed solely for the investigation of fire cases.

One has only to look at the number of police personnel allocated in some States to arson investigation to appreciate that this type of investigation rates well down the ladder of priorities within the hierarchy of some police departments.

I believe the fire service personnel often regard their duty as simply one of extinguishing the fire - that is, of course, in broad terms, and is always subject to the saving of life and protection of property. I have no objection to the latter, however it is obvious that the fire officer must be highly trained to assist in the proper investigation of fire causes. Rightly, personnel of both services are very much concerned as to their lack of indemnity in the event of any arson-related information given out by them which may backfire at a later time. The Steering Committee will obviously refer to this aspect of concern.

Through the Insurance Council computer service - insurance register of losses - the loss adjuster can report insurance losses of $2,000.00 and over as well as others which may bear recording, this is effective on an Australia-wide basis. As far as input and output are concerned this service is only used by loss adjusters. It is necessary not to implicate the underwriter as far as the insurance register of losses is concerned so as not to influence an acceptance of a proposal or premium rating. Clearly, the loss adjuster can draw information from the computer on a claimant's previous losses which have so far been recorded, and he is therefore privy to a bank of information which may well be of value to a government agency such as the police department or that department's arson team, if there is one.

In respect of this computer service, it should be emphasised that this is not a witch-hunt but enables information to be obtained promptly, it is factual and in any case should be declared by the claimant in the normal course of enquiry. What do we draw from these comments?

What we see are groups of people who are working in part for a common cause, yet whose efforts are fragmented and duplicated to such an extent that they often impede the progress of each other's work. This only serves to destroy expertise, breed frustration and discontent and plays directly into the hands of the arsonist. I see nothing wrong with proper enquiry into fire losses as in many cases this supports the genuine claimant.

Arson, we know, does not always implicate the property owner or the beneficiary of a contract of insurance, there are many motives for deliberately causing a fire and these will be covered by other speakers.

I know of no previous effort to even consider the question of arson on an Australia-wide basis and believe that what has been done during the days of this convention represents an immense forward step in combating arson of the future and very importantly makes us look at ourselves, our own performances and those of our allies in this fight against the crime of arson.

From the loss adjuster's viewpoint there is no examination on even the basic knowledge of fire causes and arson recognition. Expertise of loss adjusters in fire causation and arson recognition comes from experience learnt the hard way, or from being employed by someone who specialises in that field. Clearly, serious thought should be given

to a segment within the fire examination studies undertaken by trainee adjusters, covering this field.

It must be patently clear that no one person or department can successfully tackle the arson problem. I suggest that this concern should and must be approached by a team of people who, by expertise and attitude, can thrust forward as pioneers of the team approach.

The frequency of suspected arson for profit in New South Wales and Victoria is understandably higher than it is say in Western Australia or Tasmania, but the problem of the single offence is no less serious than the larger problem of arson frequency. The experience gained by arson teams in those States where this offence is most prevalent should and must be available to those who are trainees in the respective fields of loss adjusting, loss investigating, and among fire department senior personnel, police officers and forensic professionals. The present State to State situation does not present the complete answer.

The withholding of information and experience, because of the fear that one may lose a client, is short-sighted and selfish and does nothing to combat the continuation and spread of arson as a crime, and when exploited as a measure of profit, it is a cost to which the insuring public must ultimately subscribe.

I hope it will be understood from what I have said that in the main I see the question of arson as a crime only being successfully dealt with by a team approach. This must be commenced and initiated from a basis of mutual trust and with a common objective of challenging the arsonist through expertise and a wider knowledge of recognition and detection methods. It should also involve immediate benefit to trainees in whichever professional field they may be engaged, so as to ensure that in 10 years time they will have more experience than some of us have accumulated in 20 years and more. It should also involve the setting up of a focal point, to which examples of experiences can be directed in order that the arsonist's activities can immediately be recognised by all State teams. In this respect we should seriously consider the need of a national fire academy. I recognise that what I suggest must be taken in small steps as obviously the question of money is involved.

We must however press on and lay the foundation for the future in whatever way we can and not become detached from the foundation laid in these last few days simply because immediately our aims and ideals may not be accepted or agreed to by the Federal Government or State Governments.

There is no reason why consideration should not be given immediately to the educational aspect of this paper and at the same time State agencies give thought to standardisation of laws and procedures and to the acceptability of the team process as seemingly operates with success in the United States.

I will be immediately suggesting to the Chief Examiner of the Institute of Loss Adjusters of Australia and to the Chartered Loss Adjusters of

Australia that immediate consideration be given to incorporating into future examinations a segment on arson recognition. I believe that this is a step in the right direction if we are to be serious in our concern as to the crime of arson and arson related losses.

It is common knowledge that the wheel of arson for profit will revolve at far less speed if the opportunity for profit is eliminated or reduced and we remove the motivation to commit the crime.

In their investigations the police must of course always consider that prosecution of arson offenders requires evidence establishing proof beyond reasonable doubt, whereas in proceedings of a civil nature,the standard of proof is one related to the balance of probabilities. The difference between the two standards of proof is quite considerable.

There have been instances in which police charges have either not eventuated or have been unsuccessful yet civil proceedings initiated by an insured have failed, and where, on the balance of probabilities, the case for the insurer has been upheld. One may ask where does the loss adjuster fit into the picture in preference to police and fire officers - I say never in preference.

Where the police cannot succeed because of their high standard of proof, that is beyond reasonable doubt, and if in fact the evidence suggests that on the balance of probability there is a case of arson which may affect a contract of insurance then evidence obtainable from State agencies should be available to hearings on a civil level.

Many fires are not reported to the police and it is here that the loss adjuster/investigator represents the front line of the fire cause investigation. I know and it is agreed that in remote areas and in smaller States the front line is often inadequate to the task and this must be remedied for the future.

We have heard of requests by government agencies to withhold payment of insurance proceeds but how can this be done if it takes weeks for the adjuster to obtain information on which such action can be taken.

It certainly appears as if the State of Victoria is showing the way as far as information from the Police Arson Squad is concerned and I applaud their understanding of the industry plight and hope that other States will follow. I am however mindful of the manpower problem but in so doing seek a better deal and understanding of the loss adjuster/ investigator's position.

Much has been said of the team of police and fire service but I believe that the third arm should be officially recognised and that is the role of the professional loss adjuster/investigator officially appointed by an insurance office.

Members of my Institute have Institute identification cards and agencies in the various States should not hesitate to ask for these and if

necessary a letter of appointment from the insurance office or underwriter involved in order that there is no doubt as to where the loss adjuster stands, that is acting for an insurer, underwriter or privately.

Turning now to the future on education which has been a field through which almost every speaker has ploughed a furrow of concern, I see the need for a professional approach by a full-time expert in fire cause investigation who makes it his or her business to ensure that States initiate programmes to ensure that trainees - my concern in this regard is for the adjuster - have the opportunity to learn what he or she is not learning at the present time. I see the opportunity in the form of practical on-site instruction, use of video and visual aids and as least as possible written material except for library retention purposes. Much has been said of the U.S.A. experience in this question of arson and I do not doubt for one moment that even they would agree that they have not been without their failures. They have enjoyed many successes and drawing from their experience and successes must place us in a position of absolute advantage compared to a situation where that information would not be available and us having to start from square one.

The International Association of Arson Investigators is well-known to us all. Of the 47 members in Australia as at 1 May 1982, 43 per cent were from Victoria, 7 per cent New South Wales, 6 per cent South Australia and Western Australia, and sliding then to 4 per cent and 2 per cent for the balance of States. Thirteen loss adjuster/investigators operated from Victoria, four each from New South Wales, Western Australia and South Australia, and two from Queensland.

Clearly, there is an honest desire to learn and serious attempts have been made by people involved in fire cause investigation to self-educate themselves in this area and attempting to do so by obtaining membership to an organisation which boasts some 6,000 members in the 41 State, Regional and County Chapters of the U.S.A., 11 Canadian districts and 24 other countries.

We in Australia do have the personnel who will support the fight against the crime of arson and I hope the fight against apathy, selfishness, parochialism and the Jack System.

As regards the future, I put to you the question and suggestion - unless a real and concerted effort is made on an Australia-wide basis, to pass on experiences gained thus far by people such as yourselves, with the view to assisting all interested parties who encounter the crime of arson from time to time, then not only will your expertise be lost to the future and thereby assist the arsonist, but also the time, effort and expense involved to date in respct of this convention will just be a waste, and in the years to come, we will all bear the brunt of criticism from those who at the present moment are looking on and are hungry for information which will assist them to carry on from what we are doing.

Therefore, I ask you the question in the broad context of this paper: 'And What of 1993?'

THE HISTORY, PRESENT AND FUTURE OF SCIENCE IN FIRE INVESTIGATION

P.J. Thatcher

The scientific examination of fire scenes and items taken from fire scenes can involve many of the various scientific disciplines which together constitute forensic science.

An apparently simple case of arson could involve photography,plaster casting of type tracks and shoe impressions, soil comparisons, blood grouping of blood or other body fluids, flammable liquid analysis, handwriting comparisons and other tests all of which provide proof of a circumstantial nature. However for the purposes of this address discussion will be confined to those sciences which assist in determining the causes of fires.

Until recently the science of fire investigation was neglected or ignored and reflected the general attitude to the problem of arson. This led to arson becoming known as the 'forgotten crime' in forensic circles. Most fire scene examinations were cursory and resulted in fire reports which listed many fire causes as 'natural causes', 'electrical' or 'spontaneous combustion'; all of which had very little scientific justification.

However,the recent increase in scientific knowledge which is applied more and more to our everyday life style has predictably resulted in techniques which allow a far more sophisticated approach to fire investigation both at the fire scene and in the laboratory. Most of these developments are adaptations of methods or techniques used in other scientific disciplines and serve to illustrate that fire investigation, like most other branches of forensic science is an innovative science rather than an inventive science.

This paper discusses briefly the development of scientific techniques, future developments and limitations in scientific method which indicate that science will not be a panacea in the detection of arson.

A scientific assessment of fire causes requires a detailed scene inspection which is usually followed by a specialised laboratory examination of items which it is considered will provide information relating to the fire cause and progress.

Most conclusions regarding the starting point of a fire which are drawn from fire scene inspections are based on traditional observations such as depth or intensity of charring, lowest point of burning, fire damage patterns, etc.

This empirical approach remains the most logical method of fire investigation and while some scientific aids have been developed to assist the fire investigator it is unlikely that any scientific

instrument will ever prove more positive than the correct interpretation of the actual fire behaviour. A few instruments recently developed will be discussed presently. However, while most fire investigators are familiar with this approach, few appreciate the cause of the clue they follow.

Obviously, these indications of fire progress occur as the result of the chemistry and physics of fire. They can be explained by phenomena such as pyrolysis*, evaporation and oxidation, which are the processes necessary for fires to occur, and radiation and convection which allow fires to spread.

It is essential that fire investigators understand these phenomena if they are to interpret fire damage patterns correctly.

Possibly the most misunderstood of all natural phenomena associated with fire is the relationship between temperature and the distance from a body radiating heat, that is, the effect of radiation.

As most fire investigators are aware, the occurrence of more than one seat of fire can strongly suggest arson. However, because secondary fires can also originate from materials burning and falling, and also from radiated heat, it is vital that fire investigators can recognise any signs that confirm or refute these other possible fire causes.

Many incorrect conclusions drawn from preliminary fire scene inspections can be attributed to a poor knowledge of the effects of radiation.

Most scientific attention in the area of fire scene investigation has been concentrated on the development of the 'sniffer', that is, an instrument which can detect the vapours of flammable liquids and flammable liquid residues.

The earliest of these instruments indicated the presence of hydrocarbon vapours by a chemical reaction which caused a colour change in crystals. They consisted of a simple pump and a glass tube filled with crystals and were, in principle, similar to the 'puff bags' often used in the preliminary breath testing of drivers of motor vehicles.

Subsequent developments resulted in more sophisticated instrumentation which based detection on conductivity (or, more accurately, decrease in conductivity) or catalytic oxidation.

Although becoming increasingly sophisticated, all of these 'sniffers' suffered from the same basic inadequacies, which were lack of sensitivity and/or lack of specificity. Laboratory tests showed that these instruments recorded a negative result for the most common 'accelerants' after the most volatile components had been removed, and

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* Chemical decomposition or other chemical change brought about by the action of heat regardless of the temperature involved.

also they required high concentrations of unaffected 'accelerants' before a positive result would be recorded. In fact the threshold levels were often so high that the 'accelerant' could be detected by smell thus rendering the 'sniffer' redundant. Also, many of the pyrolytic breakdown products from the burning of wood and particularly synthetic materials produced positive readings.

Therefore, the dilemma facing the fire investigator using such an instrument was: if the point of origin had been established with confidence and the 'sniffer' did not respond, should a sample be taken anyway? Or conversely, if a positive result was obtained, did this truly indicate the presence of an 'accelerant' or residue? Overall, a most confusing and useless device.

Recently, 'sniffers' with more specific detectors based on the principles of infra-red spectroscopy or gas chromatography have been reported. The infra-red based 'sniffer' has a reported high sensitivity but a questionable specificity, and the portable gas chromatograph has a lower sensitivity but incorporates a chart read-out which can be interpreted and if necessary, retained and produced in court. At this stage the portable gas chromatograph is cumbersome requiring the cartage of gas bottles and is also complicated requiring scientific expertise to operate and interpret. However, it remains, at least in principle, the most reliable 'sniffer' and the most promising concept from a theoretical point of view.

A development based on a completely different principle is the ultra-violet light which detects fluorescent compounds containing benzenoid structures which are present in some fuels, particularly those of petroleum origin. For this method to succeed, the starting point of the fire would have to remain clear of debris after the fire which is unlikely because of the collapse of ceilings, walls and furniture which usually occurs.

It should also be remembered that many fluorescent chemical compounds are formed in flames and, potentially at least, these could give misleading indications as to the presence of petroleum fuels and solvents.

If the starting point of the fire can be determined, a careful inspection will often show how the fire started, and if flammable liquids are involved laboratory tests will often confirm this.

These laboratory tests usually involve two basic processes, namely, the extraction of flammable liquid residues and the subsequent identification of these residues, and are generally carried out on samples of flooring, floor coverings, soil, etc. taken from as close as possible to the estimated starting point of the fire.

There are many different extraction techniques available and the particular technique chosen depends on many considerations such as efficiency, speed and the equipment available.

The oldest and simplest method is steam distillation. This is a relatively unsophisticated technique which requires large sample sizes and a lengthy period of analysis. However it does have the advantage that the volume of liquid recovered can be measured and quoted in court. Because of many factors this figure is meaningless but prosecutors and juries consider it important. A refinement which increased the speed and efficiency of the technique was the use of ethylene glycol instead of water. However, with this modification the ethylene glycol must be cleaned or replaced, thus extending the total time involved or the total cost.

Solvent extraction is a common technique which is cheap and successful. However, it is not a particularly selective technique and recovered samples are often adulterated by hydrocarbons present in the debris but which have not originated from flammable liquids.

Other extraction techniques include gas headspace sampling which is a very insensitive technique, particularly for petroleum residues which have undergone severe evaporative effects, and vacuum distillation which, although rapid, suffers many of the disadvantages of steam distillation and in addition requires the use and storage of large volumes of 'dry ice' or liquid nitrogen.

The development of methods for the identification of petroleum residue extracted from fire debris once again illustrates how forensic science can be categorised into the Applied Sciences.

Prior to 1958 the identification of petroleum-type residues was achieved by determining those properties of the hydrocarbons that were siginificant for, and used by the oil industry, such as flash points, specific gravity, boiling point etc. More recently the introduction of infra-red spectroscopy by which chemical groups can be easily identified has been adopted because a more specific identifiation can be made. The nature of the technique does mean however that the extracted residues have to be extremely 'clean' before analysis: an unlikely situation with many of the extraction techniques previously mentioned.

The introduction of gas-liquid chromatography, whereby microgram quantities of the hydrocarbons in the extracted residue could be separated was of great significance in the positive interpretation of the origin of the residues, especially with regard to the high-boiling-point residues. Gas chromatography was used, and still is, extensively and almost to the exclusion of other methods of identification. One feature that elevated gas chromatography to this elevated position was that many hydrocarbons which were extracted simultaneously with flammable liquid residues were separated during analysis and thus did not confuse any subsequent identification.

Improvements in ancillary gas chromatography equipment such as integrators and the digital log electrometer have been applied with predictable success but the latest and most important development in chromatographic science is the development of capillary columns.

These small bore columns now allow samples to be analysed which are one tenth of those previously required. In fact, sample sizes of 10^{-7} litres can be analysed and identified, but this can cause serious problems in interpretation which will be discussed later.

Recent developments which will most likely become routine in the future include the use of adsorption media such as activated charcoal, and 'Tenax-GC', a porous polymer. Techniques based on the use of these materials will replace the time-consuming and relatively inefficient extraction methods such as steam distillation and vacuum distillation. In fact, the efficiency of the 'hot-wire' method is reported to be 25 times that of steam distillation and in the case of 'Tenax-GC' it is claimed to be up to 500 times more efficient. It is also claimed that these techniques produce a far cleaner extract.

Other studies conducted independently in Linkoping, Sweden and in Melbourne (University of Melbourne and Victorian Police Forensic Science Laboratory) have investigated the chemical compounds associated with soot in an attempt to determine the nature of materials burnt in the early stages of fires. The Swedish research was directed towards the extraction and identification of inorganic chemical compounds derived from the lead and bromine content of petrol while the Melbourne research was more broadly based and examined the presence and amounts of compounds of a particular chemical type which can be formed in flames depending on the chemical structure of the material burnt. (This research was partially supported by a Criminology Research Council Grant).

Both these techniques are particularly sophisticated and require an accurate interpretation of the fire and a careful selection of the soot samples. Such a technique is not intended to supersede all present techniques of fire-scene investigation but rather to be used in large or otherwise difficult fire scenes.

Other valuable research recently completed in Sweden, and soon to be published, concerns the scientific examination of fused electrical wiring. The interpretation of fused electrical wiring remains a concern to fire investigators and the question of whether the fusing caused the fire or vice-versa often remains unanswered. The work just completed suggests that the answer to the problem lies in the oxygen concentration in the outer atomic layers of the wire. This concentration can be measured using Auger spectroscopy, once again a very sophisticated technique.

Research recently completed in Melbourne and which was supported by the Australian Federal Police has been directed towards providing evidence of an incriminating nature.

To do this, 200 samples of petrol and kerosene taken from all over Victoria were studied in an attempt to detect small but significant differences in these fuels. The technique was successful and has already been used in several cases examined at the Victorian Police Forensic Science Laboratory.

All of these developments give an indication of the trends in fire investigation both at the scene and in the laboratory. It is difficult to foresee any real scientific breakthrough although the development of a specific and sensitive 'sniffer' will probably occur eventually.

More likely there will be an increased level of sophistication in present techniques which will require a far higher level of training and scientific expertise.

The results from these improved techniques will also require a more considerate interpretation and in fact there is a danger that some techniques will become so sensitive that the results will become impossible to interpret. This is particularly true in the interpretation of the presence of fractions of a microlitre of flammable liquid recovered from samples of debris.

While this may seem a somewhat pessimistic prediction it should be remembered that most specialised fire laboratories already have a high success level in fire-cause investigation. At the Victorian Police Forensic Science Laboratory the annual success rate of fire causes fluctuates between 80 and 90 per cent while at the Metropolitan Police Laboratories in London a success rate of 95 per cent is claimed.

What this does show is that while established fire investigation laboratories can always benefit from new techniques which improve efficiency, the overall problems in fire investigation would be greatly relieved by a more scientific approach by all bodies interested in fire causes.

FIRE INVESTIGATION AND DATA COLLECTION

GETTING OUR ACT TOGETHER

G.C. Ramsay

The circular inviting you to participate in this conference states that 'one very effective deterrent to crime, is certainty of detection'. In my talk today, I want to put forward two propositions.

The first is that the certainty of detection relies on adequate fire investigation and comprehensive data collection. The second is that those involved need to get their act together and define the roles that each must play.

Underlying my approach to these propositions is my belief that fires deliberately set for profit or gain are only *part* of the national fire problem, and a concerted and consistent overall approach will benefit *all* of those concerned. As in the fable of the blind man examining an elephant and reporting variously that it was like a snake, or a mountain, or a tree stump, we are likely to get a very distorted view by examining each part of the national fire problem independently. This is particularly pertinent to investigation of fires and the collection of data.

The basis for consistency and reliability in investigation and data collection is the Australian Standard 'Collection of Data on Fire Incidents', AS 2577, which was published in February of this year. I think it is worthwhile saying a little about the history of this standard to indicate that a good deal of hard work went into its preparation and that it is in fact based on a considerable legacy of experience.

When the SAA committee first met in February 1977, it took as a premise the best available system used in Australia at the time and that was the N.S.W. Fire Brigade's report form. This was modified by the usual SAA committee processes and a draft for public review was published in 1978. This brought so much adverse publicity that it looked as if the project would lapse. There seemed to be general consensus on the type of information which might be collected but everybody disagreed when it came to devising a report form. Then someone applied lateral thinking. 'Let us not have a form, at least not a form as an obligatory part of the standard'. Thus the form in the standard was called a 'model form'. 'Let us circumvent individual brigade allegiances by adopting someone else's form as the model report form. Let us minimise the disputes as to what information should be included on the form by selecting a set of commonly agreed upon data elements and let individual brigades collect their local needs on the back of the form or another sheet of paper'.

Now this may sound somewhat cynical, but it gave the committee a new lease of life and led to the Australian Standard which basically consists of a model form (see Figure 1) and a list of codes for each of the data elements on the form. The Standard is in fact based upon the USA's Fire Administration system which was developed over a number of years by the National Fire Protection Association of America. This means that the data collected can in fact be exchanged internationally with the USA and also with New Zealand, which has adopted this basic system.

The model form sets out the data elements required for national statistics. Brigades may use any means of collection as long as they collect the data elements which are set out. The model form itself has provision for narrative answers and space for the information to be coded at some central point. This flexibility is a very important part of the whole system. It is envisaged that all the major brigades will in fact computerise the information using a standard software package and that the data will eventually be collated by the Australian Bureau of Statistics on a national basis. At the present time, the Western Australian Fire Brigade has taken the lead and, in conjunction with the local Australian Bureau of Statistics branch, is developing the required software package, and in fact using the system on a trial basis to sort out any teething problems. I understand that most major brigades will be introducing the system in January 1984, and hence we look forward, for the first time,to having data collection carried out by brigades throughout Australia, in a uniform manner.

However, I believe it should not stop just with fire brigades. The system should form the basis for all fire investigation and data collection in Australia. This means that all of us, the brigades, the investigators, the insurance industry, the police, the scientists, should be recording information on fires in terms of these data elements and coding the information in the same fashion. This does not mean that we have to use that model form; it does not even mean that we all have to collect all those data elements, or not collect other information. It does mean, however, that there would be common data elements and common coding which would facilitate access to the data and interchange of information between the various groups involved. This, I see, is one fundamental way of getting our act together.

In particular, the Australian Standard should provide the basis for a national data base for arson and this base would therefore be compatible with the national fire data which we hope to collect in the near future. Again this would facilitate the exchange and the comparison of information and increase the certainty of detection.

If we examine the data elements on the form, I think that there are certain matrices which could be possible indicators or red flags, if you like, that the fire is of suspicious origin, even if it is not immediately evident. If these matrices of information are identified, it would be a simple matter for the fire brigade computers to pick this up and alert the relevant authorities - the police and forensic science units. This would further facilitate co-operation between the various

groups and be another positive way of getting our act together.

'Getting our act together' in fire investigation and data collection involves many groups of people - the insurance industry, the fire brigade, the scientists, the investigators and the police. How are we to go about this? Well what I am about to say is in fact based upon my report as convenor of a forum on fire investigation which we held in Melbourne at the Division of Building Research some two years ago. All the above groups were involved and the conclusions of the forum, although directed to fire investigation in general, are equally relevant to the investigation of fires of suspicious origins and largely hold good today.

It was concluded that there was a fragmented and uncoordinated approach to fire investigation and that getting our act together involved better definition of the roles of various groups and better communication between them.

Fire brigade personnel generally are first on the fire scene and with their experience of fires they should be the basic element in fire investigation. Further training, particularly relevant to fires of suspicious origins, is required. With the implementation of the Australian system for data collection, such training is even more imperative. Brigade personnel are in fact in the best position to quickly recognise a fire of suspicious origins and alert authorities, such as the police and the forensic science units.

The fire brigade role would be strengthened and facilitated by the formation of units wholly dedicated to fire investigation and this is beginning to happen in some of the major fire brigades.

The main concern of the forensic science laboratories is with fires of suspicious origins. With the upgrading of the fire brigade investigations, incidents requiring the attendance of the forensic scientists would be better defined and on-site visits limited to fires of specific interest. This would enable more time to be spent in laboratory analysis and the writing of reports.

Police arson squads should only be involved in investigating the criminal aspects of incidents and not the actual fires, and this could be achieved if fire brigades and forensic laboratories had the extra resources necessary to carry out the allotted roles that I have just indicated.

Insurance companies and their investigators need to assume a more positive role in denying arsonists the profit from their crimes and defending their actions in court. This needs to be facilitated by fire brigades, forensic scientists and police making relevant information more freely available to insurance companies and investigators, and making it available in good time.

As you will see from the above discussion, the fire brigades play a pivotal role in assuring certainty of detection and alerting other authorities to the possibility of arson. To facilitate this and to

develop the whole area of fire investigation and data collection, all brigades should have fire investigation units. Again, fires of suspicious origin represent only part of the fire problem and investigation of the ignition circumstances only part of the information required. These units would be staffed with suitable officers and investigate designated fires, liaise with the other bodies involved and be generally responsible for the maintenance of the level of training of fire investigation within the brigades. The units themselves should receive specialised training, particularly from various experts especially arson squads and forensic scientists. Information gathered by such a unit would not only be relevant to arson prevention but also to many other problems associated with fires. It would be relevant to fire-fighting operations, fire prevention, fire protection, and building regulations and standards.

It is probably not necessary that such units contain members of the police force because once a fire is thought to be of suspicious origin its investigation should be handed over to the specialist units - those of the forensic scientists and police. This is necessary so that the chain of evidence remains unbroken and vital evidence preserved.

In summary then, arson, the lighting of fires for profit and gain, is but one fragment of the national fire scene, although, as you have all heard this week, a very important fragment. Certainty of detection can be greatly improved by improving the general standard of fire investigation and data collection, particularly if we all use the same language as set out in the Australian Standard for collection of data. With so many different groups involved, we must get our act together and define the roles which each party plays in getting the necessary information.

If these matters are attended to, I am sure we will all have a much better chance of achieving the common goal of apprehending the common enemy.

THE COST OF ARSON

*R. Martin**

OPENING COMMENTS

Never before has there been as much emphasis on arson in Australia as there is today. Our society has created a new challenge for those in the fire and law enforcement fields, and offers many and complex problems to which answers must be found, and as you should be well aware, these answers do not come easily.

Although the cost of deliberately lit fires in Australia is not actually known - estimates exceed $115 million - it is known that arson as a crime is on the increase. The extent and danger of this crime is not one fully realised by the general public.

Unfortunately there is a misconception that the crime of arson only affects 'someone else', or that it is the sole responsibility of the police or fire department. Deliberately set fires however can take an enormous and dreadful toll from our society - one measured in pain, suffering or death.

The result of this criminal action besides not respecting property boundaries and often spreading to destroy neighbouring buildings and irreplaceable property, puts people out of work and increases insurance premiums to offset losses. The loss of a business that can no longer offer employment, accommodation or services may have a crippling effect in a small community.

While insurance can repay for some property losses, no dollar value could ever replace a human life, nor the suffering experienced by the living who have been involved. The tragic loss of innocent lives has recently been evidenced in a number of fires in Australia.

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* In 1980, during the currency of a grant provided by the Special Study Grants Scheme for Members of Australasian Police Forces 1979-80. Sergeant R.J. Martin of the Tasmania Police Force travelled overseas to research the investigation, detection and prevention of the crime of arson.

On his return, the Sergeant submitted a comprehensive report documenting some of the initiatives and programmes implemented to combat this crime, observed and studied in the United States, Canada and England, including a number of recommendations to reduce the incidence of arson in this country.

At the First National Conference, the Sergeant spoke of his research. Although it is not possible to reproduce the report in its entirety, relevant extracts are include for information.

INTRODUCTION

Arson is justifiably one of the most serious crimes, because it is committed indiscriminately, often killing and injuring innocent people and always destroying property.

Arson, often called the 'easiest crime to commit', might also be described as the 'most difficult crime', at least when it comes to proving guilt.

Arson poses several unique problems for fire investigators. Firstly, an investigation must be conducted to establish that a crime has been committed. Evidence is frequently hard to come by, since much of it literally goes up in smoke. Fire fighters, concerned with putting out a fire, inadvertently move or discard objects that might be useful in determining cause and responsibility. Furthermore, arson cases, characterised by the usual lack of witnesses and devastation of the crime scene are difficult to prove legally. A shortage of trained investigators also limits arrests and convictions.

Arson is the crime of the greedy, the hateful, and the mentally disordered, although there are many reasons why fires are deliberately set. Economic gain involving fraudulent claims against insurance companies is an increasingly common motive and is one which is leading to organised crime in the U.S.A. A study completed by the American Business Week magazine in 1975 showed that the fraud arson statistics are affected by recessions in the economy, and that when a downtrend in the economy occurred a rise in the arson statistics followed.

Other motives are personal satisfaction, opportunity for heroics, furtherance of a cause, concealment of a crime, revenge, jealousy, spite and vandalism. Arson by the mentally afflicted, pyromaniacs or for sexual kicks is also fairly common.

A disturbing factor in the United States is the ever-increasing number of children involved in the deliberate setting of fires. Most convicted arsonists are under 21, the peak age being between 14 and 17. School buildings are the most common target, and account for one fifth of malicious fires. A theory that may explain this comes from Mr Norman Strother Smith, Director of the Fire Protection Association, who told a recent conference on fire safety of a surprising link in the statistics for deliberately started fires and divorce; both had risen in almost exactly the same proportion over the past 20 years.

Arson - the wilful and malicious burning of property, has increased dramatically in the United States, Canada and England in recent years. In the U.S., data published for the years 1965-75 indicate that incendiary fires increased by 325 per cent. In Canada, losses from deliberately set fires rose from $23.6 million in 1966 to $125 million, in 1977 and in Britain, £35 million in 1975.

In these countries arson has now been recognised as a national problem. Arson required and is receiving a multi-level effort aimed toward its solution. Priority has been given to research and the development of viable strategies to determine the most effective response to the growing problems of arson prevention and control. Much attention has been and is being focused on arson from national and local news media, Federal, state and local government agencies, insurance industry organisations and individual companies, housing and banking industries, professional trade associations, civic groups and neighbourhood organisations.

Anti-arson programmes are succeeding in many instances due to the commitment of local officials, the awareness of the community, and increased assistance from the insurance industry. Although many initiatives and programmes have to be fully proven, perhaps contributing to the improvement in enforcement is the growing number of arson task forces and special training efforts for arson investigators.

To reduce the growing incidence of arson in Australia, we also must develop and foster a close liaison between all agencies interested in the fire problem. We can learn by overseas experiences and emulate those programmes that have proved successful. Only in recognising that arson is a pernicious crime that has an effect on the whole community can we hope to develop the expertise required to combat this growing menace to society.

A number of recommendations are included in this report for consideration, including; the formation of a National Fire Academy; improved training for fire investigators; training for all firemen in arson recognition; the improvement of arson statistics; and the formation of arson task forces and units.

THE ARSON PROBLEM

Arson is a multi-faceted problem. It has implications for all levels of government - Federal state and local. It affects the private, as well as the public, sector and its solution requires input from both. The U.S. Fire Administration's *Report to Congress* identified four distinct elements of the arson problem. These are: investigation and prosecution, management, economic, and psychological or behavioural. These four categories are as follows:

> First is the detection of arson, as part of a fire investigation, to determine fire cause and origin; and the preparation of an arson case, based on a follow-up criminal investigation, involving questioning of suspects and witnesses, establishing a motive, and preparing legal paperwork to obtain adequate evidence for the prosecution of arson as a crime. This obviously affects both public safety agencies - fire and police, but also includes prosecutors and judges. Training of all these is an important part of this facet of arson, as is public

education, so that citizens, who may decide the fate of arson cases in the role of jurors, will recognise the seriousness of arson as a crime and be able to understand some of its complexities. Also important is the development of new technologies to aid in the detection of arson and the identification, collection, preservation, and analysis of arson evidence.

Second is the management aspect of the arson problem. Because of the many persons involved in developing solutions to the arson problem - either on an individual case basis, or on a community or national basis - there is often competition and lack of co-ordination among the agencies involved. The community-wide task force approach can be an effective solution, because it brings together, in one officially recognised forum, all the people and community interests to jointly seek strategies using the community's total resources.

Because of the community-wide nature of the arson problem and its solutions, the involvement of a community's top level management and decision-makers is necessary to obtain co-operative and effective solutions. Elected officials and city managers must understand the arson problem and effectively demonstrate their commitment to its solution.

Another element of the management facet of arson involves the need for a detailed data base for analysing the community's specific arson problem. There are many different kinds of arson, and it has not yet been established whether comparable communities experience the same type of arson as predominant. For example, not all large cities may experience arson-for-profit as the most significant causal type. Furthermore, within any one community, different types of arson may prevail in different areas. Since the strategies to prevent or control arson vary significantly, depending on the specific type (for example, arson-for-profit versus juvenile firesetting), it is important for a community to identify the specific type of arson that needs to be controlled before attempting to apply community resources to effect a solution.

Third is the economic facet of arson. Through their structure and policies, the banking and insurance industries play a leading role in, if not providing incentives to arson, at least providing pressures that promote arson and barriers that preclude its easy solution. Both housing and commercial segments of a community are affected as targets of arson and, therefore, must contribute to developing preventative

measures. These elements of the community can be particularly useful in a strategy of 'hardening the target' - that is, taking measures to secure property against arson.

Fourth, the psychology of arson brings the problem, to the level of an individual - the arsonist, and his motivations and thought processes. There are many motives for arson and only some of them can be dealt with through analysis and counselling of psychologically disturbed persons. Juvenile fire-setters represent one group of arsonists to which counselling has been successfully applied. The involvement of juveniles in arson again emphasises the complexities of the crime, for it involves persons of all ages. Another behavioural element of arson is the need for increased awareness and understanding of the seriousness of arson, to affect not only potential arsonists, but also the general public which can assist in the identification, deterrence and prosecution of arsonists.

Arson is a complex problem and, therefore, attempts to alleviate a community's (or a nation's) arson problem must account for its multi-faceted nature, as well as the specific difficulties this crime presents. Some of the constraints affecting solutions to the arson problem are :

A variety of motives for or causes of arson;

The structure and policies of the housing, banking and insurance industries;

The nature of Federal and State regulations of these industries;

The difficulty of determining that arson was committed and obtaining the evidence to establish a motive and identify the perpetrator(s);

The historically low probability of winning an arson case that is brought to court;

The lack of readily accessible data on property ownership and insurance coverage; and

The possible existence of competition, confusion and lack of co-ordination among the various agencies and community elements that need to be involved in the struggle against arson.

Depending on the motive involved, arson can be seen as a white-collar crime or a terrorist act, with a wide-ranging variety in between. The U.S. Fire Administration has identified a total of 24 different motives for arson, including revenge, arson-for-profit, clearing property for

new construction or to remove low-income tenants, stopping business losses, advancing to the top of the welfare list for new apartments, or hiding some other crime. According to the U.S. Fire Administration's testimony to Congress, 'criminal involvement, human behaviour, social change, economic trends and urban decay, all contribute to the national arson epidemic.'

Despite the terrible record of increasing arson in the last several years, and the many constraints that work against solutions to the arson problem, there are many opportunities now available and on the horizon that will likely mark significant progress for anti-arson efforts.

The U.S. Fire Administration has made recommendations that suggest the following 4-pronged strategy to combat arson:

Increase the risk to arsonists by improving investigation and prosecution techniques;

Improve the management of anti-arson programmes and related data systems;

Remove the economic incentives to arson; and

Analyse and counsel the psychologically motivated arsonists.

The U.S. Fire Administration, with its own funds as well as some transferred from LEAA, is making available training and materials to aid local governments in learning about and implementing programmes that have been successful in other communities. These action programmes include:

A handbook on establishing a multi-agency arson task force, which is structured to overcome the competition and lack of co-ordination noted above;

A manual on a juvenile firesetters program;

Training on arson detection and investigation;

A model neighbourhood action programme; and

Arson management information systems.

In the last several years, news media attention has focused on the dramatically increasing incidence of arson. This has had the impact of arousing public awareness which has then been used to advantage by several community programmes, especially those arson task forces which have worked well with the news media. The attention of the U.S. Congress has also furthered public awareness through a series of public hearings on arson and resulting criticisms of Federal programmes, thus encouraging various agencies to make needed improvements and to take a more aggressive approach to combat arson.

A significant advance to understanding the arson problem and taking effective action to decrease it will come from the development of a better arson data base. The designation (even though only temporary so far) of arson as a Part I crime, with statistics on incidence, arrests and clearances by the FBI (as part of the Uniform Crime Reports) will help to focus additional attention on arson as the serious crime that it is.

The continued growth of the U.S. Fire Administration's National Fire Incident Reporting System (NFIRS), especially as it is joined by more urban jurisdictions, will provide an increasingly accurate profile of the extent of arson and its various causes. Other data systems, such as that of NFPA, will likely also be useful as a baseline from which to establish a perspective on arson as part of the overall fire problem. From this, arson-specific data bases may be developed to further enhance the understanding and knowledge of the problem. The continued development and improved functioning of arson early warning systems in cities around the United States will provide a significant advancement in the prediction and,ultimately, the prevention of arson.

Increased public awareness of arson, improved training of investigators to obtain better arson evidence, and better preparation of cases by prosecutors should result in more frequent convictions and more equitable sentences in arson cases.

An indication of the establishment of a level of public awareness of the arson problem and the possibilities for future impact on its solution is the interest of private sector organisations in marketing products and services related to arson detection. One example of this involves the application of criminal justice expertise to the arson field. In March 1979, Clarence Kelley, former FBI Director and Kansas City, Missouri, Police Chief, announced plans to gather a force of retired FBI agents to serve as arson investigators, as part of the Virginia - based firm, Diversified Management Research, Inc. Despite their experience in criminal investigations, however, these ex-agents will be trained in the specifics of arson investigation. This proposed effort shows a recognition of the demand for trained arson investigators as a service that the private sector might profitably provide.

Finally, opportunities for combatting arson are developing in the area of technology. To aid in the investigation of arson, there are devices being marketed that detect vapours from liquids used to accelerate the fire. The promotional material for one such device, called an electronic nose gas detector, claims that it detects accelerants for up to three days after a fire, detects gas concentrations of less than 50 parts per million, and allows access to difficult to reach areas. Also available are prepackaged arson investigation kits which include the above-described detector, a portable cassette recorder for interviewing witnesses, and a camera for on-the-scene photographs. Other devices recently marketed to aid in the collection of better arson evidence (although they may have other uses) are combustible gas detectors, voice analysers, and mobile arson laboratories.

Such examples of private sector interest to develop and apply their technology to the needs of individuals and communities combatting arson are encouraging, because they could well lead to significant technological breakthroughs or other types of progress toward solving the arson problem.

TIPSTER/HOTLINE PROGRAMMES

Tipster/hotline programmes solicit the help of the public in providing investigative leads to solving a particular arson case. The programme consists of a telephone number, most often 24 hour lines, which citizens can call with information pertaining to arson related fires.

In connection with the majority of tipster/hotline programmes is a reward fund, usually financed by the insurance industry. Rewards range from small amounts for useful tips to larger sums for information which leads directly to the arrest of a firesetter (see Appendix C).

Most of the tipster/hotline programmes are statewide but local organisations have also begun to initiate programmes. Tipster/hotline programmes are in effect in several cities and states.

WE TIP

The 'We T.I.P. Inc.' (We Turn in Pushers), is a Californian organisation that began in 1971 to involve the people of California in curbing the drug problem. The group set up a reward system (of up to $500.00) for anonymous information that would assist investigators in the arrests and convictions of drug crimes. The programme was so successful that it has now expanded into all major crimes, including arson.

Founded by Bill Brownell, a retired Los Angeles County Sheriff's Deputy, 'We T.I.P.'s' sole purpose was, and still is, citizen involvement, not a reward of 'get rich off of snitching' concept. With the expansion of 'We T.I.P.' into arson crimes, fire investigators can now benefit from 'We T.I.P.'s' experience in assisting investigators with information passed on by the public. This teamwork should prove to be extremely beneficial in the'War on Arson'.

A press conference held in Los Angeles on 11 July 1978 was the official start for the 'We T.I.P.'s' 'War on Arson' Senator William Campbell, Chairman of the Senate Select Committee on Fire Services, read a Senate proclamation supporting the 'We T.I.P. War on Arson'. State Fire Marshal Phil Favro stated his office's support, as did representatives from the insurance field, the California Conference of Arson Investigators and many others. The programme now depends on the support of the citizens of the State of California and Arson Investigators.

The following is a description of how the 'We T.I.P.' programme works:

We T.I.P.'s operation is headquartered in Los Angeles County with a working staff of eight. The programme is totally non-profit and must rely on donations to operate. Trained operators staff the TOLL FREE Tip-line, to accept information from people regarding crimes. The operator stresses that the individual not give their name, only information. The operator asks various questions that are typed onto a form with a case number. The person is given a code name and code number. Any further contact must be made back to We T.I.P. (that is - was there an arrest and conviction and possible reward for the informant).

When necessary, the We T.I.P. operator phones the information to the investigative agency for which the information is intended. The information is then typed on a five part form and mailed to the concerned Fire Departments, Police Departments and Sheriff's Department. The investigator should notify We T.I.P. of arrests and convictions regarding the information. The We T.I.P. operator will ask the investigator, upon conviction of the suspect, for a relative worth of the information, so a reward can be determined. If the investigator feels it was a very good lead to his case, the maximum reward may be given.

Another area of We T.I.P. is 'Witness Anonymous'. This programme utilises the newspapers in providing information to the public about a specific crime and soliciting citizen involvement by phoning We T.I.P. or the investigator in charge of the case. Co-operation from local newspapers was needed and this was gained with many newspapers casting their support for Witness Anonymous.

The We T.I.P. information is an investigative tool only. The informant cannot testify in court and remain anonymous also. The information can only guide the investigator in the proper direction.

Many times the information is good, sometimes it is bad. Good or bad, the fact is that information is received from people who possibly never would have come forward with information if not anonymously and without fear of reprisal.

We T.I.P.'s War on Arson slightly modified the procedure that is to be used by Arson Investigators. A poster was developed to be placed at the scene of an arson (or in an area where arson has been committed). This poster gives people in the area the TOLL FREE number to call and give information. This poster is placed at the scene of the fire at the discretion of the investigator, after he has interviewed witnesses and received no information. A Witness Anonymous column is also placed in the newspaper regarding the fire. The following is the recommended Procedure for utilisation of We T.I.P. by arson investigators.

1. Utilisation of Posters

Once the investigator has determined a fire to be intentionally set, a We T.I.P. poster can be placed at the scene of the fire or in the area. The case number assigned to the investigation should be placed at the top of the poster so that the informant can give the case number to the We T.I.P. operator.

As soon as possible the investigstor notifies WE T.I.P. of the case number, investigator in charge of the case, the department (police, fire, sheriff, etc.) the city of location and basic facts pertaining to the fire.

2. Utilisation of Witness Anonymous

After a fire scene has been posted, the investigator should give the information to the newspaper for a Witness Anonymous column.

The information should include the case number, date of occurrence, time, address, brief description of the circumstances, the investigator to contact (with phone number) and the We T.I.P. TOLL FREE number.

The poster at the scene of the fire, and the Witness Anonymous newspaper column provide the investigator with two sources of information.

3 Information from We T.I.P.

The We T.I.P. operator will phone the investigator upon receiving the anonymous information. A copy of the Tip is then mailed to the concerned Fire Department, Police Department or Sheriff's Department. The information may or may not be useful to the investigator. If, however, the information can bring the case to an arrest and conviction, We T.I.P. must be notified. The operator must also know the relative worth of the information. Rewards are paid to the informant based on the investigator's estimation of worth.

The We T.I.P. operator forwards the officer's evaluation on to the We T.I.P. Board of Directors, who determine the reward. The reward is paid by use of U.S. Postmasters as drop points. The informant gives only his code name and code number.

The We T.I.P. programme has proven very successful for many years in reducing drug trafficking. Since the inclusion of arson into We T.I.P., fire investigators can now use a unified state wide programme to fight the growing crime of arson.

4. Publicity

A series of suggested logos and promotional advertisements are produced for newspapers, television stations, radio stations and promotional use by organisations by the 'We T.I.P.' organisation. Posters, brochures, matches, bumper stickers, information stickers and cards are also supplied at minimal cost to any organisations wishing to take part in the 'We T.I.P.' programme.

This organisation undoubtedly receives extra publicity because of the fact that personalities, such as television and movie star, Robert Stack (National Honorary Chairman 1978-79), donate their services voluntarily for the welfare of the community.

ARSON TASK FORCES

In the United States of America the most important development in anti-arson efforts in the last five or six years has been the realisation that a local fire department, or local fire and police could not be expected to control the arson problem alone.Many fire departments had found it impossible to keep pace with the increased incidence of arson - let alone experiment with measures to curb incendiary fires. The dramatic increases in incendiary fires in buildings had absorbed increasing numbers of man-hours for investigations of the cause and origin of fires, the interrogation of suspects and the analysis of evidence. Similar strains had been placed on prosecutorial resources for case preparation and trial.

At the same time, the two-fold increase in the percentage of total fires attributed to arson had sharpened the concern of the press, political leaders and the general citizenry - accelerating the demand for a visible, co-ordinated effort to reduce arson losses. In response, government and business leaders in many jurisdictions have developed an independent interagency capability or task force to control and direct the diverse community resources necessary for arson prevention and control. In concept, these task force efforts all share the recognition that arson is a complex crime that goes far beyond the jurisdiction of a single agency. In practice, the task force has taken on a variety of forms, depending on the local environment:

In Philadelphia, the task force is a special co-operative effort between the police and fire investigation unit and the Federal Bureau of Alcohol, Tobacco and Firearms. This investigative effort is strengthened by prosecutorial help from the U.S. Attorney's Office and has been recently joined by the Economic Crime Unit of the local District Attorney's Office.

In New York City, the task force is a city-wide effort that includes police, fire, housing and insurance industry authorities involved in the Fair Access to Insurance Requirements Plan, as well as the District Attorney and Deputy Mayor for Criminal Justice. This effort has emphasised the development of proactive strategies such as arson patrols, electronic surveillance and city ordinances reducing the profitability of arson.

Seattle's task force includes members from eight agencies with active participation from both the public and private sectors. In its initial operations this group focused on defining roles and responsibilities for arson investigations.

In Massachusetts, the task force is a state-wide arson prevention committee with a diverse membership organised in three sub-committees; one on the economic and government instituional factors that create a climate for arson, a second on the motivational or psychological factors that are behind non economic arson, and the third on developing an adequate investigative capability.

From 1974 to the present, fully 70 percent of all cities over 300,000 have adopted some variation of the task force concept.

ARSON UNITS

An effective arson control effort requires two major components: a planning and co-ordinating body (the arson task force) which establishes the community's arson response priorities and facilitates their implementation; and an operational component (the arson unit squad) which is responsible for day to day arson prevention, control and investigation activities.

Since the daily operations of the arson unit draw on the traditional capabilities of police and firefighters, the key issue in the establishment of the unit must include the degree and nature of police and fire department involvement in the arson unit.

Distribution of Responsibility Between Police and Fire Departments

Arson presents a unique situation in the field of public safety. In one sense, it is obviously a concern of the Fire Department - it involves, after all, a fire incident which must be contained and investigated like any other fire. In another sense, however, it is a concern of law enforcement, since it involves a crime which must be investigated. Given the legitimate interest of both departments, it is not surprising that the optimal distribution of responsibility for arson between those agencies has been a matter of some debate - and in fact,some bitterness.

Three mehtods of distributing responsibility between police and fire departments are currently being used in the United States. In the first, the fire department assumes all responsibility for arson investigations, from the cause determination through lengthy and complex criminal investigations. The second approach is to place

exclusive responsibility for arson investigation with the police. Finally, communities may choose to divide investigative responsibilities among the police and fire departments. Included within this latter option are a number of distinct approaches for allocating specific investigative tasks.

Fire Department Responsibility

Many believe that the fire department should be solely responsible for arson cases because its personnel are more experienced in determining the causes of fires and are more committed to apprehending arson offenders. In addition,exclusive fire department responsibility for arson can ensure that investigators have at least a basic familiarity with forensic aspects of the fire investigation and that lines of communication and authority during the investigation are simple and direct.

Firemen recruited to the arson squad receive police training and are sometimes sworn as police officers. In each city the fire department had in the past relied on police department co-operation in conducting arson cases, but problems of coordination and jurisdictional disputes impaired the working relationship. Officials concluded that direct control and clear lines of authority within the fire department were more important than the use of police department expertise and manpower. This arrangement has not precluded co-operation with the police in arson-related matters other than on-scene investigation, however, in Denver for example, the arson unit has access to police laboratories, forensic equipment and records, and when arson cases also entail major felonies such as homicide, the police are automatically involved. In addition, police training programmes are readily available to fire officers.

Unfortunately, there are also disadvantages associated with this approach. Perhaps the most important of these is that fire department investigators may lack some of the skills required for criminal investigation. In fact,few fire officials have the training or experience necessary to interrogate recalcitrant suspects or elicit information from reluctant witnesses. Clearly, then, extensive training in criminal investigation procedures is required if the investigative function is to be located solely within the fire department.

Police Department Responsibility

Full investigatory responsibility to the police department is where arson is viewed primarily as a crime problem requiring police expertise and clear lines of command rather than the skills available in the fire department.

Generally, however, placement of arson investigations with the police department only is viewed with little enthusiasm.

According to fire officials, locating the investigative function entirely in the police department may pose substantial problems:

> Response time to the fires by police may be slower than it would be for fire officers;
>
> Detecting arson requires training and experience that a police officer usually does not have;
>
> Police are reluctant to do the dirty work of moving burnt timbers and debris to uncover evidence at the fire scene;
>
> Fire departments seldom get any feedback on the investigations from police investigators and hence find it difficult to develop preventative strategies;
>
> Arson investigation is only one of many competing demands on police time and may receive a lower priority than other criminal matters.

Shared Responsibility

A final option is to share responsibility for the arson investigation between the police and fire departments. Advantages of this approach are obvious; the special expertise of each group may be applied to arson investigation; training needs for both groups will be reduced; neither fire department nor police department budgets would need to be greatly expanded; and the resources and support services of both departments (records, equipment, laboratories, etc) may be applied to the arson investigation.

The difficulties that may be encountered in the attempt to share responsibility for arson are also self-evident. In the U.S.A. police and fire department relations have often been characterised by battles resulting from interagency jealousies or by shirking of responsibilities by both agencies. These problems may have been exacerbated where police personnel were asked to report to fire department officials, and firefighters to police management. Finally, communications between the two agencies have traditionally ranged from poor to non-existent. It was clear that a successful attempt to share responsibility between agencies must first solve the problems of interagency jealousy, conflict, co-ordination and communication.

Many U.S. cities have successfully resolved these problems and constructed viable and effective organisational structures in which the police and fire departments share responsibility for arson investigations. Generally, such joint participation of police and fire departments follows one of two models:

- Police and fire officers conduct investigations as a team; both departments are involved in all phases of the arson investigation.

. Police and fire officers clearly divide responsibility for the arson investigation. While fire investigators assume the initial cause and origin investigation, responsibility for continuing investigations is either divided between police and fire officials or placed exclusively with the police department.

Arson Task Force/Squad

The concept of an arson task force or squad has attracted much attention in the media, professional literature and at fire related conferences. Overseas experience in combatting arson has become quite well known. While all of our major metropolitan areas do not necessarily have severe arson problems, these metropolitan areas do present challenges that are in many respects quite different from the problems of smaller municipalities and townships.

Whether or not an arson task force or squad is required to combat the growing incidence of arson the principles inherent in this approach are of interest as an example of an effective method of reducing the arson problem overseas.

Investigation

Before prosecution comes investigation and many authorities would agree that the most important segment of the arson control effort is the investigative unit. While the total attack on arson may be a task force responsibility, it is upon the investigators that the ultimate success of a programme will depend.

ARSON LAWS

In America, states currently operate under an array of widely divergent arson statutes, other laws relevant to arson and case law. States even disagree on the definition of arson. These differences among states often create a confusing legal situation. However, efforts are currently being made to change existing statutes or introduce new 'model' laws to more effectively combat arson. The most important of these are the two described below.

a. Model Arson Penal Law

This law is based on two earlier attempts for a model arson statute. The first of these is the Model Arson Law, originally published by NFPA in 1931, and revised in 1948 by the National Board of Fire Underwriters. It has been adopted by 27 States. The other is the arson section of the American Law Institute (ALI) Model Penal Code of 1960, which has been adopted by 23 states. Since research has indicated that both have serious flaws, a new model arson penal law has been sought by many public agencies, insurance and other organisations.

The Insurance Committee for Arson Control has developed the Model Arson Penal Law, combining features of the previous two 'model' laws. Other organisations, however, including the U.S. Fire Administration are drafting their own model legislation.

This model arson law combines characteristics of NBFU's old model arson law and the theory of ALI's law. This model is structured to apply to the basic varieties of intentional burning, to explosions and to unknown future offences not yet experienced in the criminal justice system. It provides reasonable penalties for:

- Acts that endanger both life and property.
- Damage to real and personal property by either fire or explosion.
- Damage to an 'occupied' building.
- Conspiracy to cause a fire or explosion.
- Damage or destroying the property of another person.
- Destruction or damage of property to collect insurance proceeds.
- Reckless or negligent use of fire or exposives.
- Making false reports concerning the placement of incendiary or explosive devices or other destructive substances.
- Failure to control or report a dangerous fire.
- Attempting to start a fire or cause an explosion.
- Causing or risking a catastrophe and failure to mitigate a catastrophe.
- Possession of explosives or incendiary devices.

Of concern to both citizens and law enforcement officials has been the large number of deaths and injuries attributed to arson, yet the arson laws of many states fail to penalise the offenders. This model includes provisions concerning aggravated arson and reckless burning or bombing and provides penalties for those fire-setters whose offences cause death or injury to or threaten the lives of firefighters and other innocent victims.

An important feature of the model law is the provision for penalising those who intentionally cause explosions (bombings), currently such destructive acts of violence are not specifically included within the arson sections of most state penal codes.

From experience, the insurance industry knew that in many fraud or arson-for-profit fires the insured property owner usually aids, counsels or procures a fire-setter while the property owner establishes an alibi. The term 'aid, counsel and procure' is the theme used from the NBFU's old model arson law. This characteristic of conspiracy was intentionally woven into the model law to ease the prosecutor's task and to give him greater

latitude to charge and convict the hired arsonist as well as those who employ the arsonist or who participate in a conspiracy to burn or bomb while performing under the pretext of an alibi.

Inclusion of provisions for penalties for causing or risking a catastrophe by the use of poison gas, radio-active material or other harmful or destructive force or substance provides for futuristic offences not yet experienced. However, it was considered that such provisions are needed not only to provide penalties for those who may cause a catastrophe by the use of nuclear and other destructive forces, but also to deter or prevent the first such incident.

Consideration was given as to whether a provision for attempted arson should be included as a specific part of the model arson law. It was concluded that it would be advantageous to the prosecutors if attempted arson were part of the arson penal code and it was therefore included in the model.

b. Model Arson Reporting Immunity Law

The law, patterned after Ohio's law granting immunity to insurance companies giving information to law enforcement agencies, has been developed by the Insurance Committee for Arson Control. The major purpose of this model law is to increase the flow of vital information between insurance and law enforcement personnel to enhance arson investigations. It allows insurers to inform fire marshals or other appropriate officials about suspicious fires and allows fire officials to exchange with insurers information uncovered during their investigations. This has been adopted so far in 36 states.

One of the problems insurance companies in the U.S.A. have faced in fighting arson has been the threat of civil suit and potential liability when confidential information about an insured is disclosed to law enforcement authorities. In 1976, the Ohio legislature enacted what is believed to be the first law granting insurance companies immunity from suit when they share arson-related information with law enforcement officials. In 1977, the Alliance of American Insurers drafted model legislation entitled, 'Arson Reporting-Immunity Bill'. The Alliance, American Insurance Association, National Association of Independent Insurers and other insurance associations believed that immunity laws were needed if insurance executives were to report suspected arson cases to law enforcement authorities. They believed that a two-way flow of information between insurers and law enforcement agencies is necessary to effectively combat arson.

The major purpose of this model law is to increase the flow of vital investigative information between insurance companies and law enforcement agencies. The law allows insurers to inform the state fire marshal or other such persons of fires that appear to be suspicious in origin. It permits insurers and arson investigators to exchange information developed during their separate investigations.

Specifically, the insurance Model Arson Reporting-Immunity Law:

1. Allows authorised agencies (defined as state and federal fire marshals, law enforcement officers, insurance commissioners and prosecuting attorneys) to require that insurance companies release all information concerning a policy holder involved in a fire loss. This information includes history of premium payment and previous claims, as well as investigatory files.

2. Requires insurance companies to notify authorised agencies of suspicious fire losses. Such notice constitutes a request for official investigation.

3. Grants limited civil and criminal immunity to those insurance companies that provide information under the provisions of this Act.

4. Provides for the exchange of information between the insurance companies and the authorised agencies and the exchange of information between authorised agencies.

5. Provides for confidentiality of released information.

In criminal investigations, it is vital that investigators have access to all information relevant to the case under investigation. While much of the information developed by insurance companies may be unsubstantiated (at least early in the investigation), it may be exactly the data needed by investigating authorities to develop leads and uncover other more substantive evidence. However, if insurers must first substantiate the facts to avoid being sued for libel by clients, key information may never reach the proper authorities.

The Model Law permits the release of information at critical stages of the investigation by protecting the insurer from legal action, harassment, or punitive damages regarding any information it provides in good faith to investigative authorities. Without this immunity law, or similar provisions, insurers are inclined to withhold all but proven facts in order to avoid vulnerability to a civil suit.

SUMMARY

Arson, or the deliberate setting of a fire, is increasingly being recognised as a major social problem. It is easy to see why it is considered by many to be the most costly crime in the world today. In arson, there is virtually no salvage or recovery; ashes are a total economic loss.

The perception that arson destroys only worthless property is without foundation. For example, estimates on the cost of arson in Australia today, range from $3.2m to $115m per year. The combined costs of direct property loss and public fire brigade operating costs in 1977, were approximately $484m. Many of these losses included people's homes, businesses and schools. According to Australian Fire Protection Association records, deaths by fire in 1979, totalled 157.

Arson is a crime that is unusual in that the event must be carefully investigated first before one can ascertain whether the occurrence was indeed a crime. Arson is one crime which, if well done, destroys the evidence of its own existence. Despite its roots in antiquity, arson has not been of a truly major concern to police officers or fire fighters until recently.

Efforts overseas to prevent and control arson have been constrained by a number of related factors. First, and perhaps most obvious, is the low priority traditionally given to arson by the community, law enforcement, and fire control agencies. This in turn, is compounded by the second factor: the complexity of arson. The crime known as arson actually includes any number of distinct and unrelated fire setting behaviours, each of which demands very different responses from government, the community and public protection agencies. Finally, arson control programmes have been hampered by a lack of knowledge concerning the true scope and incidence of this crime.

In part, arson may receive little attention due to two significant perceptions about this crime;

1. that the prosecution of arson is very difficult and mostly unsuccessful; and
2. that it is a property crime rather than a crime of violence.

The perception that arson is a difficult crime to investigate and prosecute may, in fact, be justified. Four factors in particular may account for this:

a. It is most difficult to establish that a crime was committed. In most other crimes, whether against the person or property, there is a victim who comes forward and reports the crime. Not so for arson. Many arson fires are contrived to appear accidental.

Even when a fire is obviously incendiary, the owner generally receives an insurance payment. Thus, in many cases, the apparent victim may actually be the perpetrator.

b. At a minimum, the investigation of arson requires a collaborative effort among police, firefighters, prosecuting attorneys and insurance executives. Yet the roles of each of these groups are seldom defined in a manner that encourages interagency co-operation and information sharing.

c. The real culprits are not always the firesetters, but may be a group of seemingly innocent citizens who manipulate the complexities and weaknesses of insurance laws for their own economic gain.

d. Finally, even if arson is established as the cause of a fire and a suspect is apprehended, it may be difficult to obtain a conviction. In most cases, the prosecutor must be able to:

(i) establish exclusive opportunity;

(ii) produce a witness.

These two elements are exceedingly difficult to provide in crimes such as arson.

Another clear fact about arson is that people do not realise what a problem it is. Many people quietly think of arson as legitimate, as long as no-one is hurt. There is a common-law assumption that people have the right to destroy their own property if they want to, but every time a fire is lit there is the risk of injury to firemen, and the possibility of the fire spreading farther than the arsonists planned.

Because arson losses are discussed in terms of insurance payoffs, many people believe that fraud fires hurt only big business, but the price is passed along in insurance premiums to homeowners. Landlords pass the higher premiums along to rent payers. In addition to these direct losses, arson causes other indirect financial impacts:

- death and injury to citizens and firefighters;
- increased insurance premiums;
- increased taxes to support fire, police and court services;
- loss of jobs at factory and business sites;
- lost revenue to damaged businesses and industries;
- loss of adequate public facilities (particularly schools) as a result of arson fires;
- loss of housing for inner-city residents; and
- erosion of the municipal tax base.

Given the extraordinary financial damage that arson can inflict on the community, it is not surprising that new anti-arson initiatives are being sought.

Most people believe that arson is one simple crime - the act of 'maliciously burning the building or the property of another, or of burning one's own for some improper purpose, as to collect insurance'. While such a definition establishes the basic elements of the crime, it cannot convey the diverse motivations, targets and actors which are all part of arson. It might be argued, in fact, that there is no single crime called arson; rather, there are acts of vandalism involving fire, insurance frauds, assaults which use fire as a weapon, crime concealment efforts, etc.

Similarly, the simple definition noted above cannot express the very distinct activities which must be undertaken to address the arson problem in all its many manifestations - public awareness activities, criminal investigations, mental health screening and counselling and arson patrols, to name a few.

The magnitude of the arson problem in Australia is difficult to accurately estimate. In the absence of a reliable nationwide data base on the reported incidence of the crime, estimates are generally based on survey data collected by different organisations and from different respondents. However, these estimates suggest that arson as a crime is increasing,signs indicate that we are experiencing a significant growth in arson for profit. The collection and analysis of more detailed information on fire incidents on a uniform Australia-wide system is essential.

We do not know exactly how many fires are set. Firemen classify fires as incendiary or suspicious when they find evidence that the fire was set deliberately and maliciously. About as many fires are classified unknown or undetermined, because the fire has destroyed all the evidence of any cause, accidental or criminal. Most experts agree that about half of all undetermined fires are set. These include large, successful arsons that destroy their own evidence.

The number of set fires may be even higher. Professional torches set fires designed to look like electrical or other accidents. Recent tests show that carelessly discarded cigarettes are less likely to start fires than is usually thought. This raises questions about fires in piles of rubbish, now attributed to careless smoking, which may have been set.

'Corpus Delicti' is the body of the crime; and in arson this means establishing that a building or property did actually burn and that the burning was the result of the wilful and criminal act of some person. We must show intent, or that the action was intended to result in the wilful and wanton or malicious destruction of property by fire.

This is the foundation of all arson prosecutions; and is the first step taken in a criminal proceeding since if it cannot be shown that the action was intended to destroy property maliciously, then a crime does not exist and the case would stop right there. Building this foundation for arson prosecution is usually the responsibility of the fire or police service and discharging this responsibility can only be accomplished by a thorough investigation and understanding of the causes of all fires.

Good investigation requires many more manhours than is generally realised; and even though an extensive fire may be put out in a few hours, the investigation could take several hundred manhours for such items as examining the premises for point of origin; reconstructing and analysing materials in this area (glass, wood, rugs, plastics, chemicals, etc.); examining electrical and mechanical equipment, such as wiring, appliances, clocks, and thermal controls; searching out and interviewing the person who turned in the alarm, occupants, owners, adjusters and many other possible witnesses - not to mention the photographs, sketches, preserving the evidence, report writing and court appearances.

All the participants in the fire investigation process require specialised training in the roles they are to perform. An example of the consequences of the lack of adequate training can be seen in the following:

> Fire fighters at the scene of a fire concentrate in putting out the fire. No special effort is made to identify or preserve evidence and no witnesses watching the fire are questioned. The next day an investigation concludes that the fire started in a fuse board and the incident is classified as an electrical fire. The actual source of the fire (in a pile of trash) is not identified because it was disturbed by firemen or unnoticed by investigators.

The specialised training needed for firefighters who are first to arrive at a fire scene includes how to observe the fire scene to detect arson possibilities and preserve evidence. The fire investigators who make the cause determination must be trained in criminal investigation procedures, the rules of evidence, evidence collection and preservation, basic fire chemistry, fire causes, fire terminology and fire fighting methods and the technical skills of identifying fires caused by accelerants. Prosecutors must know the techniques of economic crime prosecution and the particular evidentiary requirements of insurance fraud cases. In addition, they should receive training on the forensic aspects of arson investigation.

As for the youth problem, we can learn from a 'young offenders work programme' operating successfully in California, where juveniles who have set a fire as a first offence are ordered to report to the nearest fire station for short periods to help with the station and appliance clean-up and other chores.

The officers and men try to show the offender that much time and effort go into attending deliberately-set fires, and to make him aware of the danger involved to the arsonist himself as well as to others. Sometimes a two or three page essay on the theme 'Why I should not play with matches' is also required. Out of 125 juveniles ranging from eight year olds to teenagers put on this work programme, only one youth has set another arson fire.

The need to improve organisational relationships among police and fire departments, prosecutors, Federal agencies and insurance companies is a common theme in the literature of arson prevention and control. Sometimes more than one of these organisations may be responsible for an investigation and efforts may be duplicative or at cross-purposes with one another. In addition, insurance companies usually conduct their own independent inquiries. Since a collective response is essential in efforts to reduce the economic incentives for arson there must be close co-operation with the insurance industry to mount and maintain effective arson prevention and investigative programmes.

This report does not attempt to provide detailed solutions to the arson problem but represents an attempt to highlight a number of initiatives and programmes introduced overseas to combat the rising incidence of arson. We should make use of the American and Canadian experiences and learn both through their mistakes and successes, for although it may not appear obvious, a certain amount of successful arson suppression has been achieved.

Positive action is urgently required from all interested parties if we are going to reverse the rising rate of arson. The problem may be deeper than most of us realise, but with everyone striving toward a common goal, the situation may one day be under control.

RECOMMENDATIONS

The crime of arson is not always obvious and is sometimes only detected once an investigation has been initiated to determine the cause and origin of a fire. Detection, therefore, becomes the primary step in assessing the crime of arson, thus, it is imperative that a plan for the continuous training of fire investigators be developed.

The introduction of computers into nearly every facet of business and education has had a pronounced effect on information processing. The arson investigation process is also in need of a significant computer application that will assist in the intelligence analysis phase of criminal investigation and provide other accurate relevant statistical information and data.

The materials and methods used by arsonists to set fires often vary, but the results are the same; the destruction of public facilities, buildings, businesses, serious injury or death and economic loss to the community. However, by close continuous co-operation and co-ordination among all sectors of the community a programme which will

effectively reduce the incidence of arson can be evolved.

1. Responsibility

   There should be close liaison and co-operation between the police and fire services, the insurance industry and other interested bodies in the public and private sectors to define the responsibilities of those concerned with the problem of arson.

2. Legislation

   There is a need to formulate uniform effective laws and regulations throughout Australia. Model arson and insurance immunity legislation should be developed to deter arson for profit.

3. Terminology

   Promote the use of uniform terminology in relation to arson and incendiarism by all involved agencies in Australia.

4. Reporting

   Standardise all fire and arson reporting forms throughout Australia to improve the capability to tabulate and aggregate data about incendiary fires. This would permit the use of automated data processing systems to provide accurate information on the annual cost of arson and other valuable data including frequency and type of incidents.

5. Fire Academy

   That consideration be given to the establishment of a National Fire Academy to advance the professional development of fire investigators.

   Superior training facilities could be provided at one venue for less cost;

   A suitable venue could be Mt Macedon (interest has been expressed in conducting fire courses at this venue).

   Permanent buildings could be constructed to permit practical training in arson investigation.

   The certification of fire investigators would be of value when evidence is being presented in courts of law.

Courses could be structured on a 'train the trainer' basis as at the United States Fire Academy and include new techniques of investigation, changes in departmental or business policies and procedures, pertinent court decisions etc.

Suitably skilled lecturers could be seconded for the duration of the courses from state police and fire departments.

6. Training Programmes

Police and fire authorities should develop and institute training programmes for personnel involved in fire cause determination, for the successful detection of arson and subsequent conviction of offenders requires highly skilled investigators with special expertise in this field.

All police officers involved in fire investigation should be trained in both the technical aspects of fire and fire cause determination.

Consideration should be given to all police fire investigators completing a recruit firemans training course. The knowledge of fire terminology and of the methods used to extinguish fires can be invaluable to an investigation.

Fire investigators should be encouraged to attend all seminars and courses relative to fire cause determination and incendiary fires.

All firemen should be trained extensively in the art of detecting a possible incendiary fire and preserving evidence until the arrival of the fire investigator. The appropriate actions and observations of the first personnel at a scene are critical in devloping a successful arson investigation and prosecution.

7. Prosecutors and Judges

Courses similar to those conducted in Canada should be held to advise prosecutors and judges of the technical aspects of fire cause determination and investigation.

8. Staff and Equipment

Fire Investigation Units should be adequately staffed, equipped and suitably clothed for the effective detection and investigation of incendiary fires.

Fully equipped vehicles should be available to Fire Investigation Units to minimise the response time to a fire scene.

Observations made while the fire is in progress may greatly assist in cause and origin determination. Observations of any suspicious actions on the part of spectators can be made and evidence preserved and collected.

9. Overhaul

Discussions should be conducted with fire authorities to limit to the greatest possible degree the amount of 'overhaul' operations performed immediately following a fire. This process can seriously hinder efforts to reconstruct the fire scene, result in the loss of crucial evidence and hamper investigations for insurance purposes.

10. Intelligence

A computerised nationwide intelligence system containing data on known and suspected arsonists and their associates, modus operandi, unsolved arson cases etc., should be established for the information of authorised fire investigators.

11. Insurance Company Co-operation

Close liaison and co-operation should be maintained with the insurance industry to provide more disincentives to arson for profit, the avoidance of over insurance and the provision of greater access to information on insurance coverage to fire investigators.

12. Public Awareness

Institute an ongoing public education programme to educate the general public about the arson problem, promote citizen participation in reducing arson and to make the community aware that arson can result in death, injury, the destruction of public facilities and increased insurance premiums.

13. Prevention

Promote the installation of intrusion alarms, sprinklers, sprinkler-operated fire alarms, smoke detectors, better security, adequate lighting, the removal of flammable trash and the 'boarding-up' of unused buildings etc. in high risk locations.

14. Funding

Assistance from the Federal and State Governments and the insurance industry to finance training programmes and initiate a campaign of public awareness should be sought. The initial financial outlay to develop anti-arson programmes would be minimal when viewed with the annual recurring economic loss due to incendiary fires.

15. Research

Research conducted to determine the cause of fires, develop and improve investigative equipment and into the psychological behaviour and motivation of arsonists should be supported.

16. Overseas Initiatives

Although many initiatives and programmes instituted overseas to reduce arson may not have been fully proven, these programmes should be evaluated with the view to introducing similar anti-arson programmes in Australia and the development of proactive prevention strategies.

17. Arson Task Forces

Consideration be given to the formation of an Arson Task Force in each State (a task force has been established in Victoria) including representatives of Federal, State and local government, the Australian Federal Police, legal profession, insurance industry, Taxation Department, Australia Post, Housing Department, banking industry, private industry and the media.

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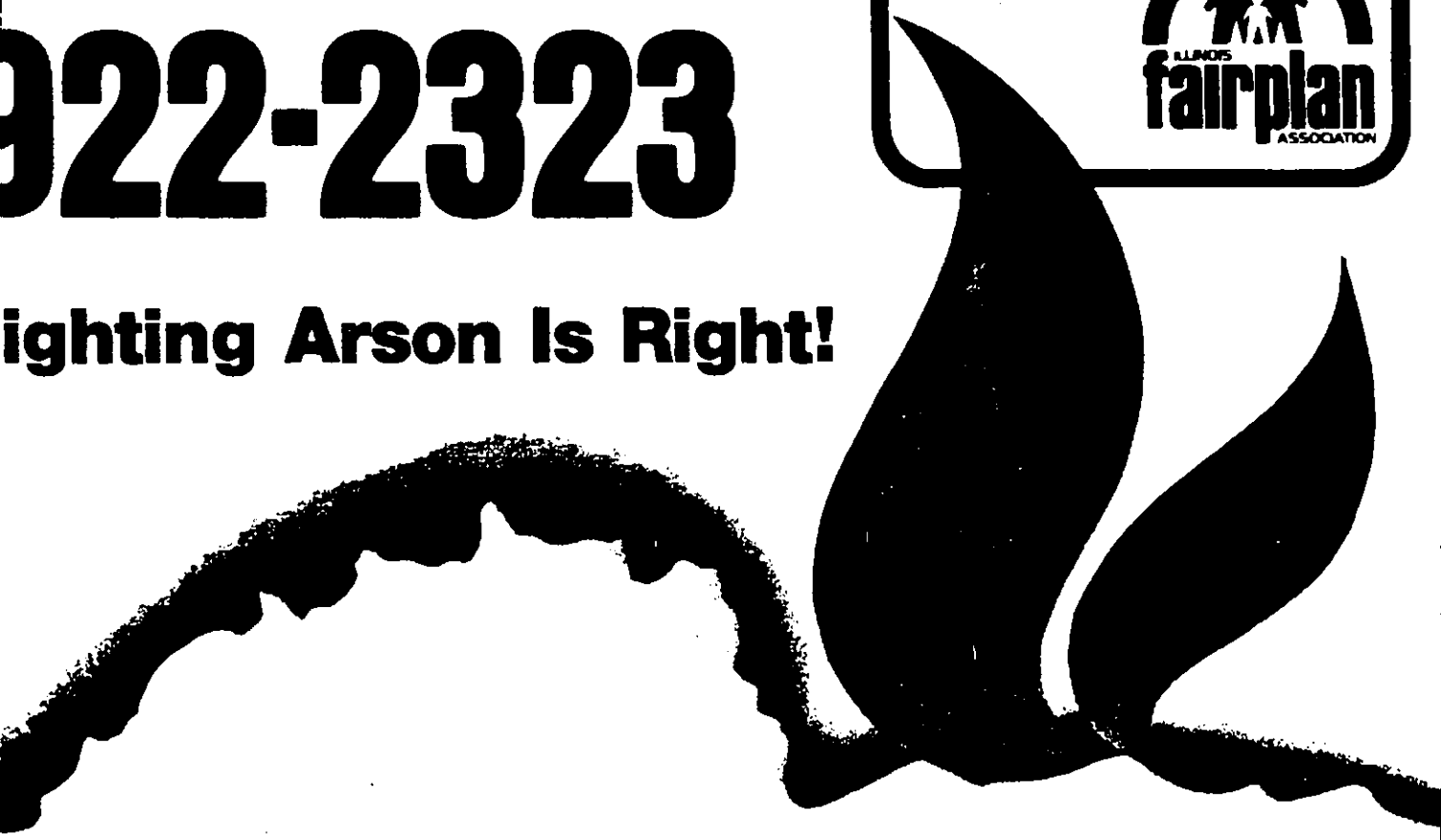

Arson Resources

Insurance Committee for Arson Control

The committee publishes a national directory, *Arson Control: How and Why, Who, What, Where* which is available for $15. This directory contains information on arson task forces, general background on national organizations, a state-by-state directory of arson control organizations, sample speech texts, and a copy of *Target: Arson*. This directory is updated regularly. Contact: Morag E. Fullilove, Secretary, Insurance Committee for Arson Control, 20 North Wacker Drive, Suite 2140, Chicago, IL 60606.

Aetna Life & Casualty

Aetna's Community Arson Awareness Program (CAAP) is a five piece anti-arson kit designed for use by community groups and other organizations concerned with safeguarding their neighborhoods. Contact: Phyllis Shafer, Corporate Communications (D-A), Aetna Life and Casualty, 151 Farmington Avenue, Hartford, CT 06156.

Aetna also distributes a 15-minute film, "Winning the War on Arson", which highlights the Seattle Arson task force and New Haven's Early Warning System. The film, with background materials and brochures, is available from the film librarian at Aetna.

Alliance of American Insurers

The Alliance has assembled an Arson Information Kit, consisting of various educational materials on arson, copies of the Model Arson Penal Law and the Model Arson Reporting Immunity Law, and guidelines on how to establish an arson award program and an arson task force. Contact: Lawrence C. Christopher, Vice President-Communications, Alliance of American Insurers, 20 North Wacker Drive, Chicago, IL 60606.

Allstate Insurance Company

Allstate has published a community action guide, *Put the Heat on the Arsonist*, which offers details on organizing a community anti-arson program. Allstate will provide community programs with pamphlets, fact sheets, posters, and a slide presentation for speakers. Allstate can also arrange a loan of Fire Information Field Investigation (FIFI) training kits for fire departments. Contact: Ralph Jackson, Loss Prevention Manager, Allstate Insurance Company, Allstate Plaza—F-3, Northbrook, IL 60062.

Factory Mutual System

The Factory Mutual System publishes a pocket guide to arson investigation which includes information on the various stages of an alarm. Contact: Order Processing Department, Factory Mutual Engineering, 1151 Boston-Providence Turnpike, Norwood, MA 02062.

Foremost Insurance Company

Foremost Insurance Company's "Fire Hurts" program includes brochures and related information regarding mobile home arson. Contact: Colleen Fenrich, Public Relations, Foremost Insurance Company, 5800 Foremost Drive S.E., P.O. Box 2450, Grand Rapids, MI 49501.

Insurance Crime Prevention Institute

ICPI has available "Anatomy of an Arson", a training film on the cause and origin of set fires. Contact: Public Relations Department, 15 Franklin Street, Westport, CT 06880.

Industrial Risk Insurers

IRI publishes a pamphlet, "Arson Alert", which discusses how to protect property against arson. Contact: Industrial Risk Insurers, 85 Woodland Street, Hartford, CT 06102.

Hartford Insurance Company

The Hartford has developed an arson news media kit for the U. S. Fire Administration to be used by local and state arson task forces. Contact: John Lynch, Office of Planning and Education, U. S. Fire Administration, Federal Emergency Management Agency, Washington, D. C. 20472.

Professional Insurance Agents

The Professional Insurance Agents publish an arson awareness program, "Be Concerned...Don't Get Burned", which includes public service announcements, booklets, posters and speeches. Contact: Dennis Jay, Communications, Professional Insurance Agents, 400 North Washington Street, Alexandria, VA 22314.

State Farm Fire and Casualty Company

State Farm has produced three anti-arson booklets: "Touched Off by Human Hands" for firefighters, "The Iceberg Crime" for police officers, and "Verdict: Guilty of Burning" for prosecutors. Contact: David Hurst, Public Relations, State Farm Insurance Companies, One State Farm Plaza, Bloomington, IL 61701.

National Automobile Theft Bureau

The NATB has a *Manual for Investigating Auto Fires* and a slide training film available for insurance adjusters and law enforcement officers. Contact: National Automobile Theft Bureau, 390 North Broadway, Room 350, Jericho, NY 11753.