

Occupational Health and Safety Enforcement in Australia

**A Report to the
National Occupational
Health and Safety Commission**

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Preface

This is a study of enforcement of occupational health and safety laws in Australia. To date the agencies with primary responsibility for this enforcement have been in the states and territories. Our purpose in this research is to provide information and policy analysis which might in some small way be useful to those state and territory agencies which wish to do their job better.

The fact that our work is directed to this end should not be taken to imply that we are committed to the view that the states are the most appropriate level of government for occupational health and safety enforcement. In fact, our research suggests that it is the large states which cope best with the need for firm occupational health and safety enforcement, implying that there may be economies of scale in regulatory effectiveness. Tasmania, for example, is not only incapable of mounting a credible threat of prosecution, it lacks the breadth of expertise adequately to assess certain kinds of safety risks — for example, those attending oil exploration in Tasmanian waters of Bass Strait. In the Northern Territory, the Director of the Industrial Safety Division complained that he has in Darwin only one inspector with expertise in cranes and one expert in lifts. If either of them falls ill, he is in trouble.

These are the kinds of reasons which lead us to suspect that the A.C.T.U. may have been correct in arguing in its submission to the Interim National Occupational Health and Safety Commission that the permanent Commission should become a federal inspectorate along the lines of the Occupational Safety and Health Administration in the United States (A.C.T.U., 1984: 2). Similarly, the then Chairman of the Australian Law Reform Commission may have been justified in making the following remarks to a National Safety Council seminar on 27 July, 1984:

For all this, I do believe that thought should be given before too long to the possibility of Federal legislation for minimum standards in occupational health and safety throughout Australia. My reasons include:

- the difficulty of securing agreement on appropriate uniform standards where so many bodies and so many differing and even conflicting interests must concur and where the history and traditions of our Federation are so discouraging;
- the concern of the 'flight of capital' by which differentials in safety standards may be played upon by particular States or jurisdictions to attract investment in business and industry in a way that discourages the setting of appropriate and just standards that defend health and safety at work;
- the concern that having to get agreement of so many people in such a large body (the National Occupational Health and Safety Commission) might sometimes become a formula for inaction, delay, prevarication and timidity when what is needed is action, swift and speedy, bold resolution and firm decisions;
- finally, there is the national interest. It is surely not in the national interest that there should be *significant* differentials in the laws that protect and safeguard the worker health and safety in different parts of our country. Although it is true that a wave of relevant legislation is passing through some of the States, much of it similar, no action is contemplated in other parts of the Commonwealth.

This differential treatment of workers, their health and safety in different parts of the nation is difficult to justify at least when a proper constitutional basis appears for uniform laws enacted by the Federal Parliament (Kirby, 1984).

Irrespective of the rights and wrongs of these views, the Commonwealth has made it quite clear that it is not interested in taking over any occupational health and safety enforcement responsibilities from the states. Besides, there is evidence of a stronger commitment to occupational health and safety reform in some states today than one might ever have expected from a commonwealth authority. The immediate task is to make state and territory enforcement work better. It is to this task that we hope our study will make a modest contribution.

Our work has been made possible by a grant from the Commonwealth Department of Employment and Industrial Relations, by institutional support from the Australian Institute of Criminology and the Australian National University and by gracious cooperation from all the major occupational health and safety agencies in Australia except the New South Wales Department of Industrial Relations. These agencies are listed in Chapter 2; our thanks go to all of them.

Thanks for special assistance also go to David Biles, Neil Gunningham, Richard Harding, Debra Rickwood, Kerri Rowley and Jack Sandry.

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Chapter 1

The Problem

A revealing irony about Australian society is the fact that while governments are able to calculate with considerable accuracy the monthly average number of working days lost in industrial disputes, comparable information on the number of workers killed on the job is simply not available.

What fragmentary data have been compiled suggest that the toll of death and injury in Australia's workplaces is a national scandal. In one recent year in the state of NSW alone, 135 fatalities in the course of employment were the subject of cases under the state's Workers' Compensation Act. Non-fatal injuries reported to the Workers' Compensation Commission (involving 3 or more days' incapacity) in that year totalled 103,927. These involved over 9,000 fractures, over 16,000 contusions and crushings, over 16,000 lacerations and over 300 amputations and enucleations, amongst a number of other injuries including hernias, concussions, burns and dislocations. It should be noted that these figures pertain to one state in one year, and do not include deaths or injuries sustained by the self-employed or uninsured (Workers Compensation Commission of New South Wales, 1984).

Moreover, information on what our regulatory bodies do to enforce occupational health and safety laws has been a mystery to the Australian public. This mystery has fuelled a lack of confidence in the regulatory process at even the highest levels of public life:

... the body of regulations we do have is barely enforced, due to under-funding and under-manning of the inspectorates. How many prosecutions are carried out by these inspectorates, and for what offences? We have no way of knowing (R.J. Hawke, 1982a: 18).

In the Maitland Oration I referred to the untimely and totally unnecessary deaths of Terence Murphy and Craig Beattie in September 1981. These two teenage boys in their first jobs were overcome by highly toxic fumes from a solvent

trichloro-ethylene, in a degreasing vat at the factory of Durapaint Services, Noble Park, Victoria. Their instructions were to clean out the vat but they were not told how it should be done. Nor were they warned of the deadly nature of the solvent in such a close, confined space. Their only protective gear provided by the company was a pair of boots. Later examination of the only masks available at the factory (but not to Terry or Craig), showed that the masks were of paper, designed for dust, not fumes, and were wrongly assembled anyway.

Following the Coroner's Inquest where the firm's wilful neglect was catalogued, a fine of less than \$2,000 was levied on Durapaint. A small price for the company and a totally insignificant penalty for action involving the loss of two lives (R.J. Hawke, 1982b: 2).

The first purpose of this study is to provide some answer to the question posed in the first quotation above from Mr Hawke. How important is prosecution in the regulatory strategies of occupational health and safety authorities in Australia? Secondly, we attempt to address the concern expressed in the second quotation. Are minuscule fines the only way to sanction occupational health and safety offences? In his Maitland Oration, Mr Hawke suggested that Durapaint Services should have been charged with manslaughter and he pointed to Italian initiatives to imprison negligent employers as 'a salutary step in making others mindful of their obligations' (Hawke, 1982a: 18). These are among the policy options we will consider in the final chapter of this study.

Accidents at work and occupational disease are staggering burdens on the Australian economy. They are a cause of unemployment; there is considerable anecdotal evidence of small businesses putting off workers to pay for wildly escalating workers' compensation premiums (e.g. Crowley, 1984: 37). In its final report, the Interim National Occupational Health and Safety Commission (1984: 1) concluded that 'Conservative estimates put the financial cost to the community at more than \$6 billion per year — double the more widely publicised road accident figure, an estimated \$3 billion'.

The cost to the hospitals system of coping with 2.5 million bed days per year resulting from workplace injuries is an enormous fiscal burden (Rann, 1983: 3). In July 1984, the then Chairman of the Australian Law Reform Commission, relying on a review of the evidence by Gunningham (1984: 2), has perhaps most powerfully posed the magnitude of the problem:

- a million working days a year are lost because of accidents at work;
- almost half a million people suffer incapacitating work injuries in such accidents;
- over 300 die from work-related injuries and this is almost certainly an underestimate when it is remembered that probably a third of all cancer cases are work-related, directly or indirectly;
- in most years, the numbers of days lost from occupational injury and disease is almost twice the number lost as a result of strike action — which captures so much media, political and public attention;

- for every Australian injured on the roads, about five are injured at work. (Kirby, 1984: 1-2).

The chemical disaster in Bhopal, India, in 1984, which killed more people than any previous industrial disaster in human history, showed what a mistake it is to assume that the situation is improving. The International Labour Organization recently reported that work safety in the world is deteriorating because of new technology and the introduction of up to 1,000 new chemicals a year (*Canberra Times*, 19 January 1985, p.4). Of course, the economic burden is of less importance than the human suffering arising from cases such as those taken below from the Monthly Report on Court Actions of the South Australian Department of Labour.

September 1983 v. Pape Bros. Poultry Service Pty. Ltd. 'A worker employed only 4 hours on the chicken processing premises lost several fingers on a hand when trapped in a screw auger conveyor through lack of suitable guarding. Poor instruction and supervision were also alleged. Previous conviction — Section 29'.

Fine: \$250 on one count, \$150 second count.

September 1982 v. S.A. Malting Co. Pty. Ltd. 'A worker had his leg caught in an unguarded conveyor. Later amputated in hospital. An inspector had left instructions to guard the unit prior to the accident'.

Fine: \$250.

South Australia is by no means unique, as illustrated by the Durapaint case from Victoria, cited before. In Chapter 5, we shall refer to a Western Australian accident which caused two fatalities. Two supervisors were fined \$40 each, and the company was fined \$100. Another example may be drawn from New South Wales:

March 1983. A young apprentice at Kelloggs took nine hours to die after being enveloped in steam while inside a rice cooker. His death resulted from safety violations for which the company was subsequently fined \$950.

Even repeated flagrant offences do not seem to produce a vigorous response from the justice system. The Report of the South Australian Occupational Safety, Health and Welfare Steering Committee (Vol.2, 1984, pp.14-15), for example, referred to the case of the Spic-n-Span Corporation Ltd. Following an industrial accident with a power press, this company was issued a written order that the brake press be safeguarded at all times. This was followed up by a letter of warning from the Department of Labour for non-compliance with the law. In the words of the district inspector, the company 'has shown scant regard for the warning and directions issued'. Within a few months there was another accident on the very same machine in which a worker had both thumbs crushed. A \$160 fine was imposed for the offence.

Another case which concerned the Steering Committee was the death of a 15 year old worker, who was killed when an unsafely main-

tained pressure vessel exploded, projecting him from a ledge (which, in breach of the law, had no guard rails) to the bottom of a pit. The company, A.W. Baulderstone Pty. Ltd., was fined \$300 for the offences. 'This "severe" fine was the result of a previous conviction being alleged and agreed by the defendant.' (Occupational Safety, Health and Welfare Steering Committee, Vol. 2, 1984: 1-3).

The Place of Law Enforcement in Solving the Problem

Critics of regulation assert that just because there is a large occupational health and safety problem, it does not follow that there is widespread noncompliance with health and safety laws, or that it is violations of the law rather than employee apathy or unavoidable hazards which cause accidents.

Australian data adequate to resolve either of these propositions are scarce indeed. Nevertheless, on the relatively unsystematic evidence available, it does seem reasonable to accept as an interim assumption that noncompliance with the law is widespread. In 1982, the Victorian Department of Labour and Industry surveyed compliance with regulations concerning the guarding of power presses in metropolitan Melbourne. Of 2,381 power presses in 159 premises, 1,225 (51 per cent) were in need of attention to bring them to a standard acceptable under the law (Department of Labour and Industry, 1982: 20). In 1983 the Queensland Mines Department surveyed compliance with statutory standards for stone dusting in coal mine roadways to prevent the spread of explosions. Thirty-five per cent of 1095 dust samples failed to comply with the standard prescribed by the Coal Mining Act (Queensland Department of Mines, 1983: 19).

Assuming that violations of the law are widespread, it is more difficult to assert that large proportions of accidents are due to offences rather than some other cause. American studies have variously estimated that between 10 per cent and 30 per cent of injuries are caused by violations of the Occupational Safety and Health Act (Mendeloff, 1979:86-7; for some British data, see Veljanovski, 1983: 88). Studies of fatalities, rather than more minor accidents in the mining industry, however, produce higher percentages of over 70 per cent (Braithwaite, 1985). The only study involving Australian data is of the latter type. Braithwaite (1985) found that of 39 multiple-fatality coal mine disasters (largely from the U.S., U.K. and Australia), 33 resulted in government reports which found serious safety violations at the mines. For 25 of these cases, it was found that such serious violations either caused the disaster, were among the causes, or made the disaster worse than it would have been without the violations. For only two of the disasters did the official enquiry conclude that the company concerned

had a basically good compliance system, no improvement of which could have prevented human error or forces of nature from causing the disaster. Perhaps the most adequate way to summarise the limited literature on the relationship between offending and injury is that a minority of more minor work injuries (e.g. back strains) may be due to employer criminality, while a majority of more serious incidents (notably fatalities) result from employer offences.

The research evidence is certainly sufficient to justify the common-sense conclusion that policies to reduce offending against occupational health and safety laws are of enormous social and economic importance. Chapters 2 to 7 will review the nature of such policies in Australia's major occupational health and safety regulatory bodies. Chapter 8 concludes with recommendations for improving occupational health and safety enforcement policy.

Chapter 2

The Occupational Health and Safety Agencies

THE ADMINISTRATIVE FRAMEWORK

Occupational health and safety enforcement in Australia has been, and is likely to continue to be, primarily a state responsibility. Commonwealth involvement, particularly in the domains of standard setting, research, and education is nevertheless likely to increase with the advent of the National Occupational Health and Safety Commission. So too will the Commonwealth embark upon a more active enforcement role in the A.C.T. and among Commonwealth employees throughout the country.

Even within states, occupational health and safety enforcement is extremely fragmented. A recent survey in Western Australia found that 19 government departments in that state had some type of occupational health and safety responsibilities. The single most important area is the traditional factories-type inspectorate generally found in state departments of labour and industry. These include machinery inspectorates, inspectorates for lifts and scaffolding, boilers and pressure vessels, explosives, construction safety, and general factories and shops inspectorates. In Queensland, Tasmania, Western Australia and South Australia under one administrative umbrella are found polyglot appendages with responsibility for checking compliance with occupational health laws (e.g. lead, asbestos exposures), occupational safety laws not covered by other more specialised inspectorates, arbitration inspection (to ensure payment of award wages), workers' welfare inspection (e.g. shearers' accommodation standards), and shop trading hours enforcement.

Beyond the general occupational health and safety inspectorates found in labour and industry departments, the second most important areas are mines inspectorates. Queensland and New South Wales have separate inspectorates for coal and metalliferous mines. Victoria and Western Australia, with their substantial oil industries, have separate

inspectories which have special expertise in the technology of off-shore production and exploration.

Health departments are the third major type of bureaucratic participant in workplace safety. In most states they provide a service to the factories and mines inspectorates — conducting occupational hygiene surveys, testing workers for evidence of exposure to occupational carcinogens, and the like. Secondly, in all states health departments retain direct enforcement responsibility for radiation safety. The Australian Atomic Energy Commission and the Office of the Supervising Scientist for the Alligator Rivers Region also have important responsibilities which will be discussed later.

This study will cover these three broad areas of regulation. As such, it covers most of the enforcement action in occupational health and safety, but by no means all of it. Regrettably, we neglect the activities of state electricity authorities in controlling electrical safety, specialist forestry safety inspectorates, agricultural chemical regulation controlled by departments of primary industry, and some other quite important areas.

In all jurisdictions except the Northern Territory and Tasmania, a rationalisation of occupational health and safety under a single authority is being considered. These developments are most advanced in New South Wales where the Department of Industrial Relations has already taken over the other two major areas from Health (except radiation control) and Mines. In all other states, Mines Departments seem to be successfully resisting a takeover of their safety responsibilities. In the Northern Territory, the Department of Mines and Energy oversees health and safety not only in mines, but in all workplaces.

It is not the purpose of this study to review Australian law on occupational health and safety. This has been more than adequately done recently by Gunningham (1984) and Merritt (1984). Nevertheless, it must be understood that in the process of administrative amalgamations, major revisions of multitudinous occupational health and safety laws under a single enabling statute has already occurred in New South Wales and is in progress in the other Labor states. The thrust of both the administrative and legal rationalisations is to respond to the critique taken from the British Robens Report (Robens, 1972) that occupational health and safety is characterised by too much law administered by too many authorities. Beyond this, the new laws are likely to contain some modest reforms — statements of general duties, more flexible improvement and prohibition notices, requirements for written management safety and health policies, and provision for employee safety representatives and management-union safety committees. Hopefully, the data in this report will in some small way inform deliberations on both the administrative and legislative rationalisations during this historic period of occupational health and safety reform.

DATA COLLECTION

The goal of this research was to explore variation in enforcement strategy across the most important occupational health and safety regulatory authorities in Australia. As this work is part of a larger study of business regulation in Australia, in a subsequent book we will compare and contrast occupational health and safety enforcement policy with that in other domains of business regulation (consumer affairs, environmental protection, corporate affairs, food standards, etc.). This wider study was based on interviews with 111 government authorities with regulatory responsibilities.

Our basic methodology included interviews with senior management of regulatory authorities, analysis of relevant statutes, and collection of statistics and written policies on enforcement activities. The 40 occupational health and safety authorities where we conducted interviews are listed below:

General Occupational Health and Safety Inspectorates

Victoria, Ministry of Employment and Training;
 Queensland, Occupational Safety Division, Department of Employment and Industrial Affairs;
 Queensland, Industrial and Factories and Shops Inspectorate, Department of Employment and Industrial Affairs;
 South Australia, Industrial Safety Division, Department of Labour;
 Western Australia, Department of Industrial Affairs;
 Tasmania, Department of Labour and Industry;
 A.C.T., Technical Services Branch, Department of Territories;
 Northern Territory, Industrial Safety Division, Department of Mines and Energy.

Mines Department Inspectorates

Victoria, Oil and Gas Division, Department of Minerals and Energy;
 Victoria, Mines Division, Department of Minerals and Energy;
 Queensland, Chief Inspector of Coal Mines;
 Queensland, Chief Inspector of Explosives;
 Queensland, Chief Inspector of Metalliferous Mines;
 South Australia, Department of Mines and Energy;
 Western Australia, Petroleum Division, Department of Mines;
 Western Australia, State Mining Engineer, Department of Mines;
 Tasmania, Department of Mines;
 Northern Territory, Mining Division, Department of Mines and Energy.

Occupational Health

Queensland, Division of Public Health Supervision, Department of Health and Medical Services;

South Australian Health Commission;
 Western Australia, Department of Health and Medical Services;
 Tasmania, Department of Health Services;
 A.C.T. Health Authority;
 Northern Territory, Department of Health.

Radiation Safety

New South Wales, Radiation Health Services Branch, Department of Health;
 Victorian Health Commission, Radiation Control;
 South Australian Health Commission, Radiation Control;
 Tasmania, Department of Health Services, Radiation Control;
 Australian Atomic Energy Commission;
 Regulatory Bureau, Australian Atomic Energy Commission;
 Office of the Supervising Scientist for the Alligator Rivers Region.

Miscellaneous

National Occupational Health and Safety Commission;
 Arbitration Inspectorate, Commonwealth Department of Employment and Industrial Relations;
 Ship Safety Branch, Commonwealth Department of Transport;
 Maritime Services Board, New South Wales;
 Office of Road Safety, Commonwealth Department of Transport;
 Flight Standards Division, Commonwealth Department of Aviation;
 Metropolitan Waste Disposal Authority, Sydney;
 Environmental Contaminants Division, Department of Arts, Heritage and Environment.

The only occupational health and safety authority which refused to cooperate with our research was the New South Wales Department of Industrial Relations.

About six weeks in advance of our interviews with the above authorities, we sent a written list of the questions we intended to ask. By the time of our arrival the respondent was able to ascertain answers to questions beyond his or her direct experience from relevant parts of the organisation. In many cases, when we arrived a senior officer provided us written responses to the questions which had been prepared by a variety of more junior officers.

Our initial approach requested a three hour interview, but where written answers were provided, two hours were generally sufficient. On the other hand, in the minority of cases where preparatory work had not been done, some visits lasted four hours initially and required a follow-up visit, telephone calls or correspondence. In fact, at least some follow-up correspondence to tidy up details which had not been resolved in the interview was required in a majority of cases.

Both researchers were present for all interviews. The reasons for the desirability of having two interviewers with this kind of research have been detailed elsewhere (Braithwaite, 1985a). They include superior rapport, more accurate note taking, better coverage of topics with a semi-structured schedule, and reliability. Rarely were we confronted with only one respondent. In some cases our senior respondent surrounded himself with as many as seven more junior officers to assist with answering questions. Whilst our initial intention was to accept interviews only with the head of the agency,¹ we soon learned that this was a misguided intention. In almost half the interviews we did secure an interview with the head of the agency. We felt that these were generally not as successful as the remaining interviews which were dominated by an officer on the second most senior level in the agency. These latter officers were generally better prepared and more familiar with the middle-range policy issues which were the focus of our questions. Even when the head of the agency was present, it was often his or her deputies who did most of the talking.

Interviews were taped, though all respondents availed themselves of the opportunity to turn the recorder off from time to time to make comments off the record. Where indented quotations in the book have no other citation, they are statements taped during the interviews.

As a validity check, the draft report was sent to departments whose interviews were used in the chapters, as well as to unions, industry associations and university based researchers.

INSPECTORIAL RESOURCES OF THE AGENCIES

Table 1 shows that there is wide variation in the resources currently available for occupational health and safety enforcement across jurisdictions. The Northern Territory is by far the best resourced jurisdiction. If general occupational health and safety and mine safety inspectors are combined, the Territory has far fewer workers per inspector than any of the states. It also has far fewer manufacturing establishments per general occupational health and safety inspector and fewer miners per mine safety inspector than any other jurisdiction. Actually, the latter situation is understated by the existence of an effective Commonwealth duplication of some local mine inspection resources in the form of the staff of the Office of the Supervising Scientist for the Alligator Rivers Region. The latter monitors the safety and environmental impact of uranium mining in the Northern Territory.

The worst resourced is the Australian Capital Territory. In the A.C.T. there are 10,200 workers per inspector. This may be partly compensated for by the small number of significant manufacturing establishments in the A.C.T. as reflected in the much lower figure for manufac-

TABLE 1
States and Territories of Australia
Occupational Health and Safety Inspectors (1984) by Jurisdiction

	General Health and Safety Inspectors	Mine Safety Inspectors	Total Inspectors	Workforce in full-time employment*	Workers per Inspector	Manufacturing establishments	Manufacturing establishments per General Health and Safety Inspector**	Mining Employees***	Mining employees per mine inspector
NSW	222	19	241	1,804,300	7,487	10,477	47	30,600	1,611
VIC	177	14	191	1,414,800	7,407	8,393	47	6,900	493
QLD	178	33	211	827,500	3,922	3,438	19	18,200	552
SA	53	15	68	440,600	6,479	2,102	40	6,000	400
WA	81	38	119	469,100	3,942	2,499	31	25,200	663
TAS	34	8	42	139,500	3,321	528	16	3,900	488
ACT	9	0	9	91,800	10,200	150	17	—	—
NT	25	27	52	51,700	994	118	5	3,800	141
TOTAL	154	933	951	5,239,400	5,616	27,705	36	94,800	616

* Australian Bureau of Statistics, *The Labour Force, Australia*, Canberra, October 1983, p.13.

** Excludes establishments with fewer than four persons. Australian Bureau of Statistics, *Manufacturing Establishments. Summary of Operations by Industry Class*, 1982-83, p.20.

*** Australian Bureau of Statistics, *Civilian Employees*, February 1980.

turing establishments per inspector.² Not far behind are New South Wales and Victoria where inspectors are almost equally thinly spread on the ground. The situation in Queensland is far worse than Table 1 suggests because Industrial and Factories and Shops Inspectors spend a relatively small proportion of their time on occupational health and safety, industrial award compliance being their major preoccupation.

The Northern Territory is clearly the jurisdiction best endowed with mine safety inspectors. New South Wales has by far the worst situation with regard to miners per mine safety inspector.

Mines inspectors have a much stronger presence in the workplace compared with general occupational health and safety inspectors, as Table 1 shows. There are 5,616 workers per safety inspector in Australia; for mining employees alone, there are 616 workers per mine inspector. Of course there is no necessary connection between the quantity and quality of inspection, though by Chapter 5 we will have concluded that mine inspectorates do have both quantitative and qualitative superiority over general inspectorates. We turn now to the extent to which the various inspectorates employ criminal sanctions in the course of their work. Where we use the term state agencies in this report, we refer to state and territory agencies.

Chapter 3

Prosecutions by General Occupational Health and Safety Inspectorates

This chapter compares and contrasts the circumstances in which general occupational health and safety inspectorates seek to solve compliance problems by prosecuting offenders. The data which follow relate to successful prosecutions (convictions) to the exclusion of unsuccessful proceedings launched. In circumstances where we were able to ascertain that a number of closely related charges were laid at the same point in time against the same defendant, this was counted as one case. Where both a company and an individual were convicted for the same offence, these were counted as separate defendants and separate convictions.

There is no sense in which conviction data are presented as an indication of the level of offending. It has already been argued on the basis of some data in Chapter 1 that the numbers of occupational health and safety offences perpetrated every year are enormous, so enormous in fact that it is not unreasonable to conceive of there being a virtually infinite number of possible offences to prosecute in any jurisdiction. Numbers of convictions therefore tell us nothing about the level of offending, but a lot about the propensity of regulatory agencies to prosecute.

New South Wales

Data on the number of convictions in New South Wales were obtained solely from a reading of annual reports of the Department of Industrial Relations. Because this department refused to cooperate with the research, dialogue over the meaning of the statistics has not been possible.

Some confusion arises from overlapping responsibilities with the Mines Department for some of the period covered by Table 2. In

1975-76, before the Department of Industrial Relations assumed total responsibility for the Dangerous Goods Act, there were infrequent prosecutions in this area by the Mines Department. Mine safety generally was taken over by the Department of Industrial Relations from the Mines Department in 1982. Mine safety convictions will be discussed separately in Chapter 5.

TABLE 2
New South Wales, Convictions and Average Fines
(Excluding Mines) — Department of Industrial Relations

	Factories, Shops and Industries Act		Construction Safety Act*		Dangerous Goods Act		Total Convictions
	No.	Avg. Fine \$	No.	Avg. Fine \$	No.	Avg. Fine \$	
1975-76	192	65	61	46	4	—	257
1976-77	76	157	45	54	8	—	129
1977-78	119	134	26	74	6	—	151
1978-79	117	131	53	87	4	—	174
1979-80	166	395	27	116	2	—	195
1980-81	182	—**	26	181	3	400	211
1981-82	146	—	19	204	9	451	174
1982-83	133	—	56	182	7	264	196
1983-84	171	—	45	—	—	—	216
TOTAL	1,302		358		43		1,703

* Scaffolding and Lifts Act, 1912 prior to 1978-79

** Data unavailable

Source: Annual Reports, Department of Industrial Relations

Convictions under the Factories, Shops and Industries Act account for 76 per cent of those listed in Table 2. Several annual reports state that the main areas of prosecution under this act were for operating unregistered shops or factories and for maintaining unguarded or unfenced machinery. However, another problem with these statistics for the purposes of this study is that a substantial but unknown number of the convictions are for shop trading hours offences. Clearly, these are not occupational health and safety matters.

For all their limitations, the data in Table 2 provide little evidence of a consistent rise or fall in the number of prosecutions between 1975 and 1983. The figures move both up and down across time. Average fines show a consistently upward trend from a very low base.

New South Wales is the only jurisdiction with any semblance of a

TABLE 3
Victoria, Convictions and Average Fines
(Excluding Mines)

	Explosives Act	Inflammable Liquids Act	LPG Act and Liquefied Gases Act	Occupational Health Division convictions (Health Act and Entry into Confined Spaces Regulations)	Failing to guard dangerous machinery		Lifts and Cranes Act		Failing to report accident	
					No.	Av. Fine \$	No.	Av. Fine \$	No.	Av. Fine \$
1970	—*	2	0	0	58	71	4	48	0	—
1971	1	0	0	0	—	—	—	—	—	—
1972	13	2	0	0	—	—	—	—	—	—
1973	10	1	0	0	—	—	—	—	—	—
1974	6	0	0	0	107	84	13	113	14	25
1975	8	2	0	0	117	90	13	90	14	26
1976	23	3	0	0	97	114	12	96	12	28
1977	19	4	0	0	56	126	3	20	10	34
1978	8	5	0	0	67	210	2	20	16	31
1979	5	3	0	0	89	249	1	100	13	97
1980	5	6	0	0	93	383	3	67	20	96
1981	0	0	0	2	94	208	2	300	14	154
1982	0	0	1	2	133	285	0	—	11	128
1983	4	0	0	2	106	304	11	91	14	98
TOTAL	102	28	1	6	1,017	200	64	94	138	72

* data unavailable

Source: Department of Employment and Training

prosecution program for occupational health (as opposed to occupational safety) offences. The Industrial Health Section of the Division of Inspection Services initiated nine prosecutions for occupational health offences in 1982-83. Directions were also given in 10 cases to remove employees clinically affected by lead from the lead process.

Victoria

Like New South Wales, the Victorian data show no consistent tendency for prosecution activity either to increase or to decrease over the past decade, while the average size of fines has increased in a manner very similar to New South Wales (Table 3).

A more detailed breakdown is available for the Victorian convictions, however. Table 3 shows that there was a decrease in prosecutorial activity in some areas between 1970 and 1983. Convictions under the Explosives Act, the Inflammable Liquids Act, Lifts and Cranes Act, Boilers and Pressure Vessels Act and for operating unregistered factories all declined. These trends were insufficient substantially to have an impact on overall trends because 71 per cent of all Victorian convictions were for failures to guard dangerous machinery.

This dominant area of activity dropped off in 1977 and 1978 only to pick up again in the 1980s. A small number of convictions by the Occupational Health Division in the 1980s was also a new area of activity compared with the 1970s.

It is notable that not only does failing to guard dangerous machinery dominate the number of convictions, but the average fines for this kind of offence are more than twice as high as for any other offence type for which data are available. More than 90 per cent of prosecutions initiated result in a conviction, with fewer than four per cent resulting in acquittal.

Such comparison as is possible between Tables 2 and 3 suggests a roughly similar level of convictions between Victoria and New South Wales, especially after taking account of the larger numbers of industrial premises in New South Wales. The most significant difference lies in the almost total absence of construction safety prosecutions in Victoria, while New South Wales averaged 39 convictions per year under its Construction Safety Act. The reason for Victoria's neglect in this area is purely and simply a lack of legislation. At the time of writing, the 1979 Construction Safety Act still awaits proclamation as the Cain government continues to ponder its attitude to this legislation written under its predecessor. Meanwhile, a construction safety inspectorate which conducted 2,300 inspections in 1983 never prosecutes any of the life-threatening practices it discovers.

Queensland

Apart from mines, occupational health and safety enforcement in Queensland is the responsibility of two quite separate inspectorates within the Department of Employment and Industrial Affairs — the Industrial and Factories and Shops Inspectorate and the Division of Occupational Safety. The latter has relatively narrow responsibilities for machinery safety and construction safety; the former has enormously broad responsibilities for all other occupational safety matters and occupational health matters as well as approval of building plans for factories, shops and offices, arbitration inspection, workers accommodation inspection, shop trading hours, and an assortment of more minor responsibilities.

The Queensland Industrial and Factories and Shops Inspectorate is without doubt, one of the most prosecutorial business regulatory agencies in Australia. Between 1976 and 1984, its modest staff of 121 initiated 7,003 prosecutions, though 2,631 of these were subsequently withdrawn and 241 were unsuccessful. Of the 1,195 prosecutions in 1982-83, 684 were for failure to renew registrations of factories and shops. In 1983-84 there were two such prosecutions. Other years have seen no prosecutions at all in this area and over 600 prosecutions for shop trading hours breaches or for the underpayment of wages to workers. In other words, this inspectorate operates by alternating prosecution blitzes between different areas among its vast array of responsibilities. There is no such thing as an average year. There are an enormous number of prosecutions each year, but often in totally different areas from the previous year.

This should not lead one to underestimate the magnitude of these crackdowns. In 1982-83 there were more prosecutions for operating unregistered factories and shops in Queensland than there had been in New South Wales and Victoria *combined* over the previous *decade*. This of course is a kind of technical or paperwork occupational health and safety offence rather than a substantive one.

For all the prosecution activity undertaken by this inspectorate, substantive occupational health and safety prosecutions are virtually non-existent. We were told that there had been three in the twelve months prior to our visit 'and that's more than usual.' Prosecutions under the Asbestos Rule, the Lead Rule, and the Hearing Conservation Rule were unheard of.

Thus, as far as this inspectorate is concerned, tabulating the number of convictions would give a very misleading impression indeed. It is an extraordinarily prosecutorial agency, but most of the litigation is not in the occupational health and safety area. Nevertheless, there are very large numbers of prosecutions for failure to renew factories and shops registrations which attract very low fines. The average fine for all convic-

tions in 1982-83 was \$39. Substantive occupational health and safety prosecutions by this inspectorate are exceedingly rare.

The picture is very different with the Occupational Safety Division. As Table 4 shows, there are two areas of enforcement relevant to this study, construction safety and machinery safety. There have been in addition an average of 183 prosecutions a year over the past decade for failure to pay fees associated with occupational safety permits or certificates.

TABLE 4

Queensland, Prosecutions Launched by the Division of Occupational Safety, Department of Employment and Labour Relations

	Construction Safety	Machinery Safety
1973-74	49	134
1974-75	26	116
1975-76	27	76
1976-77	49	101
1977-78	41	88
1978-79	67	119
1979-80	114	109
1980-81	70	148
1981-82	79	161
1982-83	89	246
1983-84	56	15

Source: Department of Employment and Labour Relations.

Unfortunately, the data obtainable from the Division of Occupational Safety were limited to prosecutions launched, without any indication of how many of these were unsuccessful apart from the fact that of the 145 construction safety prosecutions between 1982 and 1984, only eight were unsuccessful.

Nevertheless, the data are sufficient to show a relatively high level of enforcement activity in the construction safety area. Irrespective of how many prosecutions led to a conviction, it seems clear that Queensland launched more construction safety prosecutions than New South Wales and Victoria combined over the past decade. Moreover, the level of enforcement activity is substantially higher in the 1980s than in the 1970s.

Machinery safety prosecutions are a mixed bag. The majority (77 per cent in 1982-83) have been for offences under the Motor Vehicles Safety

Act, though this responsibility was lost to the Department of Transport in 1983. This is part of the explanation for the dramatic drop in machinery safety prosecutions for 1983-84. These prosecutions were of two main types — for the use of commercial motor vehicles without a certificate of inspection, and for breaches in relation to the issuance of roadworthiness certificates (many of them by used car dealers). Clearly, most of the latter are not occupational health and safety prosecutions.

In terms of pure machinery safety offences as these would be regarded in New South Wales and Victoria (mainly failure to guard dangerous machinery), all we know is that there were 89 prosecutions in the most recent three years. In both absolute and per capita terms, this certainly suggests a lower level of prosecution than in Victoria, but it may not be a markedly different level of enforcement in this area compared to New South Wales.

Overall, the situation seems to be one of a higher per capita and absolute level of prosecution in Queensland for technical or paperwork offences and for construction safety offences than for any state, but for other substantive occupational health and safety offences, a lower level of prosecution per capita than in New South Wales and Victoria.

South Australia

The Industrial Safety and Regional Services Division of the South Australian Department of Labour has also had responsibility for a variety of areas of enforcement beyond occupational health and safety. Between 1978 and 1983 it was responsible for 134 convictions related to its arbitration inspectorate functions and for 52 shop trading hours convictions. However, unlike its Queensland counterpart, substantive occupational health and safety matters have constituted the main area where convictions have occurred.

South Australia has a good record of success in the courts in occupational health and safety matters, losing only four of 170 cases between 1978 and 1983. The conviction data are presented in Table 5.

Unlike the other states, South Australia shows a decline in the level of enforcement since 1978. More remarkably, the average level of fines was higher in 1978 than in every subsequent year. South Australian employers in the 1980s have less to worry about from occupational health and safety enforcement than they did six or seven years ago.

As in Victoria and New South Wales, the major area for prosecutions is for failure to guard dangerous machinery. Forty per cent of convictions were for this type of offence. Unlike the situation in Victoria, the average fine for failure to guard dangerous machinery was \$185, slightly lower than the average for all occupational health and safety convictions. There was only one occupational health conviction in South Australia between 1978 and 1984.

A comparison of Table 5 with the data for the other three states discussed so far indicates that, particularly in the 1980s, the level of enforcement is very much lower, both in absolute and per capita terms.

TABLE 5
South Australia, Convictions and Average Fines for
Occupational Health and Safety Offences, Department of Labour

	Convictions	Average Fines \$
1978	39	241
1979	34	172
1980	33	213
1981	25	168
1982	18	200
1983	17	201
1984	27	189
TOTAL	193	200

Source: Department of Labour

Western Australia

Over the past decade Western Australia has had three separate enforcement inspectorates - the Machinery Safety, Construction Safety, and Factories and Shops Branches in the Department of Industrial Affairs. The latter has been similar to its counterparts in Queensland and South Australia in enforcing a variety of factories and shops laws beyond occupational health and safety. Of the 762 convictions initiated by the Factories and Shops Branch between 1973-74 and 1983-84, 618 were for trading hours offences. Table 6 lists only the convictions obtained by the Factories and Shops Branch under the Health, Safety and Welfare Regulations.

It is clear from Table 6 that construction safety has been the only area of substantial prosecutorial activity in Western Australia over the past decade and even the activity in this area was more than halved in 1981-83. Prior to the recent drop in prosecutions, Western Australia had clearly the highest level of construction safety convictions per capita.

For all types of occupational health and safety convictions, however, between 1981 and 1983 Western Australia's enforcement declined to a level almost as low as in South Australia, and much lower than in the three main eastern states. The frequency of prosecution for machinery safety matters is strikingly low. Even South Australia had five times as

many machinery safety convictions as Western Australia between 1978 and 1983.

No data are available on the average fines imposed by Western Australian courts for occupational health and safety offences. The Western Australian Department of Industrial Affairs has a 90 per cent conviction rate; nine of the remaining 10 per cent of prosecutions result in withdrawal rather than acquittal by the court.

TABLE 6

Western Australia, Convictions for Occupational Health and Safety Offences, Department of Industrial Affairs

	Factories and Shops Branch	Machinery Safety Branch	Construction Safety Branch	Total
1973-74	1	—	25	—
1974-75	2	—	53	—
1975-76	4	1	21	26
1976-77	5	1	40	46
1977-78	13	2	41	56
1978-79	6	2	50	58
1979-80	5	6	46	57
1980-81	3	2	54	59
1981-82	3	0	21	24
1982-83	4	2	15	21
TOTAL	46	16	366	

Source: Department of Industrial Affairs.

Tasmania

Tasmania has a far lower level of occupational health and safety enforcement than all of the larger states even on a per capita basis. There have been only 10 convictions resulting from offences detected by the Department of Labour and Industry industrial safety, health and welfare inspectorate in the last 10 years for occupational health and safety offences (Table 7).

This is an average of one conviction per 25,000 inspections. It certainly bears out the statement in a recent Department of Labour and Industry Annual Report that 'Prosecutions are exceptional in administering the legislation because of the long standing policy of persuasion rather than compulsion' (1982: 12). The average fine for the 10 convictions was \$102. The 10 cases actually related to 16 counts, so the average fine per offence was only \$63.

TABLE 7**Tasmania, Convictions for Occupational Health and Safety Offences, Department of Labour and Industry**

1975	1
1976	0
1977	1
1978	1
1979	1
1980	0
1981	1
1982	1
1983	1
1984	3
TOTAL	10

Source: Department of Labour and Industry.

The A.C.T.

The Technical Services Branch of the Department of Territories was unable to provide us with any data on occupational health and safety prosecutions. They were simply able to make the observation that there were probably 'about two a year'. The A.C.T. Trades and Labour Council has doubts; two may be an exaggerated figure. A significant prosecution program we were told by the Chief Inspector would be futile because so many of the regulations for which the inspectors were responsible provided for maximum penalties of only \$100.

The Northern Territory

For four of the last five years, the Northern Territory would seem to have had the very low level of litigation characteristic of the A.C.T. and Tasmania (Table 8). In 1981-82, however, there were 18 convictions spread across a wide range of areas of compliance — four for failure to comply with an inspector's direction, two for failure to guard dangerous machinery, two for failure to report accidents, two for failing to answer questions truthfully, two for having unlicensed operators, one explosives offence, and five miscellaneous offences. This was a year in which a new chief inspector was appointed with a new injection of staff resources. It is not clear why such a relatively high level of enforcement persisted for only one year before a return to a policy of very infrequent prosecution.

TABLE 8

**Northern Territory, Convictions and Average
Fines for Occupational Health and Safety Offences,
Industrial Safety Division
Department of Mines and Energy**

	No.	Av. Fine \$
1979-80	2	547
1980-81	2	630
1981-82	18	392
1982-83	4	650
1983-84	3	2,225
TOTAL	29	644

Source: Department of Mines and Energy

TABLE 9

**Northern Territory, Convictions (1979-80 - 1983-84)
for Industrial Safety Division, by Type of Offence**

	No.	Av. Fine \$
Failure to comply with direction	8	924
Failure to report accident	4	1,156
Unlicenced	4	463
Explosives offences	3	783
Failure to guard dangerous machinery	2	500
Failure to answer truthfully	2	300
Other	6	143
TOTAL	29	644

Source: Department of Mines and Energy

The most surprising feature of the Northern Territory data is that the average fines are the highest in Australia. Table 9 presents a breakdown of the types of offences which dominated the Northern Territory convictions.

CONCLUSION

The three large states — New South Wales, Victoria and Queensland — are clearly the most prosecutorial states, and the small jurisdictions of Tasmania and the A.C.T. (probably) the least. This is so even after taking account of population differences, because the gap in use of prosecution is so massive; all three large states have over 100 convictions every year while Tasmania averages but one.

By any absolute standard, the number of prosecutions is very low. New South Wales, the state with the largest absolute number of prosecutions, issues almost a hundred infringement notices (formal notices of violation) for every prosecution (Tubbs, 1982), and undertakes over 500 inspections per conviction. Thus, even in the more prosecutorial states, the chances that an employer will suffer prosecution as a result of an inspection are very slim indeed, and inspections occur on the average only once every few years (Gunningham, 1984: 345). Add to this the low probability that an offence will be visible during an inspection or detected by a busy inspector who cannot cover the whole plant, and the chances of any occupational health and safety offence being punished are exceedingly remote.

Chapter 4

Prosecution in the Context of Wider Regulatory Strategy

For all of the agencies discussed in this report, law enforcement is only a part of their function. Safety education is an important involvement to greater or lesser degree with all of them. Even with routine inspections, persuasion is regarded as a more important function than enforcement. Indeed, seven of the eight general occupational health and safety inspectorates indicated in interview that education and persuasion were more important functions for them than law enforcement, and six of the eight thought that they devoted more resources to education and persuasion than to law enforcement.

Respondents from all of the inspectorates said in interview that their goals included getting companies to do better than the minimum required by law. This implies reliance on more than just law enforcement, which of necessity can only secure compliance with legal minimum standards. These issues will be reconsidered for mines inspectorates in the next chapter, but for the moment we continue to limit the focus to general occupational health and safety inspectorates.

The Influence of Robens

These policies reflect the influence in Australia of the Robens Report on health and safety at work (Robens, 1972). The Robens philosophy is predicated on two basic assumptions — that most accidents are caused by worker and management apathy, and that there is a 'natural identity of interest' between management and workers because both sides want to reduce work hazards (Gunningham, 1984: 266-7; Creighton, Ford and Mitchell, 1983: Ch. 41; Merritt, 1983). Both these assumptions were used to justify placing a low reliance on law enforcement as a regulatory strategy, and a heavy reliance on voluntary industry initiatives.

Nevertheless, not all of our findings point to a total commitment of Australian inspectorates to the Robens line. Only three of the general occupational health and safety inspectorates saw self-regulation as having an important place in their regulatory strategy. Some of them aggressively rejected self-regulation as an impractical pipe dream because 'you can't trust companies not to cut corners on safety when there are deadlines to meet'. Indeed one of the surprising findings of our more general study of business regulation in which we conducted interviews at 111 regulatory agencies was that general occupational health and safety inspectorates were an exception to a general perception of 'self-regulation' as a positive thing among Australian regulatory agencies. Self-regulation may be a concept with negative connotations to many occupational health and safety regulators because trade unions have associated it with *laissez faire* rather than self-regulation which is monitored by government and designed in cooperation with government and unions. Some prefer to describe the latter as co-regulation rather than self-regulation.

In practice, notwithstanding the philosophical influence of Robens, Australian occupational health and safety regulation has relied very little on encouraging or requiring industry or individual companies to write and enforce their own codes of practice as opposed to governments writing and enforcing regulations. For nine years South Australia has had legislative authority to require employers to 'prepare and, as often as may be appropriate, revise a written statement setting out with reasonable particularity, the arrangements for the time being in operation to maintain the safety and health at work of his employees' (Sec. 29a (1) (a) Industrial Safety, Health and Welfare Amendment Act, 1976), but resources have not been deployed to ensure that such statements are written. No company has ever been prosecuted for failing to prepare a statement. Extensive negotiation and consultation with business and unions does take place, particularly through formal tripartite consultative committees which all of the mainland states have. However, the negotiation on these committees to date has been over what the government should put in its regulations, not over the codes of practice and corporate enforcement programs expected of industry.

In accordance with Robens, most agencies espoused the encouragement of workers to form and demand worksite safety committees and to elect safety representatives as a regulatory strategy (though the South Australian, Northern Territory and Queensland Occupational Safety Divisions did not include encouraging workers in such directions among their compliance policies). Notwithstanding the espousal of fostering grass roots union involvement by the other agencies, there has been little action to implement these ideals. Tasmania, for example, has had a Robens-style legislative framework for safety committees and employee

safety representatives since 1977, but at the time of our interview in late 1984, of the 50 safety representatives appointed in accordance with the act, more than 40 were from government departments. The instances where safety representatives had been appointed or safety committees formed in private industry could be 'counted on the fingers of one hand'. One reason offered was that 'we have been directed politically not to get out there and wave a flag and sell it'. We may see a very different situation some years from now after the Labor states have implemented their commitment to require health and safety committees for all places of work with more than a minimum number of employees. But the experience of Tasmania and South Australia over the past decade where legislation influenced by a Robens philosophy has been in place, gives reason for cynicism that writing a law is any guarantee that the legwork will be done to get safety committees and corporate and industry safety codes operational.

All in all, it is not unfair to suggest that to date Australian inspectorates have used the Robens philosophy to justify a neglect of law enforcement while also neglecting to do the things which the Robens philosophy says should be done. Australian regulation has taken the form of very traditional government command and control regulation with a weak enforcement component. The agencies have not had the resources properly to implement either the system they inherited or the regulatory regime which follows from the philosophy most of them have about the way the system ought to work. Underresourcing has meant a program of ritualistic inspections by poorly qualified inspectors.

These inspectors neither mobilise management to redesign workplaces so that they are safer, to write codes of practice, train workers in their contents, appoint safety personnel to monitor compliance with them, form safety committees, nor organise workers to appoint safety representatives (as the Robens philosophy would have them do), nor do they initiate law enforcement action on anything but a fraction of one per cent of their inspections (as a deterrence philosophy would have them do). Essentially they walk around a factory with a rule book which specifically covers very few of the hazards existing in the factory and politely ask that any offences detected cease. We do not for a moment suggest that this is without considerable value; we simply point out that in reality inspection policies follow neither Robens precepts nor deterrence precepts. Showing the flag, occasionally tapping people on the shoulder to remind them of the obligations the law places on them, probably does save a lot of lives, but it is an activity which does not meet the standards of either of the major contending regulatory philosophies.

In defence of occupational health and safety regulation, it must be said that it is more proactive than many other areas of business regulation in Australia. Some other regulatory agencies are almost totally reactive —

they wait for something to go wrong before taking action. For example, some consumer affairs agencies simply have people sitting in offices waiting for consumers to come in with complaints; they almost never randomly check whether businesses are complying with the law. Proactive inspection of workplaces without warning³ is the dominant approach of the agencies in this report; a reactive style is the exception rather than the rule. The outstanding exception is the Queensland Industrial and Factories and Shops Inspectorate for which occupational health and safety monitoring activity is almost totally triggered by complaint or request from outside. The policy is generally to notify management in advance that the inspector will be visiting. That is, this inspectorate does not randomly survey compliance with its lead rule or its asbestos rule, it waits until a worker complains or an employer asks for advice. As one Queensland Health Department official illustrated the policy they shared with the Industrial and Factories and Shops Inspectorate: 'James Hardie is a big company which monitors its own asbestos and so we're happy to leave them alone'.

The agencies are all reactive with respect to serious accidents. All jurisdictions have requirements that accidents resulting in death or serious injury must be reported to the inspectorate.⁴ It is a distinctive feature of occupational health and safety compared with most other types of business regulation that investigations of some of the most serious offences are triggered by mandatory self-reporting of the harm done.

As further testimony that the Robens Report is used in the most perverse of ways as a rationalisation for inaction, Queensland's Chief Industrial Factories and Shops Inspector even interpreted the Robens bible as justifying a rejection of proactiveness:

When I say we're mainly on complaints, it doesn't mean that we don't do some general inspections. But the years are gone when we divided Brisbane up into eight areas and you walked up and down the street doing general inspections. Those days are over all over the world. The Robens Report killed that because it said that some inspectors had a habit of going back to the good places all the time, whereas if you deal with complaints, at least you're dealing with trouble spots.

While inspection consumes most of the resources of these agencies, there are a number of other important activities. As mentioned earlier, there are safety education programs. There is a very considerable investment in all states in design review of major industrial plant prior to installation, and some activity in some states in pre-clearance of industrial chemicals. Designs for new premises are registered and approved.

In addition to approving the safety of premises and plant before it can be used, approving the competence of people before they can perform certain hazardous functions is another important part of the regu-

latory strategy. This is achieved through the issuance of certificates of competency as plant operators, boiler attendants, engine drivers, crane drivers, scaffolders, and the like. Even in smaller states, these activities consume considerable resources — Tasmania issues over 600 certificates of competency a year, over 200 design approvals for pressure vessels, cranes, lifts, etc., and registers over 6,000 factories and shops.

It is hoped that this section has succeeded in locating occupational health and safety enforcement policy in the wider framework of the total regulatory strategies pursued by the agencies which are the focus of this report. We would not want it to be thought that enforcement policy is the beginning and end of the story of how governments try to make Australian workplaces safer. It is a part of the story which, as we will see later, must sometimes be made sense of by putting it in the context of the agency's wider regulatory strategy. Equally, we hope that we have made the point that if agencies reject the findings of a study such as this on the basis of commitment to a philosophy which sees little place for prosecution, the reality is often that these agencies are also doing little or nothing about the regulatory activity required by their alternative strategy.

Prosecution Policy

It may be that we can begin to understand the relatively low levels of enforcement characteristic of general occupational health and safety inspectorates by their prosecution policies. None of these agencies have detailed written policies which indicate the circumstances in which prosecution is most appropriate, though Victoria is currently working on such a policy, and the Queensland Division of Occupational Safety has a short policy which gives priority to prosecution when there is loss of life or serious bodily injury. With respect to unwritten guidelines, the most important factor was injury to the victim. Six of the eight agencies said they were more likely to prosecute when a worker was killed or seriously injured as a result of a breach of the law. This unwritten guideline was justified on two grounds: first, it is of assistance to the victim in obtaining common law damages for serious injuries when a conviction has been obtained against the company for causing the injury; second, it brings the regulatory agency and the justice system into disrepute when law breakers who cause death or serious injury are seen to go unpunished. We say 'seen to' go unpunished because companies which cause death over a period of many years by illegal exposures of workers to toxic chemicals are never prosecuted in most states presumably because delayed onset of disease attenuates public perceptions of a connection between the crime and the consequence, and therefore public demands for punishment.

The second most important unwritten guideline was that for six of

the eight agencies, prosecution was more likely to be favoured if the offence had been brought to the attention of the offender and there was a subsequent failure to rectify the problem. Other guidelines of lesser significance were whether the company was a repeat offender (mentioned by four agencies) and whether the violation was intentional (mentioned by two).

Neither prosecution crackdowns on a particular aspect of occupational health and safety law nor single showcase prosecutions with maximum publicity characterised in a significant way the prosecution policy of any of the agencies. Most of them did indulge in limited targeting of repeat offenders by stepping up inspections of recidivists.

None of the agencies had a target number of prosecutions they aimed to achieve in a year, nor any more general view on a minimum level of prosecutorial activity desirable to achieve adequate deterrence. Only one respondent said outright that his agency would be concerned if it had fewer prosecutions this year than last year, though three others said in certain circumstances their agency might be concerned.

Beyond saying that a high level of prosecution was unnecessary, when asked why the agency did not take on more prosecutions than it did, the most important reasons mentioned were insufficient human resources (5 agencies), the argument that low penalties make prosecutions not worthwhile (4), and the view that delays in the courts make prosecutions not worthwhile (3). The A.C.T. Technical Services Branch and the Queensland Industrial and Factories and Shops Inspectorate both mentioned inadequacies in the law as an inhibition on prosecution. This is not surprising given the extraordinary legislative deficiencies these agencies live with (Merritt, 1984: 485-6; 178-201). The A.C.T. does not have any regulations covering lighting, ventilation, ergonomics, dust, or use of chemicals.

A key question of policy is whether there is a preference for directing prosecutions for corporate offences at the company, at the individual responsible within the company, or at both the company and the responsible individual. In all cases the preference was to prosecute the company. This was reflected in the prosecution statistics where in some states the only prosecutions of individuals were in cases where the individuals were principals of the companies. Prosecutions of individuals for operating equipment without a certificate of competency do occasionally occur.

While most agencies reported that ministers occasionally became involved in decisions over whether prosecutions should go ahead, for five of the eight agencies the policy was to delegate most of the discretion over how most offences should be dealt with to inspectors in the field. Compared with many other types of regulatory agencies, occupational health and safety agencies have a very decentralised decision making structure.

Half of the agencies do not even have systematic monitoring of what their inspectors are doing. That is, four of them are not in a position to know how many prosecutions, defect notices, production shut-downs, even how many inspections Inspector A does in a year compared with Inspector B.

The most important constraint on the discretion of inspectors to influence whether prosecutions occur is the fact that for five of the eight agencies all prosecutions are conducted by Crown Law Departments or their equivalents rather than by the agency. It is worthy of note that four of these five agencies found the services they received from Crown Law unsatisfactory in one way or another, the main complaint being the lack of technical sophistication and understanding of regulatory problems which Crown Law generalists exhibited.

Sanction Other Than By Prosecution

Occupational health and safety agencies tend to defend their low level of prosecution by suggesting that they have an enforcement policy which relies more on informal sanctions which are quicker and easier to apply than is proving guilt beyond reasonable doubt in a court of law.

Harassment. The most widely used of the alternatives is simply to harass the suspected offender by keeping inspectors coming back again and again until the company decides to comply with the law to get the inspector off its back. 'Harassment' is not the word the agencies would choose to use to describe this process; yet there is no better word to portray an enforcement strategy which depends for success on the fact that inspections can disrupt production routines and distract managers who must respond to the inspector from their normal tasks. Follow-up inspections can usually turn up new offences, even if only technicalities, beyond the original offence considered worthy of sanction. Thus, management have an incentive to extricate themselves from snowballing into further problems by complying in the first instance. All kinds of regulatory agencies are attracted to harassment as a tactic since its total informality means that nearly all the costs of enforcement are borne by the alleged offender rather than by the agency. Frequently, harassment by follow-up inspections is combined with harassment by correspondence in the form of infringement notices — warning letters which require replies.

Improvement Notices. In the jargon of the Robens Report, an improvement notice means a written directive that certain things be done by a certain time to assure compliance with the law or to improve the safety of a workplace. Occupational health and safety laws of all Australian states provide for improvement notices with varying degrees of flexibility. We

asked all agencies for statistics on the use of such notices, but in most cases we had to be satisfied with a crude impression that they are rather infrequently used. The only statistics are partial ones from Victoria where between 1973 and 1984, there were an average of 7 Directives per year under the Inflammable Liquids Act and between 1979 and 1984 an average of 7 under the Liquefied Petroleum Gas and Liquefied Gases Acts.

Prohibition Notices. Prohibition notices or 'stop notices' require the cessation of a particular activity which endangers health or safety immediately or by a specified time. Such notices can shut down a particular machine, a segment of a production process or an entire workplace. Depending on how significant a production unit is shut down for how long a period, the costs to the company of a prohibition notice can be very much greater than those of a fine. In principle, the purpose of a prohibition notice is preventive rather than punitive. Intended or not, however, the potential for deterrence, as well as incapacitation, of prohibition notices cannot be ignored by an enforcement policy. We were unable to obtain statistics on the use of prohibition notices. Seven of the eight general occupational health and safety agencies were able to indicate that prohibition or stop notices of some sort had been issued in recent years, albeit rather infrequently.

Injunctions. Three of the agencies had also had recourse to seeking injunctions in a court of law in circumstances where improvement or prohibition notices did not or could not prevail. This was clearly a regulatory action of such infrequency, however, to be of no practical significance.

Seizure. Seizure of offending products or equipment or assets is an important tool in some areas of regulation (e.g. food standards, fisheries, bankruptcy), but not so with occupational health and safety. Seizure of explosives occasionally occurs, but the financial loss from such seizures is rarely sufficient to constitute a significant sanction.

Licence Suspension or Revocation. All of the agencies had at some time acted to suspend or revoke licences or certificates of competency. In all cases this action was infrequent; in most cases it was less than an annual occurrence. When it does occur, it can be a severe sanction which permanently or temporarily costs a person's livelihood.

Adverse Publicity. There would be few areas of regulation where adverse publicity is used less as an informal sanction than occupational health and safety. Bad press for disreputable businesses is the bread and butter of consumer affairs regulators, of health departments in assuring the purity of food, even of the Taxation Office whose long lists of evaders in annual reports often find their way into newspapers to the embarrassment of those concerned.

Some occupational health and safety agencies do not use adverse publicity at all. Incredibly, the secrecy provisions of Western Australian legislation is interpreted by the Department of Labour and Industry to be so broad as to forbid directing adverse publicity against companies which inspections reveal to have poor standards. It even prohibits telling a worker whose complaint led to an inspection of the results of that inspection. Those agencies which use adverse publicity do so very sparingly and with little flair. There are a number of ways it can be done. A formal press release can be issued rueing the wrongs of an offender who has just been convicted. Victoria and the Northern Territory have done this. Offenders can be named in the Department's annual report. South Australia has done this. Journalists can be tipped off to sit in on a court case which has some news value. Several states admitted off the record to doing this.

Five of the agencies had used adverse publicity in a preventive way without naming the company concerned. This can take the form, for example, of warning in an industry newsletter against a particular hazardous practice detected at an unnamed firm. None of the agencies, however, claimed to have directed adverse publicity against a named firm which had not been charged with an offence.

Thus, adverse publicity is not used by occupational health and safety agencies as an alternative to prosecution. It is used infrequently either to complement prosecutions or in a preventive way without naming offenders.

Summary. Almost all of the sanctions other than prosecution which have been discussed are used either infrequently or in a way which is not as an alternative to prosecution. Thus, claims that prosecutions are unnecessary because alternatives are being used which are more efficient and potent deserve sceptical treatment. Harassment by repeat inspections and warning letters is the only alternative sanction which is clearly widely used. While we would not challenge claims that this informal sanctioning has value, we do question whether it is potent enough to sustain enforcement credibility when stakes are high.

On the other hand, improvement notices, prohibition notices, and adverse publicity undoubtedly can be much more potent sanctions than the petty fines the courts are wont to hand out. But there is no evidence that these sanctions are being used with such force and frequency as to render deterrence in the courts unnecessary. If there were stories of factories losing hundreds of thousands of dollars while they were shut down under prohibition notices, we surely would have been told these stories when we asked for them in our interviews. If agencies genuinely viewed these *de facto* sanctions as the basis of an enforcement policy which obviates the need for prosecution, then they would keep statistics on when and where the *de facto* sanctions are being used in order to monitor the execution of their enforcement policy.

In Chapter 8 we will advocate a place for these alternative informal sanctions which does take them seriously, which recognises their potential, and which requires that statistics be maintained to monitor the frequency and circumstances of their use. It will not, however, be an enforcement policy which sees these alternatives as justifying the kind of neglect of prosecution which we see in Australian occupational health and safety enforcement.

Cost of Regulation

One possibility which was necessary to explore was whether a low level of enforcement activity, either by prosecution or the alternatives discussed in the last section, was the result of a principled aversion to imposing the costs of enforcement activity on industry. We found this not to be the case. Some occupational health and safety regulators rejected dollars as something to be considered when matters of human life were at stake. Most, however, had some concern about the cost of regulation, though none of them had sufficient concern to advocate spending some of their limited resources on systematic monitoring of the costs which occupational health and safety regulation impose on industry. None of the regulatory agencies had undertaken any cost-benefit analysis or any systematic cost of regulation investigations of any kind. While they said that the business community frequently complained of the cost of regulation, none of the agencies had been presented with or were aware of any cost-benefit analyses of occupational health and safety regulation conducted by business. In fact, however, there has been one limited study from industry. An officer of the Victorian Chamber of Manufactures has attempted to assess the costs associated with the Victorian Labour and Industry (Foundries) Regulations (Crow, 1981).

Inadequate Powers of the Agencies?

Can the relatively low level of law enforcement be attributed to inadequate powers possessed by the agencies to do their job? The last policy question we asked at each interview was: 'What additional powers or resources would better enable the agency to do the law enforcement part of its job?' All jurisdictions said they needed more human resources in response to this question. South Australia and the Northern Territory, however, said they neither needed nor desired additional powers. Moreover, in response to probes associated with this question, the senior management of occupational health and safety in South Australia also indicated no desire to expand the reach of their regulations.

Q. Are there important areas that your legislation doesn't cover. Do you wish you had a lead standard, or wish ...

A. We don't need any regulations. The less regulations we have got, the better. That is the big problem.

Q. Why is that?

A. Because everyone walks around with a book under their arm, instead of looking at the problem ...

Surprisingly, on this latter question only the A.C.T. said that they needed to expand the coverage of their regulations to areas which simply weren't encompassed by the law, and only three wanted expanded investigative powers. This of course is a very different response from that obtained from police when they are asked about the problems which bedevil their enforcement.

The reason for indifference to acquiring greater powers may simply be that occupational health and safety officials already have much greater powers than the police in some significant ways. All jurisdictions give inspectors power to enter and search premises without a warrant; seven of the eight agencies empower inspectors to demand answers to questions and to see relevant company records — with three of them, answers or records can be demanded even when this would be incriminating with no restrictions on the use of this incriminating evidence against the informant;⁵ inspectors in all eight agencies have the power to order behaviour not specifically covered by the legislation to cease, with failure to comply being an offence;⁶ five of the agencies can compensate for limitations in the coverage of their regulations by relying on a 'general clause' which forbids all other acts which endanger health or safety.⁷ Except in the A.C.T. strict liability is dominant in most of the statutes administered by most of the agencies. That is, the agency does not have to prove that the offence was committed intentionally or knowingly to secure a conviction. Some of the acts go to some lengths to remove impediments to strict liability. Consider the following example from the Queensland Construction Safety Act, 1971-1975:

22A. **Absolute liability of constructor etc.** The person on whom a duty is cast by section 20, 21 or 22 is liable for a breach of that duty notwithstanding that the act or omission that evidences a failure to perform that duty is the act or omission of another person or that the act or omission is contrary to his instructions and in relation to such breach of duty sections 23 and 24 of The Criminal Code do not apply.

In addition to frequent provisions removing the option of shifting responsibility to those below, provisions to thwart attempts to shift responsibility to those above also sometimes appear in the acts:

41. Where proceedings are taken against a person for or in respect of a contravention of, or a failure to comply with, any provision of this Act, it is no defence for that person to prove that he was the agent or employee of any other person or was acting in pursuance of an order or direction given by such other person. (Western Australian Construction Safety Act, 1972).

We do not for a moment contend that there are not many areas where

the powers and legislative mandate of occupational health and safety regulators is insufficiently wide. In Western Australia, Machinery and Construction Safety inspectors have the authority to stop unsafe work; Factories and Shops inspectors do not. Clearly, the latter should have this power. Enforcement would benefit enormously from power to issue on-the-spot fines for minor offences in the way that traffic police do. Three of the eight agencies are saddled with legislation which requires compliance with the law only when this is 'reasonably practicable'.⁸ Hopkins and Parnell (1984) have demonstrated in the area of coal mine safety enforcement in New South Wales how this kind of escape clause can inhibit enforcement. Obtaining convictions under general clauses is bound to be more difficult than prosecuting the same conduct under specific standards. Moreover, the average Australian factories inspector and the average factory manager are not technically competent to assess what is an unsafe level of exposure to a hazardous chemical without the guidance of a standard. Substantial proportions of the workforce in Queensland, Western Australia and the Territories are not covered at all by occupational health and safety laws which are restricted to specific types of workers and workplaces. Even in Victoria, N.S.W. and South Australia, many workers are not covered by asbestos regulations (Gunningham, 1984:161, fn.9). Such qualifications could go on and on.

But the fundamental point would remain unshaken — overall, the powers and other legal instruments at the disposal of health and safety law enforcers are very much greater than those at the disposal of the police. Since the police do well enough at obtaining convictions with their lesser powers and with the added burden of chasing offenders across the country, inadequacy of powers does not wash as an explanation of low levels of prosecution. Nor is it consistent with the evidence presented earlier that Australian occupational health and safety agencies rarely suffer acquittals when they do proceed with prosecutions. Moreover, unlike police departments, we have seen that occupational health and safety agencies generally do not themselves see powers as an impediment to enforcement action. Probably as a consequence of this, increasing the powers of government inspectors has not been a significant issue in the flurry of redrafting of occupational health and safety laws which has been occurring in Labor states over the past two years. Unions have not called for a strengthening of inspectors' powers, nor have there been urgings from industry to roll these powers back.

Chapter 5

The Mine Safety Inspectorates

The unusually high injury and fatality rates which have always existed in mines resulted early in the century in the establishment of specialist inspectorates. 'Mine safety inspectorates' is used here to include agencies responsible for enforcing health and safety in both coal and metalliferous mines and at oil and gas exploration or production projects. Except in New South Wales, which refused to cooperate with our survey, these are all agencies in mines departments. We will see that in some important ways safety enforcement on oil rigs is different from that in mines. When we wish to separate the Victorian Oil and Gas Division, the West Australian Petroleum Division and the relevant parts of the South Australian and Queensland Mines Departments from the other agencies, we will refer to the latter as 'mine safety inspectorates proper'. The nine agencies from which we collected data were:

Victoria, Oil and Gas Division, Department of Minerals and Energy;

Victoria, Mines Division, Department of Minerals and Energy;

Queensland, Chief Inspector of Coal Mines;

Queensland, Chief Inspector of Metalliferous Mines;

South Australia, Department of Mines and Energy;

Western Australia, Petroleum Division, Department of Mines;

Western Australia, State Mining Engineer, Department of Mines;

Tasmania, Department of Mines;

Northern Territory, Mining Division, Department of Mines and Energy.

In Queensland we gathered virtually no information on safety in the oil and gas industry. Separate responses on oil and gas were obtained in South Australia and Tasmania, but since the differences in regulatory policy and the administrative segregation were minimal, these responses were not coded separately.

THE USE OF PROSECUTION

Low as the level of prosecution activity is on the part of factories inspectorates, by any standard it is even lower with mines inspectorates. In Western Australia, the state with most mine safety enforcement activity, convictions per 1,000 miners are much lower than convictions per 1,000 manufacturing workers, even though the hazards of mining employment are far greater. The average fines when convictions do occur are also lower, largely a reflection of the extraordinarily low maximum penalties provided for in mine safety statutes. In many jurisdictions, a maximum \$100 fine or even less, is all that is available for quite serious offences.⁹ Combine this with sentencing guidelines where magistrates impose 20 per cent of the maximum fine on a first offence, and one obtains a result like the following from the 1980 Annual Report of the Western Australian Mines Department:

No prosecutions were initiated during the year, however, prosecutions commenced in 1978 following the deaths of two workmen at the Kwinana Nickel Refinery on the 8th June, 1978, were concluded. The Magistrate's findings were handed down on the 28th May, 1980. The registered manager was found guilty on two counts: one against Section 54 and one against regulation 8.13(1) of the Mines Regulation Act 1946-74 and Regulations. He was fined \$20 on each count. The company was found guilty of an offence against regulation 8.13(1) and fined \$100. The foreman responsible for the work being undertaken by the men, prior to their deaths, was found guilty on two counts: one against section 54 and the other against regulation 19.2. He was fined \$20 on each offence.

The Tasmanian Mines Inspection Act 1968 is a classic in that it provides the same maximum penalty (\$500) for negligently causing a person to be killed in a mine as it provides for using obscene language or engaging in 'unseemly or riotous conduct' in a mine (Section 48).

The prosecution strategy with mine safety regulation in Australia is radically different from factories enforcement. Whereas general occupational health and safety inspectorates direct their prosecutions overwhelmingly at companies, mining inspectorates aim their prosecutions overwhelmingly at culpable individuals.

New South Wales

The unwillingness of the Department of Industrial Relations to cooperate with this study has meant that no data have been collected on the use of prosecution by the Chief Inspector of Mines and the Chief Inspector of Coal and Shale Mines. With respect to coal mines, Hopkins and Parnell (1984: 361) note from a reading of annual reports that for the 13 years between 1966 and 1978, there were only nine prosecutions of company officials. More recent data are unavailable, apart from the fact that in 1982 there were two Coal Mines Regulation Act

convictions — one of a deputy (foreman) who was fined \$60, and one of an electrician who was fined \$30.

These data, even if complete, only tell part of the story. Between 1966 and 1978, there were also an average of 4.3 prosecutions a year of miners initiated by mine management. The average fine in these cases was \$23 (Hopkins and Parnell, 1984:361). This is a unique feature of New South Wales coal mine safety enforcement. The tendency for most prosecutions to be initiated by management against workers rather than by the state against management or the corporation was even more striking earlier in the century. Between 1897 and 1965, while there were an average 3.7 prosecutions per year of coal mine owners (mainly companies), agents or managers, there were an average of 24 prosecutions per year of miners by owners (Hopkins and Parnell, 1984:361).

In interviews at the New South Wales Mines Department in 1982 undertaken in connection with another research project, one of the authors was told that the practice of management prosecuting workers had by then ceased.

Victoria

Victoria is no longer a major mining state. The most significant area of activity is oil production and exploration in Bass Strait. In the last 10 years, there has been only one prosecution launched against an operator or explorer in the Victorian oil field. This was a case initiated against Esso which was not ultimately proceeded with.

Onshore mining activity is of quite a minor nature in comparison, apart from the State Electricity Commission's brown coal production which employs over 500. The latter, however, is a government-owned activity which is exempted from the regulatory purview of the Department of Minerals and Energy. The Department, curiously enough, does have responsibility for safety in the construction of tunnels and trenches other than in mines (e.g. in the construction of Melbourne's underground rail loop). This is the main area of prosecutorial activity in what the head of the Department described as a handful of prosecutions (certainly fewer than 10) by the Department each year. Detailed statistics are not available.

Queensland

Coal mining is the major mining activity in Queensland. No prosecution has been initiated for a coal mine safety offence in the past decade. The Chief Inspector of Metalliferous Mines, in contrast, has initiated 16 successful and seven unsuccessful prosecutions. The average

fine imposed in the successful cases (all of them between 1976 and 1981, and 12 of them in 1981) was \$31. Only two of the 16 convictions were of companies. At least two of the convicted individuals were mine managers.

South Australia

South Australia will only become an important mining state when the controversial Roxby Downs mine comes into full production, though the Cooper Basin makes South Australia a substantial oil and gas producer. There has never been a prosecution for a safety offence in oil or gas production or exploration in South Australia. With general mining there have been seven convictions in the last 10 years.

Western Australia

Western Australia is the only state with evidence of significant prosecutorial activity in recent years. In the 12 years between 1970 and 1982 inclusive, there were 47 prosecutions of which 40 resulted in convictions. Only one of these convictions was of a company. Most of the individuals were miners, but with a smattering of supervisors, managers and contractors. Data on fines are only available since 1977. For the 17 convictions since 1977, the average fine was \$54.

There have been no prosecutions in relation to the safety of oil and gas production and exploration in and off Western Australia.

Tasmania

Tasmania has a diversified mining industry producing minerals to a value of \$400 million per annum. There has been no prosecution activity whatsoever over the past decade. As the Director of Mines for Tasmania explained in one letter:

My Department has not found it necessary to institute prosecutions against offenders under either the Mines Inspection Act or the Dangerous Goods Act for over ten years. It is our policy to achieve compliance by persuasion rather than by the use of penal sanctions.

Northern Territory

For the Northern Territory, data are available from 1978. Since the beginning of 1978, there have been four prosecutions, all of mine managers. Three were successful.

The Australian Capital Territory

Apart from minor quarrying, there is no commercial mining activity in the A.C.T.

PROSECUTION IN THE CONTEXT OF WIDER REGULATORY STRATEGY

Mine safety enforcement in all states but New South Wales is a Mines Department responsibility. The prevailing philosophy has been that all government interface with the mining industry should be under the auspices of one department. This has the advantage of making more informal regulation more potent. A mining company which wants to treat with contempt the advice of a mines department inspector has to ponder whether it is worth risking a relationship with the department which is vital; mines departments are involved throughout the life-cycle of a mining project, from permitting initial exploration to requiring revegetation after all the extraction is finished. The Secretary for Minerals and Energy in Victoria described the situation with the off-shore petroleum industry as follows:

The other reason that it is different from factory inspection is that it is the regulation of industry from the beginning through to the end. We help find where the oil is, we then carve it up into permit areas, we then allocate the permit areas, require a working program from the explorer as to how many wells he is going to drill and how he is going to go about it, we supervise the exploration, we set conditions for the conversion from exploration to production, we supervise the production, we go through reclamation at the end, the removal of the platform so that it is the regulation of an entire industry.

This is a situation which mines department officials see as having the one stop shop advantages of putting minimum entanglements with government departments in the way of projects which the Australian economy cannot afford to delay. It may also avoid buck passing between departments with shared responsibilities for enforcement (cf Layman, 1984).

A manufacturing company, in contrast, need not have so many qualms about ignoring officials from a Department of Labour. Beyond negotiating clout arising from encounters embedded in ongoing adjudications of benefits and burdens, there is the advantage, as one mines department bureaucrat put it, that 'we speak the same language as the industry'. Because mines department officials generally have experience in their particular industry, there is undoubtedly superior respect and understanding between regulatee and regulator. This enhances the relative efficacy of informal compared to formal social control.

On the negative side, however, the risk of capture of the regulatory agency by industry is the countervailing disadvantage. Many would have

doubts over the justification which one top mines department bureaucrat gave us for regulatory vigilance: 'We try and sell the industry. We don't want incidents which cause political problems'. It is not the purpose of this report to make a judgment on whether the advantages of industry familiarity and multivalent negotiating clout outweigh the risks of capture. However, the distinctive characteristics of mine safety regulation, particularly its informality, must be understood in part as a product of its single-industry-single-agency location.

With mine safety regulation, a cooperative compliance model has relatively more attraction than a law enforcement model because of the much more frequent contact of inspectors with industry than is the case with factories regulation. Most mines of any significance in Australia can expect at least monthly government safety inspections, while other workplaces may go for many years without seeing a general occupational health and safety inspector (see Table 1, Chapter 2). The consequence is that mine safety inspectors can build across time a relationship of mutual respect and accommodation with the managers with whom they are in regular contact.

Relationships of respect are also given a better chance by the fact that mine safety inspectors in Australia are generally professional peers of the managers with whom they must interact. It is very unusual for a mine inspector in Australia not to have a tertiary qualification (a degree or diploma usually in engineering), while it is equally unusual for a general occupational health and safety inspector to have one. Mine inspectors in all states are required to have a certificate of competency as a mine manager and at least 3 years experience in mine management. Generally, they have much more experience than this minimum; most states do not like to employ people who have not had at least 10 years mining experience including experience as a mine manager.

In short, both the frequency of inspection and the quality of inspectors in mine safety is far in advance of the situation with general occupational health and safety. Progress in implementing many Robens-style reforms has been real rather than illusory in the mining industry and actually pre-dates the Robens report. For decades, mine safety laws have required mines to write their own special rules on safe transport in the mine, roof support, tipping waste, and a variety of other matters,¹⁰ to communicate these rules to workers through organised training, to nominate personnel with responsibility for ensuring compliance with the rules,¹¹ to conduct at least weekly inspections to monitor compliance with both general regulations and company rules,¹² to record breaches detected by these inspections and by other means in a record book maintained for the purpose at the mine,¹³ and so on. In short, mine safety regulation has long put into practice the notion that management must take responsibility for writing, communicating and internally enforcing

codes generated by industry under the supervision of highly qualified government inspectors.

Except in Tasmania, the Northern Territory and with off-shore oil and gas production, it has also long practised the empowerment of elected workers as safety representatives who have the right to inspect and to stop production when this seems justified.¹⁴ In Queensland, in addition to local miners safety representatives, full-time state-wide union safety inspectors with the power to stop coal production have \$24,000 per year towards their salaries subsidised by the state government, and district workers representatives for metalliferous mines have their entire salaries paid out of consolidated revenue. The West Australian Mines Department pays the entire salaries of five full-time union safety inspectors. Interestingly though, programs to actively encourage the formation of workplace safety committees have never been part of the strategy of any mines inspectorate.

The most important kind of enforcement undertaken by mine safety inspectors involves mobilising private justice systems within mines:

We think the important thing is to take action on the spot and you'd be aware that the strength of the unions associated with mining and I can assure you that what we lack in, if you like, legislative strength, is more than compensated for by general acceptance of the workforce of ... health and safety ... I take that a little further by saying to you that misdemeanours at a mine which are registered by either the manager or the mine workers are taken care of amongst that group by standing down a person for a specific number of days, or in extreme cases, discharging that person from service... On the spot justice.

Q. So you encourage these informal processes?

A. Of course we do... It is a rule of the Queensland Colliery Employees Union that members of that union will not work with any person who is found to be smoking underground or to have in his possession materials for smoking... The tradition is, I guess ... the tree stump, the office table justice. And maybe justice after some bartering. Management says he goes down the road for three days and his union representatives come out with a 'Jesus Christ, not that long' and they agree on two days.

Like most of the examples of tree-stump justice we were given, the following from off-shore oil regulation also concerns informal control of individual workers rather than managers.

...just recently we saw someone smoking in an area where they shouldn't have been smoking, and we have written to that company and advised them of it, and asked them to let us know what action they have taken against that employee.

Q. And you would rather do that than prosecute that individual?

A. Yes, the company will undoubtedly transfer him to another area, I should think. If they take no action, we just say 'Well, that personnel, that chap, isn't allowed on the rig.'

Q. And you'd have the power to do that?

A. Yes.

Mine safety inspectorates do have the resources, the expertise and the worker-management support to contend, with a credibility the general health and safety inspectorates cannot, that they are assisting informal social control at least partially to succeed as an alternative to law enforcement. This does not extricate these inspectorates from the critique that their regulatory system wrongly assumes that there is always a community of interest between workers and management when it comes to health and safety. We return to this issue later. At this point, it suffices simply to say that when mine safety inspectorates claim they have something in the place of prosecution, they do; when general occupational health and safety make this claim, they do not.

Most of what we have said about the minor role of law enforcement in the overall regulatory strategy of general occupational health and safety inspectorates is even more true with mine safety inspectorates. All eight mine safety inspectorates saw education and persuasion as more important functions for them than law enforcement and felt that more resources went to the former than the latter. All of them felt their goals included getting companies to do better than the minimum required by law.

Mine safety agencies were not as resistant to the philosophy of self-regulation, five of the eight viewing it as an important part of their regulatory strategy. Referring to his enthusiasm for self-regulation, the Northern Territory's Director of Mines echoed sentiments which were often repeated in the interviews: 'Most of what we achieve, we could do without any legislation'. As with general occupational health and safety inspectorates, we must bear in mind that in addition to conducting inspections, Mines Departments approve plans for the expansion of mines, for roof control, contingency plans for oil spills from off-shore rigs; they issue certificates of competency for Managers, Deputies, electricians and a wide array of other specialist jobs; they supervise mine rescue establishments; they undertake safety research; and they conduct safety education campaigns. Law enforcement is therefore only one of a variety of facets of regulatory strategy.

Prosecution Policy

While none of the mine safety inspectorates has a written enforcement policy, the distinctive aspect of the *de facto* enforcement policy of each inspectorate, as we have seen, is an emphasis on directing enforcement at individuals rather than at companies. In this they are not only different from general occupational health and safety inspectorates, but distinct from all other major areas of business regulation in Australia apart from maritime regulation. Only 20 of 96 agencies in our wider study of business regulation in Australia have a policy of preferring to

direct prosecutions against individuals - seven of these were mine safety agencies.

Surrounding the policy of targeting individuals rather than companies is a statutory framework with mine safety agencies proper, though not so much with off-shore oil regulation, which defines the responsibilities of various individuals. This reaches its ultimate in the Queensland Coal Mining Act which outlines the duties of superintendents, managers, underground foremen, back-shift overmen, deputies, roadmen, shot-firers, winding engine drivers, boiler attendants, pitheadmen, weighers, pitbottomers, horsekeepers and drivers (!) and 'miners and all persons' for underground mines; the act also defines responsibilities in open-cut mines for open-cut examiners, mechanical engineers, groundsmen, open-cut coal mine electricians, and surveyors.

Australian mine safety laws thus render more difficult the classic defence by individuals culpable for corporate malpractice that the offence was the responsibility of someone else. With everyone blaming someone else, a picture of confused and diffused accountability typically makes prosecution of any individual impracticable. But when, as under the Queensland Coal Mining Act, just who will be held responsible for what is statutorily specified in advance, evading culpability is not so easy.

The New South Wales Coal Mines Regulation Act, 1982 is one of the most interesting regulatory statutes in the world in the way it ties up individual accountability principles. Where an employee is given an instruction by higher management or the owner to do something which compromises safety, the employee has a right to demand that the instruction be put in writing. It is an offence for the issuer of the instruction not to do so. Hence, if a manager is under pressure from corporate headquarters to cut expenditures on safety, he may request confirmation of such a suggestion in writing to make it clear who is responsible for any deterioration in safety at the mine. Indeed, when an instruction is given to a manager or any other employee that the manager believes would impede safety or health, the manager has a duty to prevent execution of the instruction until it is confirmed in writing (Section 54 (1)). This amounts to the law imposing a duty to put the heads of senior executives who compromise safety on the chopping block.

The law also forbids the issuing of any instruction to employees by the owner other than through the registered manager of the mine (Section 52). As in the other states, the law sets up the manager as the 'captain of the ship' (Braithwaite, 1985: 159), the ultimate responsible agent. The manager is empowered to delegate in writing certain of his duties to more junior employees, so long as the district inspector is notified of the delegation, and so long as the person who takes on the responsibility is willing to countersign the delegation. Where the delegate feels that the delegation is contrived to set him or her up as a scapegoat for matters

which should be the responsibility of higher authorities, provision is made for adjudicating the reasonableness of the delegation in a court of law (Section 57). The authority of the manager is further underlined by making it an offence to contravene any direction by the manager or a delegate of the manager where the direction is to secure the health or safety of people in the mine (Section 160). This makes the manager, no less than the government inspector, a *de facto* legislator underground with the authority to decide what is a crime and what is not.

The law is also designed to keep owners from meddling in the decision-making of the mine manager. It does this with the carrot of legal absolution for owners in any disaster so long as they do not interfere with the judgment of the manager. The Coal Mines Regulation Act makes it a defence in any proceedings against the owner for a violation of the act if the owner proves that 'He was not in the habit of taking, and did not in respect of the matters in question take, any part in the management of the mine' (section 164 (1)(a)). It is also a defence if the owner proves that the offence was committed without the owner's 'knowledge, consent or connivance'. The Queensland Mines Regulation Act, 1964 does not go so far. It simply states that 'The owner or authorized representative, not being a manager, or any person in a position of authority and control over the manager, shall not exercise his authority and control in any way to obstruct the manager in observing or enforcing the observance of this Act.' (Section 29).

In varying ways, then, Australian mine safety law and regulatory agency policy seeks to make the registered mine manager the person who is ultimately responsible. In practice, however, we have seen that only in the Northern Territory has most of the minuscule level of prosecution activity been directed against managers. Most Australian prosecutions have been of miners or their immediate supervisors.

Beyond a preference for targeting responsible individuals, and an ostensible desire in particular to hold the manager accountable, our interviews revealed only one other unwritten prosecution guideline of any significance. Five of the agencies mentioned that prosecution is more likely to be favoured where a fatality or serious bodily injury occurs.

All mine safety agencies rejected the concepts of prosecution crack-downs on a particular aspect of the law, single showcase prosecutions with maximum publicity, targeting of repeat offenders, or setting a target number of prosecutions to be achieved in a year. None of the agencies said they would be concerned if they had fewer prosecutions this year compared with last.

Beyond saying that a high level of prosecution was unnecessary, the main impediments to prosecutions mentioned in the interviews were deficiencies in the law make prosecutions difficult (5 agencies), delays in the criminal process (4) and low penalties make prosecutions not worthwhile (3).

Mine safety inspectorates have even more decentralised authority structures than general occupational health and safety agencies. With all nine, the policy was to delegate most discretion over how most offences should be dealt with to inspectors in the field. Again, as with the general inspectorates, five of the nine agencies did not even indulge in systematic monitoring of which inspectors were taking most regulatory actions of various kinds.

It is only in Western Australia, however, that the Crown Law Office does not take over prosecutions from the inspectorate. Four of the other agencies were critical in one way or another of the service they received from Crown Law and saw it as one justification for 'tree-stump justice'.

Sanction Other than by Prosecution

Harassment. Everything said about the use of follow-up inspections as a means of securing compliance with respect to general inspectorates is also true of mines inspectorates. Formal warning letters are perhaps used less frequently by mines inspectors as an alternative to return visits. In Tasmania, for example, we were told that a letter warning to desist from a practice in breach of regulations would occur on average only once a year.

Improvement Notices. Directives to do certain things by a certain time to ensure compliance or improve safety are usually delivered by the inspector issuing them verbally, and then writing in the record book, required at each mine, that the directive had been given. At the next inspection by either a government or union inspector, the record book will be consulted and a further entry will be made to indicate whether the directive has been complied with. No statistics are kept on the frequency of directives entered in record books, but they do seem to be a regular occurrence.

Prohibition Notices. Government inspectors in all jurisdictions have the power to stop work until the area of the mine is safe, and union inspectors have the power to stop production until a government inspector arrives. All agencies claimed that stopping production was a much more severe and immediate sanction than a prosecution. As a spokesperson for the Western Australian Petroleum Division said:

We can prosecute someone. Under the Direction, the maximum fine is \$2,000 per day. If we shut him down it can be \$100,000 a day.

At the same time, some cynicism is justified at claims that prosecution is rejected because the same punitive function is more effectively fulfilled by shutdowns. The representative of the Western Australian Petroleum Division quoted above went on to say that there were only

two shutdowns of oil rigs in 1984 and none in 1983. In mine safety regulation proper in Western Australia the estimate of production being actually shut down in a part of or a whole mine (as opposed to production being slowed down by someone being pulled off a shift to fix a problem) was 8-10 times a year. There have in Western Australia been occasions when entire mines have been ordered closed for 'a day or two' while ventilation problems were rectified. The point is that while this potent regulatory weapon is used, the frequency of its use would not seem to be greatly higher than prosecution. This is even more true in the Northern Territory where there has been only one case in recent times of a mine being shut down, albeit a celebrated one, where the Ranger uranium mine was closed for four days after an exposure of uranium tailings in a pond. This was an interesting case because it was one where shutdown was in the eyes of the Northern Territory Mines Department used punitively rather than to protect workers from immediate danger:

We closed Ranger down not because there was any serious danger or an incident out there, merely an exposure of tailings in a pond which caused no danger to health or the environment. However, it was symptomatic of a few laxities in the operation at that stage and also the thing was not detected by them and not reported for some time.

After indicating there had been no repetition of such laxity, the Director of Mining said that they had been given 'a message which they've since well and truly learned'.

The only other state from which we could extract information on the frequency of mine shutdowns was Queensland. In the Queensland coal industry, cases where either 'a section of a mine or a whole mine' was closed down occurred 'probably four or five times a year'. With metal-liferous mines, the response was 'less than five times a year'. These shutdowns 'can go from as little as one hour to situations that I can recall fairly accurately which have taken three days to correct'.

Injunctions. No respondents interviewed at mine safety agencies could recall an injunction ever having been sought from a court of law by their agency.

Seizure. Mine safety inspectors do not have any seizure powers at their disposal as an enforcement tool. Mines departments do have almost limitless powers when it comes to oil exploration including forfeiture of petroleum, ships, platforms, or other equipment but these have never been used and in practical terms are not available to safety inspectors as a regulatory tool.¹⁵

Licence Suspension or Revocation. Licence suspension or revocation is the other very powerful regulatory tool available to mining inspectorates. Strictly speaking, in most states this tool is in the hands of a board of examiners, but in reality it is the department which has the authority to

launch a credible threat to a person's certificate of competency. To cancel a mine manager's certificate of competency is to take away from him an extraordinarily remunerative livelihood. However, no one could tell us of any case where a manager had lost a certificate. Indeed, for five of the nine agencies there had been no suspensions or cancellations of licences or certificates of any kind in recent years. Even for some of the agencies counted as having used it as a regulatory tool, usage, was to say the least, sporadic:

I'm not aware during my experience with the Board of Examiners over the last four years of any 'show cause' matters ... I'm sorry, I am aware of one ... In that case the person failed to appear before the Board and left the state. That was not a mine manager, that was a mine official of lower rank than the manager, but an official who held a certificate issued by the Board.

Q. So he lost it?

A. Well, he's lost it as far as Queensland is concerned, yes, because the decision was taken in respect of his certificate without him appearing. He's no longer in the state (Chief Inspector of Metalliferous Mines, Queensland).

Similarly, officials of the Western Australian Department of Mines could recall only one example of suspension or revocation in recent times. On the other hand, as with all drastic sanctions, sometimes the threat of their use can be a lever to effective informal control:

We have to my knowledge in the last 10 years only threatened to take the mine manager's certificate of one person. In that instance we sent him a letter asking to justify why he should not return his certificate and a letter to the company asking why they should consider him competent ... It certainly caused quite a flurry with the company concerned and the gentleman was taken off the job within a month and replaced by somebody more acceptable to ourselves ... (Tasmanian Mines Department).

Adverse Publicity. Adverse publicity is used even less by mine safety inspectorates than by general occupational health and safety inspectorates. None of the agencies had ever issued a press release following a conviction to publicise the problem. Only the Northern Territory had ever named an offender in an annual report. Journalists were never tipped off to attend mine safety cases before the courts. However, five of the agencies had used adverse publicity in a preventive way without naming offenders, by describing the offence in general terms in an industry newsletter.

In Western Australia and Tasmania secrecy provisions in the law are interpreted as precluding adverse publicity by forbidding disclosure outside the Department of any information about particular cases.¹⁶ The attitude of most states was best summarised by the West Australian State Mining Engineer: 'Media campaigns are subject to abuse and are specifically avoided'.

Cost of Regulation

None of the mine safety agencies had conducted any cost-benefit analyses nor any systematic cost of regulation work, nor had the mining industry produced any such research. If anything the mine safety bureaucrats were even more disparaging of cost-benefit work than the general health and safety officers. As one senior Queensland respondent opined:

I don't really see how you could do a cost-benefit study on the question of health and safety of people. I wouldn't like to be asked to put a value on life. It seems to me to be a fairly pointless academic exercise.

This is not to say that the agencies are unconcerned about the cost of regulation. It is simply to say that they see quantitative analyses of costs and benefits in the occupational health and safety area as contrived and as not justifying the costs of doing the research. Indeed, as the following quotation from the Northern Territory Director of Mines illustrates, mine safety regulators see minimising the cost of regulation as one reason for 'one-stop shopping' where they take responsibility for all regulatory activities involving the mining industry.

We've got to sell more mining so we're not going to shut your job down. We've got a vested interest in making sure its done properly in a balanced way which impacts least upon economics. That's going to be a big thing in Australia in due course - a proliferation of authorities which get in each other's way and get in enterprise's way from producing earnings for Australia.

Inadequate Powers of the Agencies?

If inadequacy of powers was an improbable explanation for the lack of law enforcement by general occupational health and safety inspectorates, it is an impossible one in the mining sector. Most agencies indicated that they would like more human resources in response to the question: 'What additional powers or resources would better enable you to do the law enforcement part of your job?' But none said they would like stiffer penalties, improved statutory or investigatory powers, or the writing of new regulations. The remarkable response to this question was that every agency said they had no need for additional powers.

In one sense, this should not surprise us because the powers of mine safety inspectors are considerable. They have the power in all jurisdictions to enter mines, to search workplaces and to scrutinise company records for evidence of offending, without a warrant. Inspectors with six of the agencies have the power to compel mine employees to answer questions, though with only two of them can answers given be used in criminal proceedings against the individual for any offence other than failing to answer the questions truthfully.

An even more direct route to self-incrimination is provided in the

Tasmanian Mines Inspection Act 1968 (Section 7 (2)), the Queensland Coal Mining Act (Section 54 (2)) and the Western Australian Mines Regulation Act (Section 30(2)). These statutes require the mine manager to report to an inspector any breach of the act at the mine as soon as practicable after such breach is noticed! The admission must be in writing.

For seven of the nine agencies strict liability is dominant in most of the statutes administered by the agency. Some unusual provisions are to be found in these statutes which ease the burden of proving guilt. The Queensland Mines Regulation Act, 1964 makes it an offence for a person who 'by negligence, causes another person to be killed or injured or endangers the safety of any person in, or about a mine' (Section 65 (1) (a)). What is surprising is that the standard of negligence which must be proved to establish this criminal offence is not a criminal standard but a civil standard:

In this section the term 'negligence' means that degree of negligence which would render the person who thereby has caused another to be killed or injured liable for damages in an action brought against him by or on behalf of that other or his estate, as the case may require (Section 65 (3)).

Identical provisions exist in the Coal Mining Act, 1925-1974 (Section 104). In addition, this Act provides:

75. **Accident evidence of neglect.** The occurrence of any accident in or on a coal mine shall be prima facie evidence of negligence on the part of the owner and the manager. This section does not apply in respect of any action or other proceedings for the recovery of damages in respect of death or injury caused to a person by an accident which occurred in, on or about a coal mine.

On the other side of the ledger, an enormous obstacle to prosecution can be posed by an 'escape clause' which six of the nine agencies have in their statutes that compliance with the law is only required as far as is 'reasonably practical' (Hopkins and Parnell, 1984).

Six of the agencies have legislation with a 'general clause' which effectively forbids all other acts which endanger health or safety not covered by the regulations.¹⁷ All of the mine safety statutes empower inspectors to order that unsafe practices not specifically covered by the legislation cease or be changed, with failure to comply an offence, though the complementary Commonwealth and State Petroleum (Submerged Lands) Acts 1982 do not grant this power to inspectors of off-shore oil and gas production. Under this act, however, ministers can issue written directions. These directions are more flexible instruments than regulations in that they are issued immediately without even the parliamentary oversight provided for regulations and they can apply to just one rig instead of the whole industry. Most directions are written to apply to the entire industry, however, and non-compliance with them is no less an offence than non-compliance with a regulation. The directions in turn require operators to write and make available to the workforce 'Manuals

of instructions for safety in operations'. These 'shall be in accordance with but not limited to the requirements of the American Petroleum Institute, *Recommended practice for safe practices in drilling operations* ...'. Thus, in comparison to mine inspectors proper, the off-shore inspector loses quite a deal of discretion to ministerial directives and industry codes of practice.

Clearly there are areas where the law could be strengthened to enhance the law enforcement capabilities of mine safety inspectorates. The most notable example is the widespread escape clause of compliance only being required as far as is 'reasonably practicable'. The lead of the Victorian Occupational Health and Safety Bill 1983 in moving slightly from a 'reasonably practicable' to a 'practicable' standard may be one direction for improvement here.¹⁸ An even more preferable solution may be the New South Wales shift of the onus of proof onto the employer to demonstrate that something was not practicable.¹⁹ While the reaction of all mine safety agencies that they have all the powers and legislative tools they need to enforce the law must be taken with a grain of salt as the views of bureaucrats with little interest in law enforcement, they must also be regarded in part as a reflection of the enormous powers these agencies have in comparison to police forces.

Conclusion

Compared to occupational health and safety regulation, mine safety regulation is relatively well endowed with inspectorial resources and high-level expertise. It is even more proactive than general occupational health and safety enforcement: most problems are detected by unannounced site inspections, with inspections of remote oil rigs being the only domain where the normal policy is inspection with warning.

Mine safety regulation is more particularistic than general occupational health and safety regulation. Reliance on the book of regulations is much less than reliance on writing specific directions in the mine record book, requiring the manager to include provisions in his company rules which are appropriate to the unique circumstances in his mine, or use of indentures to specify contractually what is required of a particular resources project (e.g. The Roxby Downs agreement - see Chapter 6). Alternatively, particularism can be achieved by writing particularistic regulations (or Directions in the case of off-shore extraction) as provided, for example, by the Queensland Coal Mining Act.

111 ... Rules, whether general or special, made under this Act...

(b) may be made -

- (i) to apply generally throughout the State or within any part or parts of the State;
- (ii) to apply to all coal mines or to any class, number or description of coal mines; or

- (iii) so that different rules apply to coal mines of different classes or descriptions;
- (c) may adopt, wholly or partly, either by way of reference or express specification therein any of the standard rules, codes or specifications of the bodies known as the Standards Association of Australia, the British Standard Institution or a like body identified in the rules; and
- (d) may provide -
 - (i) that the Chief Inspector's approval is to be the standard applicable in respect of a particular matter;
 - (ii) that an inspector may direct or allow a rule or part thereof to be varied or modified in respect of the working of a particular coal mine.

Perhaps it is in part because the regulation is particularistic and is pursued by negotiation within a regular ongoing relationship between professional peers — the manager and the inspector — that the universalism and impersonality of prosecution is so totally rejected. The inspector knows he is 'getting things done' by informal means — by cajoling, encouraging, threatening to stop production, insisting that the company and the union effect their own internal discipline against offenders. Why should he jeopardise this progress by setting sharp-tongued lawyers on to them who have no interest in preserving relationships of mutual respect and accommodation? This thinking has merit, though we will suggest in Chapter 8 how it perhaps ought to be qualified. All we need argue here is that it is this thinking, and the regulatory framework which makes it almost inevitable, which fundamentally explains the rejection of prosecution by mine safety inspectorates. There is no reason to look for explanations in limitations of law and human resources. All else is secondary to the fact of a regulatory culture in which prosecution is something one does when the public has noticed blood on the floor and expects action to symbolise the need for the law to be obeyed. Prosecution, in this culture, is something for the benefit of outsiders.

Chapter 6

Radiation Regulation

A unique but important area of occupational health and safety concerns the exposure of workers to radiation. This area has tended to be segregated from the mainstream occupational health and safety agencies because it is impossible to separate the problem of worker exposure to radiation from general community exposure. From the dramatic prospect of a nuclear reactor meltdown to more mundane exposures in dentists' surgeries to radiation from an X-Ray machine, workers and other members of the community are exposed together.

There are five main areas of radiation regulation. First, there is radiation exposure in the mining of uranium and other minerals; second, exposure in the use of uranium in nuclear reactors; third, risks in the transport of radioactive materials; fourth, exposure during commercial, medical or scientific use; and fifth, hazards associated with disposal of used materials. In Australia, the first of these problems tends to be regulated by mines departments, the second by the Australian Atomic Energy Commission, and the last three by radiation control branches in state health departments. Each of these three institutional areas of regulation will be considered in turn below.

The McClelland Royal Commission into British Atomic Testing in Australia would seem to have been presented with considerable evidence of unnecessary exposure of Australian citizens as a result of inadequately regulated use of nuclear materials. In more recent years, however, Australia has avoided the major radiation disasters which have plagued some other countries. It could be argued that in this we have been lucky since serious incidents which, fortunately, did not produce disastrous effects have occurred in all five areas mentioned above. With mining, on 5 July 1982 about a tonne of yellowcake was accidentally discharged from the bottom of a bin at the Ranger uranium mine in the

Northern Territory. Two operators were enveloped in a cloud of dust as the yellowcake escaped. Even though the workers were not wearing respiratory protection for the full period of the spill, and as a result inhaled and ingested dust, serious health consequences do not seem to have resulted (Supervising Scientist, 1983: 27-29).

With manufacturing, on 6 July 1984 about a kilogram of uranium hexafluoride escaped from the Lucas Heights headquarters of the Atomic Energy Commission when a pipe joint failed. The gas, which is used in uranium enrichment, escaped into a laboratory where four people were working and then was ventilated out into the surrounding community.

Thirdly, the risks in transport were highlighted in November 1984 when a driver was exposed in five hours to the maximum radiation dosage considered acceptable for radiation workers in one year. The driver had transported isotopes around Sydney in an improperly sealed container before delivering them to Lucas Heights, where alarm bells started ringing as soon as the truck entered.²⁰

Irresponsible usage of radiation was highlighted by a 1982 report of the Victorian government's consultative council on radiation which was leaked to the press.²¹ The report raised serious doubts about the safety of X-Ray equipment being used in some Victorian hospitals and in doctors' and dentists' surgeries, suggesting that the dose of radiation for a particular procedure may vary up to 1000 times depending on the equipment used and the training of the operator. The Minister for Health, Mr Roper, conceded 'What has been shown in the report is that the Government's activities in the area of radiation safety have been grossly inadequate. There is a lack of effective legislation in the area and a lack of enforcement of the legislation that is there'.²² Even more frightening incidents have occurred with industrial usages, as illustrated by the following remark of one government respondent:

Well, we suspect that there were situations, not so much in hospitals or establishments controlled by the Department of Health, but in other circumstances there were reported incidents that were fairly horrifying. Like people having nuclear-radioactive gauges on hoppers and various places and dropping dynamite down the hold and this sort of thing to clear blockages. Which is pretty horrendous.

J.B. Yes, that sounds not too good.

That's on file, too. As a reported incident. Somebody got the hopper clogged so they dropped dynamite down.

Finally, disposal of wastes has probably been the subject of most controversy in Australia. This has ranged from allegations that 44 gallon drums containing radioactive waste had been dumped 200 nautical miles off the Queensland coast in the 1950s, to public questioning by a former technical secretary of the Atomic Energy Commission of how the Commission should deal with 1,000 used fuel rods which would remain radioactive for 100,000 years.²³ Perhaps the most immediate concern

has been provoked by the indiscriminate dumping of lower level radioactive tailings from mineral sands mining in Queensland and northern New South Wales. Hundreds of householders who were sold the radioactive tailings in Queensland to use as fill in their backyards have been told that they must remove the health risk at their own expense, an expense that can run to many thousands of dollars when swimming pools and other structures have been built upon the radioactive fill. At Byron Bay, the final cost of removing radioactive soil from under over 100 homes, schools and other buildings will be more than a million dollars.²⁴

Mining and Radiation

As the last paragraph shows, it is not only uranium mining which poses radiation risks. Film badge monitoring by the Western Australian Health Department has suggested that average radiation exposures for workers in the mineral sands industry have at times in the past been higher than for uranium miners (Jennings, 1982: 11). Uranium miners are at risk of cancer caused by prolonged exposure to low levels of ionising radiation. This exposure occurs in two ways: direct exposure of the body to gamma radiation emanating from the ore body; and the inhalation of radioactive dust and of radon and thoron gases and their 'daughters', which expose the lung tissue to alpha radiation as these radioactive gases decay (Basuk and Nichols, 1979).

Monitoring these problems is a collaborative effort between mines and health departments in the states where they occur. In the Northern Territory, the Office of the Supervising Scientist for the Alligator Rivers Region also monitors and reports to the responsible Commonwealth Minister on environmental protection and health and safety at the Ranger and Nabarlek uranium mines. The Office in general leaves the enforcement activity to the Northern Territory Department of Mines, being content with the role of a watchdog which trusts that goodwill and the fear of exposure will exert influence:

The threat of our writing to our Minister either to advise him about a particular matter or formally to report to him under a section of our Act that would require the report to be tabled in Parliament is often sufficient for the N.T. or the companies or anyone for that matter to take note of what we say.

Having substantially covered the framework of mine safety regulation in the last chapter, all we need do here is to add some additional features peculiar to the regulation of radiation risks in mining. Uranium mining regulation is more like the regulation of pharmaceuticals than it is like other mining regulation. A particular project is not allowed to go ahead until investigation of the benefits of the activity are concluded after extensive enquiry to exceed its costs (including occupational health

and safety costs). This is akin to drug regulation in which products are kept off the market until particularistic assessment concludes that benefits exceed risks, rather than the general assumption with mining that any mining activity should go ahead unless there are unusual circumstances. The Northern Territory Uranium Mining (Environment Control) Act, forbids any uranium mining without an appropriate and specific authorisation issued by the Minister for Mines and Energy.

When uranium mining projects are authorised anywhere in Australia the authorisations define or refer to standards, describe practices and list the monitoring or protective measures required of each operating company as conditions for continued activity. In the Northern Territory where most activity is currently occurring, these include occupational hygiene and safety programs which are clearly laid out in the authorisations. The companies are also required to report infringements and 'unusual events' to the Minister for Mines and Energy so that these might be fully investigated.

That is to say, uranium mining in Australia is subject to particularistic prior approval, and following approval, specification of the standards and procedures with which the particular project must comply as opposed to enforcement of a generally applicable statute. In South Australia, this model has also essentially been followed with the Roxby Downs indenture agreement. On the other hand, the particularism of this agreement is qualified in the occupational health and safety area by almost total reliance (as opposed to partial reliance in the Northern Territory) on requiring the joint venturers to comply with five voluntary codes, most notably the 'Code of Practice on Radiation Protection in the Mining and Milling of Radioactive Ores, 1980'. In addition, the joint venturers are required to comply with any Commonwealth or states act dealing with matters covered by any of the codes. Thirdly, there is an overriding obligation to abide by the principles recommended by the International Commission on Radiological Protection, which require exposures to be maintained as low as is reasonably achievable, even though legal requirements may be less stringent (Warnick, 1983). Between them, these requirements in theory leave little scope for anything but the highest practicable standards.

When we visited South Australia, the Department of Mines and Energy made it clear that it could not afford the regulatory resources deployed in the Northern Territory for the Ranger and Nabarlek Mines. This is hardly surprising. Where else in the world indeed would one find a luxury like the Office of the Supervising Scientist: 71 people to monitor how another agency regulates activities at two mines and to do research on the health and environmental impacts of the mines. The Office of the Supervising Scientist was created as a result of a unique recommendation on Northern Territory uranium mining of the Fox Royal Commission

(1977). Undoubtedly, however, the political sensitivities of Roxby Downs will see a relatively well resourced regulatory regime, though equally undoubtedly it will be of the same non-adversarial, non-prosecutorial quality that has characterised all uranium mine safety regulation. Equally, the mineral sands industry, which today only has a substantial presence in Western Australia, is dealt with in cooperative style. Voluntary company agreement to abide by the same international codes as specified in the Roxby Downs Indenture Agreement and co-operative audits of exposure levels by government and industry are the cornerstones of this regulatory domain.

In summary, regulation of radiation safety in mining operations in Australia is characterised by prior approval of projects following detailed evaluations of benefits and social costs; negotiated, contractual or voluntaristic reliance on codes of practice which are mostly international in origin; particularism; agreements between industry and government to share responsibility for monitoring exposures and audit such monitoring (with industry doing most of the monitoring and government most of the auditing); and total rejection of law enforcement as the regulatory model.

The Australian Atomic Energy Commission

Australia has only two operational nuclear reactors, both at the Australian Atomic Energy Commission (AAEC) establishment at Lucas Heights near Sydney. The Commission is Australia's only producer of radioisotopes and radiopharmaceuticals and has an extensive program of nuclear research. A major independent survey in 1979 (Ferguson, 1979) suggested that the Commission has a very good occupational health and safety record. The area is well resourced. For a staff of just over 1,000, there are 45 full time occupational health and safety personnel. These staff have multiplied their impact by involving unions in an on-site health and safety committee and a Safety Review Committee of outside experts. Management believes that the on-site committee has been important in creating a climate where the organisation learns quickly from its mistakes:

The moment one of our health and safety people is on the floor and happens to say, 'Look, stop that, it's not safe', you can guarantee industrially that it stops immediately ... But of course accidents occasionally happen, particularly in the radioisotope area where they're handling relatively large quantities of radioactivity. You occasionally get a contamination, a minor contamination spread. That immediately freezes all that work until it's cleaned up, but there's never any conflict there because the people working in the area are just as keen to get it cleaned up as the safety people.

On the other hand, Lucas Heights, as a Commonwealth establish-

ment, never receives visits from New South Wales state government occupational health and safety inspectors. Thus there is no independent enforcement of compliance with occupational health and safety standards and no chance of anyone ever being prosecuted. One defence which management of the Commission offered against the need for routine independent inspection is that as a government monopoly they are not under the commercial pressures to cut corners that are characteristic of nuclear reactor operators in other countries:

Q. What happens when there's a conflict between production and safety, where the health and safety division wants to see something happen to make things work safer and people who are trying to get stuff out the end of the production line say 'That's cost ineffective?' How are those disputes resolved?

A. I would say, generally speaking, they're resolved without compromise to health and safety. Generally speaking, we tend to be gold-plated. In fact, our production people would say that our costs of production are high for radioisotopes and a lot of that is due to the fact that we lean over backwards because these people have visited overseas laboratories run commercially and we would never get away with what goes on ... For example, all our apparatus with which we handle these significant quantities of radioactive material, we have to have steel. But I know in one overseas plant I won't name on the tape, that's a world leader in this area, they have glass apparatus. Now that's much cheaper. But if you have a breakage, you've got a real problem on spillage and having to clean up a hell of a mess which gives your workers exposure ... Our safety officers will not allow that. Apparatus cannot be built of glass ... Provided that we're not required to be fully commercial, commercial with a capital C, then I think the Commonwealth ought to be a leader in this area of occupational health.

It is all very well to say that the AAEC is not under the commercial pressures of private companies, but it has pressures of its own — to meet production targets necessary to satisfy the demands of scientists, hospitals and other important customers who do not like to be told to wait. From such fragmented accounts as we get, the Soviets do not have an outstanding record of nuclear safety, and the profit motive cannot be cited as the source of their problems (Trabalka et al., 1980).

In other areas, there has been a recognition of the need to separate regulator from regulatee. In 1978 the function of safeguarding against the diversion of nuclear materials to unaccountable destinations was taken away from the AAEC and handed over to the Australian Safeguards Office which, even though its officers continue to be located at Lucas Heights, answers to the Minister for Resources and Energy rather than the Chairman of the AAEC. The Office is responsible for guaranteeing that Australia meets its safeguarding obligations under the Nuclear Non-Proliferation Treaty. Further independence is guaranteed in this domain by independent inspections two or three times a year by the International Atomic Energy Agency.

A degree of independent audit is also provided for with respect to monitoring exposure risks for the community and environment outside

the plant. Four aspects of the waste management operations at the Lucas Heights Research Laboratories could impact on the surroundings:

First, low-level radioactive liquid wastes after treatment together with treated sewage are discharged to the regional sewer line that has its outfall on the Cronulla peninsula. Second, the ventilation of HIFAR (the reactor) and several of the research laboratories involve discharges from stacks. These air streams can carry low-level radioactivity that is almost invariably gaseous. Third, until the mid-1960s, low-level solid radioactive waste was buried at Little Forest, an area close to the fenced section of the Lucas Heights Research Laboratories. Fourth, stormwater could carry contaminants from the site to the fresh water section of the Woronora River (AAEC, 1982).

Prior to every discharge, CSIRO officers at Lucas Heights monitor whether discharge of liquid effluent complies with an authorisation under the NSW Radioactive Substances Act. The Metropolitan Water Sewerage and Drainage Board maintains its own sampling station on the effluent line near the Lucas Heights boundary fence and the Health Commission of N.S.W. carries out some monitoring for radioactivity at the various sewerage outfalls and checks the radioactivity levels of air filters on smokestacks.

If multiple sources of ongoing external inspections are justified with regard to the risks of diversion of nuclear materials and contamination of the surrounding community, one wonders why they are not regarded as a necessary protection against the contamination of workers within the establishment.

The most catastrophic exposure workers risk would arise from a failure of one of the reactors. This hazard is monitored by a unique semi-independent regulatory regime. Line management decisions on reactor safety are subject to audit by the Regulatory Bureau, a group of 15 located at Mascot in separate offices from the rest of the AAEC. The Director of the Regulatory Bureau does not answer to the Director of the Lucas Heights Research Establishment, but rather reports directly to the Chairman of the Commission. On the other hand, the Director of the research establishment does have effective control over the Regulatory Bureau budget; hence the description semi-independent.

The fundamental operations of the Regulatory Bureau work in the following way: operations management of the AAEC submit plans for any modifications to the reactors along with safety analyses of the projected impacts of changes to the Bureau. The Bureau then raises a number of questions, management comes back with answers, the Bureau asks a new series of questions, until ultimately a set of satisfactory answers and amendments to plans has been made so that the Bureau can submit to the Commission a recommendation that the modification be endorsed. The Chief Executive of the AAEC explained the situation as follows:

... it will not endorse proposed modifications to the reactors until certain other changes are made. In other words, they'll say to me if you've put up a proposal to

modify the emergency core cooling circuit in a certain way: 'Now we do not approve that until you've established the failure rate of this component at less than one in 10⁵ or something. Or if you can't do that you've got to find some other way'. And they don't tell me what that other way is. In other words, it's not their responsibility to tell me how to do it, only to say whether it's acceptable or not.

The Director of the Regulatory Bureau, in the following extensive quotation which outlines his regulatory philosophy, confirms that the preferred approach is one of setting performance standards rather than detailed specifications:

You can either regulate prescriptively, you can define, tell everyone just what they should do, or alternatively you can tell everyone the goal they have to achieve, giving them a degree of flexibility to meet that goal. It is, in the nuclear industry, the big difference between the approach of the Americans and the United Kingdom. In the United States they have a completely prescriptive form of regulation. It is probably inevitable there because they have a Nuclear Regulatory Commission which is responsible for regulating a large number of operators and those operators are essentially private. In fact Americans can tell you quite horrifying stories about one utility which had never run a power station; it went straight into the reactor business... So the point I want to make is that in the States they have a large number of very diverse operators — diverse in competence and in responsibility. So perhaps that is forced on them, the idea of prescriptive regulations. And that means that the NRC is constantly churning out very, very detailed regulations on what every operator must do and they have a very extensive system of checking on that ... they just fined someone a couple of million dollars... But the criticism you can make of the prescriptive form of regulation ... is that you are really transferring responsibility away from the operator back to the regulator, because he is now coming to rely on you; if he has done it according to the book then he thinks he has done it well enough. That's a very dangerous situation ... We always feel that the most important thing is the person who is operating the plant should have a safety concern himself. He must be worried about safety; it is not good enough that he simply feels he is meeting all the rules and regulations. In Britain they have got two main electricity generating boards. They are the only people who have reactors, so they are starting from a different base and the Nuclear Installation Inspectorate simply puts out a series of guidelines. They license reactors; they don't say for a licensed reactor it has got to meet these sorts of standards; they say, look, we will want to be satisfied that in the event of this type of accident that there would be no possibility of getting exposures above these levels around the site — the goal rather than the way you achieve it. The reason this has always been the United Kingdom philosophy is that by doing this you don't stifle the innovation of the people doing it ... you leave the safety challenge with them ... we have adopted a philosophy which is very much the United Kingdom one and the Commission issues a thing which is called an authorisation, a document of 30 or 40 pages which sets down all of the goals, all of the things it wants attended to. Then the Director has a responsibility to make a detailed document with arrangements on how he is going to achieve those goals. Those then come to us and we decide whether or not they are adequate and then we make a recommendation to the Commission. If they are accepted by the Commission, then ... we eventually finish up with an approved set of regulations, a very voluminous amount of documentation.

The Chief Executive of the AAEC explained that the Regulatory Bureau also seems to have an extraordinarily ambiguously defined power to stop production:

The Director of the Regulatory Bureau has the right to instruct me to close the reactor down. Now, I am really bound by that except if I was to feel that there was some overriding safety consideration. I mean I can't think of what that would be at this stage. There have been some arguments as to whether he should have the absolute power ...

Q. That's not a matter of legislation.

A. Oh, no. It's a matter of internal Commission policy, that's all.

Perhaps partly as a result of the performance rather than prescriptive approach to regulation, there is not an acutely adversarial relationship between the Bureau and management. The Director of the the Regulatory Bureau sees dangers in too arms-length an approach and advantages in being unashamedly part of the same professional club. One perceived advantage is the greater frankness with regulators who are part of the same collegial environment, and ultimately that means a greater capacity to draw out whistle blowers. It is clearly a less drastic action to blow the whistle to the Regulatory Bureau than it is to someone completely outside the nuclear scientific club. The following exchange with the Director of the Regulatory Bureau illustrates the non-adversarial nature of the relationship:

Q. So how often is the Commission getting a different perspective from the Regulatory Bureau than from management, so that the Commission has to choose or make a compromise.

A. So far not very frequently at all, and I think the more they do the less successful we are.

The Regulatory Bureau believes that the best counterbalance against co-optation by binds to the Australian nuclear scientific club is building a stronger commitment to another club — the international 'scientific engineering safety world'. If the Regulatory Bureau and individual scientists within it are to have a name in this world, 'then you are only going to do it by showing that you have got this sort of critical nature'. So the Director of the Regulatory Bureau saw his challenge as building an organisational culture, an esprit de corps, where his scientists feel they are judged more against the standards of scepticism and independence of the international community of safety professionals than judged by their fidelity to the camaraderie of the Australian nuclear club.

The Director of the Regulatory Bureau was optimistic, in spite of all of the commitment to collegial regulation, that if it came to the crunch of recalcitrant disregard of safety by the Commission, he would be able to blow the whistle:

... if I thought I had fairly honestly disagreed with the Commission and they had rejected all that I had said and then if I, without malice, and it would be important

to be without malice, just said, 'Well okay I feel this strongly enough to make it public', I don't see that there is really anything stopping me from going and making it a public issue ... the situation is then going to be exposed; there is going to be some outside judgment introduced into it.

Q. But on the other hand if you were an ambitious young person in the industry, that might be a pretty drastic thing that would put your career in jeopardy with the heavies, mightn't it?

A. Yes, that's about it. So the lesson is that you have non-ambitious old people in these jobs.

The Director's throw-away reply about the virtues of grey eminences who are past personal ambition deserves to be taken more seriously than perhaps he intended. At the same time, no regulatory arrangement is satisfactory which depends for its success on extraordinary preparedness to put one's head on the chopping block such as one could only hope to find among older people who have left ambition behind them. Public policies which are workable only at the hands of extraordinary people are bad public policies.

In a regulatory regime, if one realistically wants the capacity for open public accountability in critical situations when sound safety advice is ignored, one prerequisite is a regulatory agency which is administratively and financially independent of regulated organisations. In a real crisis over how to trade off safety and production, a regulatory director who answers to the chairperson of the agency itself has little real capacity to stop the lid being put on his or her requests. A health and safety chief who reports to the chief executive rather than the Commission itself has even less clout. It is all very well to say that the experience of the AAEC is of exemplary safety performance and that in the past there have been no major crises where reports requiring action on safety have been ignored and hushed up (Ferguson, 1979). But when we are dealing with catastrophes of extremely low probability but of huge proportions, past experience is not a reliable guide to future action. Air New Zealand had the lowest fatality rate of any airline in the world prior to the Mt. Erebus disaster; afterwards it had the highest. Organisational pressures to advance the program have to compromise safety only once over a period of many decades to produce a catastrophe. Evidence that occupational health and safety and reactor safety functions of less than fully rigorous independence have not suffered a major breakdown in the past is not persuasive in a context where maximum feasible safety assurance can be the only yardstick.

There is no reason why cooperative relationships between regulator and regulatee characterised by frank confrontations of the problems and an absence of prescriptiveness cannot be achieved by an agency which is independent of the industry. There are dozens of such business regulatory agencies in Australia outside the realm of nuclear regulation. Consider, for example, the relationship which has existed, until the 1985

entry of foreign banks, between the Reserve Bank and the four major trading banks.

As two officers of the AAEC commented in explaining the historically very low level of accidents in the nuclear industry worldwide: 'The low level of risk which experience has led us to expect from a nuclear power industry depends upon effective supervision of the industry by an independent regulatory organisation'. (Higson and Crancher, 1976: 6). In this, they were certainly not talking about Australia.

The Australian Labor Party in the election platform passed at its 1982 conference decided to legislate for 'an independent regulatory authority responsible for nuclear related environmental protection, health, safety, security, safeguards and other non-proliferation activities.' In the rout of anti-uranium forces at the 1984 conference, this policy was deleted from the platform. It seems Australia will now have to wait for a major nuclear safety disaster for fully independent nuclear safety regulation to be put back on the agenda.

Radiation Control Functions in State Health Departments

In all states we discussed with health departments the role they played in occupational health generally and radiation safety regulation specifically. The size of radiation safety groups in health departments ranged from one health physicist in Tasmania to a staff of 15 in New South Wales, though Victoria is about to overtake New South Wales with an expansion of staff to 22.

These agencies are responsible for assuring the safe use of irradiating apparatus and radioactive substances for diagnostic purposes and treatment (i.e. radiotherapy). Industrial and research uses of ionising radiation, including the use of unsealed radioactive substances in nuclear medicine and pathology are also monitored. Compliance with regulations concerning the safe transport and disposal of radioactive substances are other responsibilities. It is possible that the new Commonwealth Environmental Contaminants Authority will assume some of the state health department responsibilities in years to come on the question of safe disposal of wastes. Inspection of X-Ray machines in medicine, dentistry and veterinary practice is the area which consumes most resources.

The statutory framework for state radiation regulation is very similar in all the states. New South Wales has the most dated and inadequate framework, while the 1984 Victorian Health (Radiation Safety) Regulations under the Health Act 1958 constitute one of the most impressive legal frameworks for business regulation to be found in Australia. Like the Australian Atomic Energy Commission's approach, there is a strong orientation towards performance rather than specification standards. For example, instead of prescribing exactly how radioactive wastes should

be disposed, the Victorian Regulations provide:

1302. A person responsible for the disposal of radio-active wastes shall release those wastes only in a manner that could not cause any person to receive more than the annual dose equivalent limits prescribed in these Regulations.

The next regulation then defines an upper limit for the concentrations of radioactivity permissible at the time of discharge. A second impressive feature is the commitment not only to national uniformity but also to international uniformity. For example, Section 1201 requires that transport and storage of radioactive materials be in accordance with both the Commonwealth Code of Practice for the Safe Transport of Radioactive Substances and the International Atomic Energy Agency Regulations for the Safe Transport of Radioactive Materials, 1973. The regulation then goes on to assure Victoria the sovereignty to vary these provisions where exceptional local circumstances demand, by providing that 'Where the Code or International Regulations conflict with these Regulations then the provisions of these Regulations shall prevail.'

The heart of the regulatory regime in all states is registration of irradiating apparatus and radioactive sources and licensing of persons qualified to use them. Licensees and employers are required to report to the health department instances of excessive exposures which come to their attention. The regulations also make it possible for organisations to be required to appoint radiation safety officers with duties which are specified in the regulations or such other duties which may be specified as a condition of licence.²⁵ This facilitates a regulatory strategy whereby many of the monitoring and accountability responsibilities which might otherwise be borne by government inspectors are placed on the shoulders of a qualified radiation safety officer within the organisation who is on hand all the time.

State regulations also impose a general duty to keep radiation exposures no higher than is absolutely necessary. For example, the New South Wales regulations require:

8. (1) Every person who has in his possession or custody or uses any radio-active substance or irradiating apparatus, shall take steps to ensure that the radiation dose received by any person or any part of any person, is no greater than is absolutely necessary and that in no case does it exceed the appropriate maximum permissible dose.²⁶

Consistent with this general duty much of the regulatory effort of radiation control functions in health departments is directed at educating people in ways of reducing unnecessary radiation. This may involve discouraging employers from unnecessarily requiring X-rays of employees, or teaching professionals how to achieve with two X-rays something they might previously have done with four. As with the other types of agencies discussed in this report, education and persuasion are

regarded as more important functions than law enforcement. Achieving the minimum standards required by the regulations is regarded as a grossly inadequate yardstick of success.

Self-regulation is not a term which leaves these agencies uncomfortable in the way it does some general occupational health and safety agencies. Their commitment to self-regulation, to getting professional associations of radiographers and others to develop and implement their own voluntary codes, is strong.

These inspectorates are, on the other hand, highly proactive. They are not heavily dependent on complaints as generators of regulatory action; their approach is to get out and randomly inspect sites where radiation is occurring. Inspectors are typically well qualified graduates in health physics, radiography or related disciplines.

A Victorian officer could have been speaking for any of the states when he said:

The unit regards itself not as an inspectorial group or a police force but as a scientific organisation, and the regulations are just to aid them to do what they are on about and that is reduction of radiation dosage throughout the community. So if we can achieve that without using the regulations, we do it.

Self-monitoring of radiation exposures combined with government audit of the self-monitoring are crucial to the regulatory strategy in all jurisdictions. All persons who may be exposed to ionising radiation as a result of their work must have their exposures monitored by their employer. Usually the approved method of achieving this is by the use of personal film badges issued by the Australian Radiation Laboratory, though three states issue their own. Licensees are also required voluntarily to report excessive exposures immediately.

The audit of exposure self-monitoring which health departments do is generally not undertaken simply with the goal of keeping employers honest but more as a diagnostic occupational hygiene service. To illustrate, the South Australian Health Commission spokesperson distinguished the Commission's work from the overlapping work of the Mines Department as follows:

The Mines Department have obligations to make sure that a mine is a safe working place, and they interpret this as including making sure that the radiation levels are ... below standards ... We try to do more monitoring which is diagnostic, if you like, to try and attempt to find the causes or trends, or whatever. Mines stuff is more towards regulatory type things, like it is over a limit or below a limit.

This is not to say that there is not an important element of keeping employers honest as well. When the independent monitoring of radiation exposures by health departments yield very different results from those reported by employers, they are called to account. What we have been leading to with all of the foregoing, however, is that prosecution is quite unimportant as a regulatory tool for radiation safety.

No state or territory radiation control agency has had more than one prosecution in the 1980s and most of them have had none. In addition to a strong attachment to a cooperative regulatory style, problems of proof are important in explaining this almost total absence of prosecutions.

... suppose you've got something that is relatively straight forward - the film badge comes back with a large dose on it. You have to prove, there's a very long chain of links in there, that the person was wearing that film badge, that they didn't receive any radiation dose while it wasn't being worn, that it was collected properly by the company, that it was sent to the laboratory properly, that they analysed it properly, etc.

In addition, there is the problem common to all toxic exposures that while average exposure over a period (a year in the case of radiation) is the criterion of importance for persuading a court of serious risk to an employee, this may not be known, and what is known - an unacceptably high exposure at one point of time might be discounted as safe when very low exposures for the rest of year are taken into account. So what does the South Australian Commission do when it discovers unacceptably high levels of worker radiation exposure?

... if certain high levels are reached or measured, then certain steps will be put in train to reduce them, so the first stage obviously would be re-monitoring to check ... I mean you'd look around for reasons for it. Was it a transitory breakdown in the ventilation system or was there a deep-seated long-term reason, and then, this sort of tome of causes has to be worked through, and the penalties would be directed towards ensuring that these steps to find the reason for high levels and take appropriate action are taken.

There can be no doubting that the very limited experience with prosecution in this area has been discouraging. In New South Wales there have been only two prosecutions in the last 25 years. One of these resulted in a fine of \$500 for an offence which cost the government over \$15,000 in radiation clean-up expenses. The second case has cost the Health Commission thousands of dollars in legal fees because the doctor concerned retained one of Australia's top QCs to appeal his sentence - a fine of several hundred dollars. At the time of interview, it had been two years since the unresolved enforcement action had been initiated.

The result is that New South Wales has an enforcement pyramid that now effectively excludes prosecution as an option for escalating regulatory response in the face of recalcitrance: 'We rely first on advice, then on a more forceful letter, then threat of licence loss'.

The ultimate step under this enforcement pyramid of actually suspending or revoking licences also occurs very infrequently in all states. Imposing special conditions on licences is another *de facto* sanction which is occasionally used. It is common for the preparation of a radiation safety manual to be required as a condition of licence; in problem cases considerable detail can be insisted for such a manual with regard to

listing of hazards, precautions, emergency procedures, specification of detailed lists of duties for responsible officers, constant supervision of certain areas, or appointment of specialised expertise such as a nuclear medicine specialist.

Another sanction which most jurisdictions employ is putting a notice on a machine to prevent its use until it is made safe in compliance with the regulations, or in extreme cases the equipment or radioactive source can be seized. New South Wales is one jurisdiction which does not issue such prohibition notices. It does not have the power to do so under what is the most outdated statute in the country. As long ago as 1980 the officer in charge of the NSW Radiation Branch complained in a submission to the Williams Commission of Enquiry into Industrial and Occupational Safety and Health:

A number of weaknesses, relating to occupational radiation exposure, have shown up in the application of the Act and these include:

- (1) there is no provision to enforce, by reference, Codes of Practice or Australian Standards;
- (2) there is no power whereby a person can be required to design and construct equipment to ensure that such equipment is as inherently safe as is reasonably possible;
- (3) there is no power to prevent the sale of equipment that is considered to be unsafe;
- (4) there is no power to permit the issue of compliance or prohibition certificates. Such certificates could be used to ensure that equipment is made to comply with a standard or that the use of equipment is prohibited until certain repairs or alterations are carried out;
- (5) there is no provision requiring an employees' representative to be selected and for him to be made aware of reports of inspections along with any recommendations, or for him to be consulted when any problems or changes in work technique are being considered;
- (6) there is no provision to compel employers to prepare, and make known a code of safe working procedures for his plant. The R.A.C. (Radiation Advisory Committee) has requested some industrial radiography organisations to do this but it would be better for the requirement to be incorporated in the Act;
- (7) there are no provisions to safeguard people from hazards associated with some non-ionising radiations (for example lasers, microwaves, ultraviolet, infrared, etc.) and it is essential that such a power be included because of the proliferation in the use of these radiations and because the Standards Association of Australia (S.A.A.) has developed a number of standards in this area. A standard is only an advisory document and hence comment (1) above is most important;
- (8) the responsibilities relating to radiation incidents or accidents are not clearly set out in the regulations and neither are the obligations to report such accidents to the R.A.C.

Adverse publicity is not an informal sanction which most of the states like to use. 'In such a sensitive field as radiation', we were told, 'it gets out of hand very quickly.' In fact, regulatory efforts were directed

much more at calming what were seen as alarmist media coverage of radiation hazards which surfaced from time to time. While radiation safety regulators would never dream of fostering adverse publicity for offenders, they often use the spectre of a voracious press to persuade licensees to follow their advice.

Radiation is a very emotive topic and often the warning to industry that a certain practice could result in a certain incident is very helpful. Just the expression to a user - a mine, mill or factory - that this could get you in the newspaper, often gets prompt attention from senior management.

In summary, radiation regulation by state health departments is characterised by reliance on self-regulation and professional education, imposing conditions of licence which improve prospects of low exposures, and industry self-monitoring of exposures combined with government audit. Government checking of exposure levels is aimed more at a diagnostic service to licensees with problems than at policing the integrity of their self-monitoring. Where the advice which follows problem diagnosis is ignored, regulatory response escalates to stern warning letters, to threatened revocation of licence, to actual licence revocation, suspension or imposition of more stringent licence conditions. Prohibition orders are also used in most states. Prosecution is almost never used.

Chapter 7

Attitudes of Top Occupational Health and Safety Officials

This study has thus far surveyed the enforcement policies and actions of Australian occupational health and safety regulatory agencies. At the end of each interview for this study we handed a 19 item attitude questionnaire to the most senior respondent present. In all but two cases this person was the top executive in the regulatory agency concerned,²⁷ the key policy maker in the organisation. Where, as was the case in most interviews, there were other more junior officers present, they were also given copies of the questionnaire and the senior public servant almost invariably consulted them on all his answers. Thus the data were by and large generated via a highly unusual procedure of filling out a questionnaire by small group consensus.

This procedure of allowing consultation by the senior bureaucrat with colleagues was not inappropriate because we did not ask for personal views. The instruction printed on the questionnaire was: 'For each of the statements below, please tick the box which most accurately reflects your agency's position'. What we found remarkable was how easy it was for the small groups of bureaucrats — as many as five — to reach consensus on which was the right box to tick on what one would have thought were some contentious questions of regulatory ideology. Such disagreements as arose were only in the nature of whether to tick 'agree' or 'inclined to agree'. Respondents exhibited remarkable mutual assurance about their answers. Frankly, we had expected that our little questionnaire would not work, that respondents would equivocate or balk at filling out a questionnaire on their agency's regulatory ideology, and that they might be embarrassed as public servants to profess an agency ideology in the presence of colleagues. Instead they openly consulted with each other over whether they had ticked the box which reflected the 'correct line'.

Nineteen questionnaires were completed - eight by general occupational health and safety inspectorates, seven by mine safety inspectorates and four by radiation safety inspectorates within state health departments. There were no notable differences in responses according to the type of agency, and bearing in mind the small number of responses overall, it was decided to limit this report to consideration of the combined responses of all 19 agencies.

For each statement respondents were able to tick 'strongly disagree', 'disagree', 'inclined to disagree', 'inclined to agree', 'agree', or 'strongly agree'. Because of the small number of cases, and for simplicity of presentation in Table 10, the three disagree categories and the three agree categories are combined.

TABLE 10
Regulatory Attitudes Questionnaire

	Agree		Disagree	
1. It is better to seek to persuade companies to comply with regulations voluntarily even at the risk of being considered 'soft'.	14	(74%)	5	(26%)
2. A large number of prosecutions is a sign that a regulatory agency is failing in its job of achieving compliance by more efficient means.	14	(74%)	5	(26%)
3. It is best for regulatory agencies to adopt clear interpretations of the law and stick by them.	15	(79%)	4	(21%)
4. Most companies are sincerely interested in conforming to regulatory standards.	16	(84%)	3	(16%)
5. Most companies are law abiding; they try to follow the standards simply because a government agency has issued them.	12	(63%)	7	(37%)
6. A large number of prosecutions is a sign that a regulatory agency is doing its job.	0	(0%)	19	(100%)
7. Most companies are mainly out to 'make a buck', and will avoid conforming to regulatory standards if at all possible.	2	(11%)	17	(90%)
8. Without the penalty imposing powers your agency has, many companies would simply ignore your regulatory standards.	11	(58%)	8	(42%)
9. It is best to obtain compliance with the law by advice and encouragement rather than prosecution.	19	(100%)	0	(0%)
10. It is best for regulatory agencies to be flexible in interpreting the law.	12	(63%)	7	(37%)

TABLE 10 (cont.)

	Agree		Disagree	
11. It is better to be a tough enforcer of regulations, even at the risk of being considered punitive.	2	(11%)	17	(90%)
12. Businesses more often than not ignore requests or directions from your agency.	0	(0%)	19	(100%)
13. Businesses usually do what your agency asks of them.	19	(100%)	0	(0%)
14. Enforcing the letter of the law is the best way to deal with business.	2	(11%)	17	(90%)
15. The relationship of my agency to the businesses which we oversee may best be described as adversarial.	1	(5%)	18	(95%)
16. Businesses always place profit ahead of the welfare of the community.	5	(26%)	14	(74%)
17. I expect my officers to use common sense by applying the law in a way that is not dogmatic or legalistic.	19	(100%)	0	(0%)
18. The relationship of my agency to the businesses which we oversee may be characterised as based on negotiation, mutual accommodation and compromise.	14	(74%)	5	(26%)
19. Businesses in general are socially responsible and most of their decisions are made in the public interest.	9	(50%)	9	(50%)

It is easy to summarise the results in Table 10. The attitudes reflect an overwhelming rejection of adversariness. A cooperative ideology is embraced, a law enforcement ideology rejected. This preference is not endorsed by a bare majority; there is virtual unanimity. All respondents agreed that 'It is best to obtain compliance with the law by advice and encouragement rather than prosecution'(9).

Business is trusted, viewed as socially responsible and anxious to be law-abiding. Only three would express any disagreement with the statement that 'Most companies are sincerely interested in conforming to regulatory standards' (4). Only two felt that 'Most companies are mainly out 'to make a buck', and will avoid conforming to regulatory standards if at all possible'(7). Most are willing to reject a conception of business as placing profit ahead of the welfare of the community.

If, before administering this questionnaire, one were to have classified each question according to whether agreement meant a response sympathetic or unsympathetic to business, in only one case could the results that eventuated be interpreted as a response unsympathetic to business. This was on the question, 'Without the penalty imposing powers your agency has, many companies would simply ignore your regulatory

standards' (8). Fifty eight per cent agreed that penalty imposing powers were necessary. Of course, the other responses suggest that while they view penalty imposing powers as necessary, they do not want to impose penalties. This is consistent with what was said earlier about cynical attitudes towards self regulation among general inspectorates - their rejection of punitiveness does not mean that they would trust business to write their own rules. The majority preference is to walk softly and carry a big stick, though there is also support in some quarters for the school of thought that even carrying the big stick is unnecessary. Support for the view that regulators need neither the use nor the potential to use penalties is particularly strong among the mine safety agencies.

One should always be sceptical of interpretations based on questions such as those in Table 10 which inevitably, because of their brevity, force people into overly simplistic representations of their views. We place much more store in the transcripts of our semi-structured interviews which allowed the senior public servants to express their regulatory policies and ideologies in their own way without any compulsion to fit themselves into our predetermined categories. Nevertheless, the structured questionnaire is an opportunity to use a different method to reassess some of our conclusions. If the questionnaire data are a more accurate reflection of reality than our conclusions from the interviews about the rejection of adversariness and the trust in business social responsibility, then the latter conclusions are somewhat understated.

One of the things one must be cautious about with questionnaires such as this is response bias. It is easy to deal with acquiescence bias by balancing the numbers of items where agreement and disagreement imply attitudinal responses in the same direction. This we have done: there are as many items where to agree is to give a response sympathetic to business as there are responses where to disagree is to do so. But what of the more general problem of the inclination to tell researchers what it is thought they want to hear? In the present case we are not as disturbed by this problem as we would normally be. Because one of us works at the Australian Institute of Criminology and both of us were known to the respondents as people who study law enforcement, one can only suppose that respondents would guess that we would think law enforcement to be a good thing. Indeed, some of them said as much to us. Thus, any inclination to express views perceived to be in agreement with those of the researchers would run in the opposite direction to the way the data in fact turned out.

Conclusion

The questionnaire data have not told us anything that was not clear following our interviews, though they have perhaps affirmed one key

impression from the interviews in a more overwhelming way that we would have expected. This impression is that the low level of occupational health and safety prosecution in Australia is not primarily attributable to inadequate laws, insufficient law enforcement powers, frustration at delays in the courts, or a shortage of inspectors. All of these may be problems. But the fundamental reason for low levels of prosecution is a regulatory policy backed by a regulatory ideology which sees little or no place for prosecution. Arming a regulatory agency with better laws and resources to facilitate prosecutions will not change anything if the agency does not want to prosecute. The next chapter is devoted to the question of whether Australian occupational health and safety agencies should want to prosecute more than they do.

Chapter 8

The Art of Strategic Enforcement

Justice and Occupational Health and Safety Enforcement

Occupational health and safety offences are crimes. There can be no dispute about their status in law. Yet our interviews clearly showed that occupational health and safety bureaucrats do not view them in this way and totally reject application of a criminal justice model to their task:

We do monitor our inspectors and we want them to be reasonable and sensible in their dealings with industry. If a person isn't, and does seem to be too much of a policeman, well we talk to him about it. And, in fact, when we interview people for the job we try to make sure that we don't get a policeman type.

In this, the inspectorates are reflecting the influential philosophy of the British Robens Report:

... the traditional concepts of the criminal law are not readily applicable to the majority of infringements which arise under this type of legislation. Relatively few offences are clear-cut, few arise from reckless indifference to the possibility of causing injury, few can be laid without qualification at the door of a particular individual. The typical infringement or combination of infringements arises rather through carelessness, oversight, lack of knowledge or means, inadequate supervision or sheer inefficiency. In such circumstances the process of prosecution and punishment by the criminal courts is largely an irrelevancy ... (Robens, 1972: para 261).

Recent years have seen increasing criticism of this view. Referring to the penultimate sentence of the above quotation, the Report of the South Australian Occupational Safety, Health and Welfare Steering Committee (1984: Vol.1, p.20) rebutted:

It is the view of this Steering Committee that rarely has there been a greater apology for lawless behaviour on the part of employers, than this sentence from Robens. Apparently it did not occur to the Robens Committee that there might be a link between failure to enforce the law and 'carelessness, oversight' etc. It is our view that when a worker is killed, the people responsible should be brought to justice and punished.

Another commentator has been even more contemptuous of this passage from Robens:

Why should not dangerous offences be the subject of prosecution if they are committed through 'carelessness, oversight', etc. merely because the dangerous consequences of those offences were not intended or, perhaps, foreseen? Are not factory occupiers deemed to intend the natural and probable consequences of their actions like other citizens? Proof of a guilty mind is not required against motorists prosecuted for careless or dangerous driving; why should a different standard apply to careless or dangerous employing? Why should employers be immune from punishment if they fail to acquire the knowledge or means to comply with the law, and proceed nevertheless to make their living illegally? How, if it is to be their statutory duty to provide a safe working system, can inadequate supervision or sheer inefficiency constitute either a defence or an excuse? It is precisely for failing to plan and supervise efficiently the safety of their operations that they should be prosecuted and punished ... (A.D. Woolf, quoted in Creighton, 1983: 201-2).

There has over the past decade been some backlash against what Carson (1979) has described as 'the conventionalisation of factory crime'. By this Carson meant the process whereby the British Factories Act of 1844, which set out to criminalise hazardous work practices and which in its early years was characterised by a relatively high level of prosecution, was transformed so that offences against the Act were viewed as customary and indeed, often not regarded as really constituting crimes at all. One would not want to overstate the extent that de-conventionalisation is going on. However, a new awareness by trade unions of occupational health and safety risks has created a climate where a major enquiry such as that of the South Australian Steering Committee can so aggressively reject decriminalisation. Indeed, it has made possible Commonwealth funding of a study such as the present one. Worldwide, the last decade has seen a dramatic hardening of community attitudes toward white collar crime. Recent reviews of public opinion surveys from many countries, including Australia, show that since Watergate citizens have become very punitive in their attitudes to crimes by corporations, particularly offences which cause physical injury (such as occupational health and safety offences).²⁸ In the face of this large body of survey research evidence, it is no longer reasonable to assert that ordinary citizens are tolerant of the crimes of respectable business people while supporting extraordinary punitiveness toward the crimes of the powerless.

It is not the purpose of this study to adjudicate between the relative strengths of these competing interpretations. For our purposes, it is sufficient to suggest that the inspectorates do have attitudes which are out of touch with those of the general community, if not those of the business community.

Are these attitudes wrong? At this point we as authors should make

our own values clear. The regulators we interviewed felt that their responsibility was to use enforcement in a way that maximised safety rather than in a way which gave offenders the punishment they deserved. In this, we absolutely agree with them. It can be an irresponsible indulgence of retributive urges to punish a wrongdoer who deserves it when a cooperative appeal to the offender's better nature to mend his or her ways is likely to build a stronger commitment to safety consciousness in future. Saving lives is more important than indulging our resentment of wrongdoing. This conceded, the difficult judgment is then to decide what mix of punishment and gentle persuasion is optimal for safety. The remaining sections of this chapter are devoted to a consideration of how best to find the correct balance.

The troubling fact is, though, that given the great things that can be achieved by using a cooperative strategy much of the time, punishment is bound to be rejected for many, many offences which the community would adjudge as deserving of punishment. Even more troubling is the fact that policies of declining to punish most occupational health and safety offences are part of the fundamental injustice of our legal system — it is a legal system which favours gentle persuasion for dealing with the offences of the powerful and imprisonment for crimes of the powerless. Crimes which the community views as equally serious are treated more punitively if the offender is an unemployed youth than if the offender is a middle aged business executive. The more we reject punitiveness in favour of cooperative occupational health and safety regulatory styles, the more we widen this structural inequality in the justice system in the area of greatest concern to citizens — offences which do physical injury to persons. At some point, regulators confront a trade-off between creating a more just society and a safer society. They can deal with the moral dilemma by saying that their statutory responsibility is safety, not justice, or that structural injustice can as easily be achieved by letting working class criminals out of prison as it can by putting occupational health and safety criminals in prison. But ultimately there is no escape from the fact that their approach to enforcement is a significant part of class bias in our justice system.

In this chapter, we will argue for greater use of prosecution than is the status quo, but it will still be a level far short of that which would achieve equal treatment of those whom the community may perceive to have done wrongs of a magnitude equal to those who inhabit our prisons. This greater level of prosecution is justified purely on the grounds that it would improve health and safety. It would also lessen structural injustice in the legal system without creating a situation anywhere near equality. We, like the bureaucrats we interviewed, reject creating equality by throwing occupational health and safety offenders in prison. Imprisonment is a barbaric way of solving problems, a punishment which should

only be resorted to when it is the only way society can protect itself from a criminal.²⁹ That is, imprisonment in our view should be equally a sanction of last resort for common and white collar offenders.

In summary, there is a need to demystify the Robens philosophy that occupational health and safety offences are somehow devoid of wrongdoing in a way that is different from other types of offences; we must recognise that occupational health and safety enforcement strategy has implications for the social justice of society as well as for the safety of its workers; but ultimately, we side with the regulators in the view that their responsibility is to give priority to saving lives. Those, then, are our values on the matter. We hope that readers who reject them, who feel that regulators should allow considerations of social justice to overrule the improvement of safety in some circumstances, will still find some use in our arguments on the (for them) narrow question of how safety can be maximised.

Cooperative Versus Punitive Regulation

In Chapter 1 it was concluded that a large proportion of serious accidents are the result of violations of law. This would seem to support a punitive philosophy of regulation. Elsewhere, one of us has also reviewed the literature suggesting that law enforcement probably does prevent accidents (Braithwaite, 1985: Chapter 4). This is so because business offenders are highly deterrable. As Chambliss (1967) pointed out, white collar offenders can be deterred because they have no commitment to crime as a way of life, and their offences are instrumental rather than expressive. Corporate violations, such as those of safety laws, are almost never crimes of passion; they are neither spontaneous nor emotional, but lie in the domain of calculated risks taken by rational people or organisations. The assumptions of economic rationality which underlie the deterrence doctrine therefore have an applicability which is lacking for crimes like rape or murder. Incapacitation is also a more viable doctrine with safety offences than with common crime. Criminology has adequately demonstrated the policy of incapacitating criminals in prisons as a failure. In contrast, when occupational safety offences are occurring a company can readily be incapacitated from committing further offences by shutting down the factory; an officer can be effectively incapacitated by taking away his or her certificate of competency. Rehabilitation has also been a failure with common crime (Lipton, Martinson and Wilks, 1975), but it has been argued elsewhere (Braithwaite and Geis, 1982) that rehabilitation of defective standard operating procedures is a common response to prosecutions of corporations. Rehabilitation is a strategy more workable with business crime than with common crime because criminogenic organisational structures are more malleable than criminogenic human personalities.

Since deterrence, incapacitation and rehabilitation are all such viable doctrines for dealing with occupational health and safety offences, punishment ought to have an important place in any regulatory strategy. But in circumstances when there is willingness to do the right thing, across-the-board punishment is not the best strategy for maximising compliance. For all sorts of reasons, such as beliefs that accidents disrupt production or genuine concern to protect human life, much of the time there is a willingness of managers to do the safe thing. In everyday life, punishment is the strategy we use when good will is lacking; persuasion is the preferred approach when good will is evident. The competent school teacher, for example, only punishes children who are not trying; to punish children who are trying their hearts out can only sap their will to keep at it. Sometimes the teacher will give a second chance to a student who might be alienated by punishment. 'That's not like you, Johnny', the teacher will say, in the hope that through this expression of trust and confidence the child's will to behave will be enhanced. This strategy is no use with students who haven't a flicker of will to behave; with them, a second chance will only be interpreted as weakness.

Thus, using persuasion on people with no will to comply can be as counterproductive as using punishment on people who are trying their best. It follows that both a regulatory strategy of uncompromising and consistent punishment and a strategy of total reliance on persuasion are doomed for failure.

At its worst, an uncompromising punitive strategy can lead to what Bardach and Kagan call an 'organised culture of resistance' — a culture that facilitates the sharing of knowledge about the methods of legal resistance and counterattack. As an example, Bardach and Kagan cite the advice of one legal expert to appeal all Occupational Safety and Health Administration citations, not just those to which companies object strongly, so that they can 'settle a case by giving up on some items in exchange for dismissal by O.S.H.A. of others. Those who leave certain things uncontested are needlessly giving up this possibility' (1982: 114).

Punishment and persuasion are based on fundamentally different models of human behaviour. Punishment presumes human beings to be rational actors who weigh the benefits of noncompliance against the probability and costs of negative sanctions. Persuasion presumes people to be reasonable, of good faith, and motivated to heed advice. Neither model fits very well the situations safety inspectors confront in the field. But the punitive model is a better fit in some situations, and the persuasive model, in others. Hence, any philosophy of regulation that limits inspectors to either model will hamstring the efficacy of inspection.

The problem with persuasion is that, based as it is on a model of man as basically good, it fails to recognise that there are some who are not, and

thus will take advantage of being presumed to be so. The problem with the punitive model of man as essentially bad is that we dissipate the will of well-intentioned people to comply when we treat them as if they were ill-intentioned. We need inspectors who have the common sense to select the right model at the right time.

Dissipating the motivation of people to strive for safer workplaces is a disastrous consequence because the punitive law enforcement alternative can never fill the gaps left by the failure of persuasion. With all complex areas of business regulation, one can never write rules to protect people against all the unsafe practices that can occur. Since building consensus to write new rules is a difficult and time-consuming process, since rule writing does not keep up with rapidly changing technology, and since every workplace poses unique safety problems, government regulations never cover the field. It was pointed out to us by executives of many inspectorates that if they enforced strict compliance with their regulations, they would enforce a far lower standard of safety practice than they in fact do. It is persuasion, heeded by responsible managers, which achieves the higher standards.

Achieving better than the minimum standards set down in law is imperative, but inspectors will not succeed if punishment has been used with so little finesse that they lose their capacity to persuade. Perhaps one reason that the United States has such a shocking coal mine fatality rate is that trust and respect between inspectors and managers has been lost by blunderbuss punishment policies. As the chief executive of the Bituminous Coal Operators Association said when one of the authors interviewed him: 'Lives are lost because of inspectors with the paper syndrome and companies with the 'How do we minimise the violations?' syndrome'. While there is more than a grain of truth in this statement, it is also true that lives are lost because of the failure of punishment to punish in an effective and discriminating way.

Regulatory agencies which never or rarely punish are toothless; they can be conned and coopted. But regulatory agencies such as the U.S. Mine Safety and Health Administration which impose penalties as a knee-jerk response make very inefficient use of their scarce resources — M.S.H.A. inspectors spend an enormous amount of time which could be spent in mines writing citations and fighting appeals against fines. Good enforcement is, first of all, the art of selecting the most strategic cases for the time consuming business of punishment. Secondly, it is the art of imposing punishment when needed without undermining the capacity of inspectors to persuade.

The power to punish helps give legitimacy to regulators who wish to persuade. One is inclined to listen to the persuasive overtones of an inspector if the consequence of not listening is that the velvet glove will be replaced with the iron fist. In an impressive formal game theoretical

approach, Scholz (1984) has shown that a strategy of cooperative regulation until there is recalcitrance is superior to a policy of relentless punishment or endless reliance on persuasion. He concludes superiority for 'a combination of cooperative and deterrence routines in an enforcement strategy that is at once vengeful and forgiving' (Scholz, 1984: 179).

Scholz also draws upon the experience of Chester Bowles (1971) at the U.S. Office of Price Administration during the war. Bowles suggested that about 20 per cent of all firms will comply unconditionally with any rule, about 5 per cent are always going to disobey, and about 75 per cent are also likely to comply, but only if the threat of punishing the incorrigible 5 per cent is convincing. It follows to the extent that these figures are even vaguely correct that 'voluntary compliance' by the largest percentage of firms depends on deterring the incorrigible minority.

Towards Diagnostic Inspection

We have seen that Australian general occupational health and safety inspectorates have programs characterised by ritualistic inspections by poorly qualified inspectors. In addition to rarely prosecuting, these inspectors do not mobilise management and workers to redesign workplaces to make them safer, to write safety policies and to internally enforce them. The competent inspector should do all of these things. It is not good enough to wander around with a rule book which explains how to deal with very few of the real problems encountered and tap people on the shoulder whenever a breach is detected. Dependence on poorly qualified inspectors with rule books has meant an emphasis on physical hazards which are easily observed or measured — whether guard rails are the correct height or machinery has the prescribed guards. Even at the level of prosecutions we have seen that these simple observables are where the action is. Complex problems which require diagnosis tuned to the realities of a particular hazard environment are ignored. This is why enforcement is almost never directed at occupational health exposures in Australian factories, even though unhealthy practices are at least as great a problem as unsafe practices.

The situation with mine and radiation safety inspection is better, with inspections being undertaken by qualified people who have the skills to diagnose defects in control systems if not in management systems.

Enforcement of specific regulations comes to grips only inadequately with the poor work habits that are the cause of most minor accidents or the poorly conceived management plans that are the cause of most disasters. The problem of poor work habits can only be dealt with by the job safety analyses and training programs that the safest companies adopt

(Braithwaite, 1985: Chapter 3). Inspectors can assist job safety analysis by adopting a diagnostic and catalytic role. Bardach and Kagan underlined this point by quoting the safety director of a large corporation on what he thought Occupational Safety and Health Administration inspectors should do in the US:

O.S.H.A. inspectors have the right to talk to employees. They'll go up to a machine operator and ask if everything is O.K. What they really mean is, 'Is there a violation I can write up?' If the man points out a broken electrical cord or plug, the O.S.H.A. guy will just write it up and put it on the list of citations. What they should do is this: He should ask the employee, 'How long has it been that way? Did you tell your foreman about it?' He should call over the foreman and ask why it was still that way. Maybe the foreman will say, 'I've told him three times... you're supposed to go to Supply and get a new cord'. Then why didn't he? Maybe his job is set up so he can't. Maybe the inspector will find out there's no procedure for checking cords, or that there is but that the employees don't know it well (Bardach and Kagan (1982: 148- 9).

It is conceivable that nitpicking punitive enforcement of specific rules can even corrupt the integrity of a total safety plan for a workplace. For example, forcing a non-gassy mine to drive an extra tunnel to come into compliance with ventilation rules might so weaken the roof that the roof control plan is compromised. It is easy to see how a regulatory game of cat-and-mouse, whereby companies defy the spirit of the rules by exploiting loopholes, and government writes more and more specific rules to cover those loopholes, can ultimately lead to a rule making by accretion that gives no coherence to the rules as a package. Instead of dealing with the underlying problem (how well the total safety plan hangs together), regulatory cat-and-mouse leads to a barren legalism fixated at the level of specific regulations. Under a regime of legal gamesmanship, the temptations for inspectors to concentrate on simple and visible hazards rather than on underlying problems, is especially severe.

This is not to say that there is no place for punitive enforcement of specific regulations in a sensible regulatory scheme. There is an important place for it, but one must be wary of what Merton (1968: 194) called 'ritualism' in which the means to an end (specific regulations) became all-important at the expense of the end itself (improved safety).

Diagnostic regulation recognises both the importance of specific regulations and the limits of the letter of the law. The most important enforcement activity is directed at companies which fail to have or to abide by plans to deal with hazards when they are required to have such plans by law, at companies which fail to meet a performance standard after the inspector has shown management how the standard is attainable by reorganising the workplace or work routines. The diagnostic inspector spends less time at workplaces with solid management systems

for monitoring and compliance internally, more time with companies who think a safety engineer, a company safety inspector and a union-management safety committee are a waste of money.

The South Australian Occupational Safety, Health and Welfare Steering Committee recognised the need to direct enforcement at employers who impose unsafe systems of work on employees, as by creating work environments which lead to repetitive strain injury. The Committee quoted as a model the following U.S. Occupational Safety and Health Administration citation against a Virginia textile company:

The employer did not furnish employment and a place of employment which were free from recognized hazards that were causing or likely to cause death or serious physical harm to employees, in that: apparel plant employees engaged in repetitive motion operations were subjected to excessive muscular stress to the shoulders, arms, wrists and hands, which resulted in an occupational disease, repetition motion trauma. A program addressing bio-engineering and ergonomic aspects of each work operation imposing undue muscular stress on employees had not been implemented in order to limit employee exposure to this hazard and to the resulting debilitating effects of carpal tunnel syndrome, tendonitis, numbness and tingling of the hands, loss of strength in the hands, and sprains and strains in the hands, wrists, arms, and shoulders. Factors contributing to this situation included but were not limited to: work methods, design layout and machine specifications which did not incorporate ergonomic considerations. (O.S.H.A., 1980)

Diagnostic regulation requires inspectors who have experience of the relevant industry, an understanding of technical systems and how to change them, and an appreciation of management systems and how to change them. That means experienced graduates, not the artisans that most general occupational health and safety inspectorates retain, nor fresh faced graduates straight from university, and certainly not the cadets which the Queensland Industrial, Shops and Factories Inspectorate recruits from school and put in the field after 48 hours training. It means turning some of the rhetoric of Robens into regulatory practice.

Towards a Hierarchy of Regulatory Response

It is neither surprising nor alarming that Australian occupational health and safety agencies do not set target numbers of prosecutions. Regulatory resources are finite. The responsibility of occupational health and safety agencies is to achieve the maximum improvement in safety possible with the limited inspectorial and other resources at their disposal. A policy of litigious enforcement directed at each offence detected is clearly not the best way of doing this and in fact is impossible unless we are willing to employ inspectors in the kinds of numbers we see in state police forces.

Elsewhere, one of the present authors has argued for a hierarchy of

regulatory response which enables occupational health and safety agencies to save more litigious approaches for the areas where they are most needed (Braithwaite, 1985b: Chapter 5). The arguments of that book will not be repeated in detail here. But in brief it contends that there is a need for agencies to rely on self-regulation in some areas, to escalate this to 'enforced self-regulation' when firmer assurances of compliance are necessary or when self-regulation fails, then to escalate to command regulation with discretion to punish, and finally, command regulation with nondiscretionary punishment. Under the latter ultimate strategy, whenever a safety violation of a particular kind is discovered the inspector has no discretion but to initiate prosecution, production shut-down or both.

Such an inflexible ultimate strategy may seem extreme even as a last resort. However, we believe it is cogently argued in that book that if agencies are to be able to use gentle persuasion effectively most of the time, industry must see very clearly that some of the time the agency is willing to escalate its regulatory response to extremes of punitiveness. Moreover, all-or-none punitiveness is a blunt regulatory instrument. As in all negotiation, from superpower confrontations to local industrial disputes, parties are more likely to change the behaviour of others if they can show they mean business by escalating response through several increasingly punitive stages short of the ultimate card they can play. Good negotiators prefer to have an array of intermediate strategies sufficient to show that they mean business without ever having to play their last card.

This is why intermediate strategies like self-enforced regulation are important (Braithwaite, 1982b). Under enforced self-regulation, companies basically write and enforce their own safety rules. The role of the regulatory agency is to ratify the rules (or return them for redrafting) and to audit the company's internal enforcement activities. The company rules, once ratified, have the full force of law, and companies which are discovered by audit to flout their own rules can be prosecuted.³⁰ Another intermediate strategy which we have seen is used in Australia is to require single companies to write safety policies or industries to write codes of practice. However, these strategies have not been pursued with any seriousness because no company has ever been prosecuted for failing to write a safety policy, and, except in the mine safety area, it is not possible to prosecute for failing to abide by a privately written code (Gunningham, 1984: 109-10, 119-20).

It is not part of our mission here to draw out all of the advantages and disadvantages of the various possible intermediate strategies available (but see Braithwaite, 1982b; 1985). Our point is simply that there is a need for some kind of variety in regulatory strategies which range from the cheap to the costly, from the cooperative to the punitive, so that when industry refuses to play ball with the cheap cooperative strategies, regu-

latory escalation can be used to communicate to them that cooperation is the better way to play the game. Equally, a hierarchy of regulatory response can be used to hold out the carrot of a shift in a deregulatory direction if industry gives specific undertakings to improve its internal compliance activities.

A hierarchy of regulatory response from the cooperative to the punitive is not only necessary to maximise the bang for the regulatory buck. It is also desirable in minimising the cost of regulation for business and in protecting the public interest from wild industry claims about regulatory costs. Allowing companies to write their own rules tailor-made to their unique circumstances, as in enforced self-regulation, permits industry to avoid the costs of complying with across-the-board regulations which are unnecessary for them but very necessary in other industrial circumstances.

Industry is well known for exaggerated claims about the costs regulation will pose. The best documented instance in the occupational health and safety literature is tougher vinyl chloride standards in the US which industry projected would have compliance costs of \$65 billion and cause a loss of 1.6 million jobs (Mendeloff, 1979: 52-56). In the event, industry figures showed no job loss and compliance costs of around \$300 million (Gunningham, 1984: 362). One of the advantages of a hierarchy of regulatory response is that claims of inordinate costs as a result of a regulation can be met with a commitment that after an appropriate trial period, evidence of unreasonable costs can result in negotiations to partially deregulate down the hierarchy of regulatory strategies. For example, a strategy of nondiscretionary enforcement action against offences of a certain type can be de-escalated to discretionary enforcement wherever compliance is 'reasonably practicable' (Gunningham, 1984: 318-19) or reliance on prohibition notices which leave the company free to decide how they achieve compliance rather than reliance on universalistic specification standards (Gunningham, 1984: 332). Better to have rapid and flexible response than regulatory paralysis that so often occurs in the face of cataclysmic predictions concerning costs of regulation.

There is no occupational health and safety agency in Australia which has a sophisticated hierarchy of regulatory response in the way that, for example, the Trade Practices Commission has. There have been experiments with creative intermediate strategies between the extremes of self-regulation and command regulation with nondiscretionary punishment. However, in no case have these been articulated as part of a negotiable hierarchy of regulatory response where compliance performance determines the response. Rather, they have tended to be advanced simply as replacements for older, 'less cost-effective', approaches. Consider the following example from the 1983 Annual Report of the

Industrial Safety Division of the Northern Territory Department of Mines and Energy.

The Division is moving away from its traditional role of inspection and is now developing expertise in other safety areas so that we may offer a wider range of safety services to industry (p. 35).

An 'Inspection Assurance' program was started with Nabalco at their Gove bauxite/alumina plant. Under this arrangement Nabalco carry out a degree of 'self-inspection' with an in-house team of inspectors monitoring machinery safety conditions throughout the plant. The role of the Branch inspector is to carry out limited inspections and to monitor the activities of the inspection team. With the resultant decrease in workload, this inspector has been relocated in Darwin (p. 39).

In most areas of occupational health and safety enforcement in Australia, far from a hierarchy of regulatory response, there is one level of response — nonenforcement. This is true with respect to even some of the most serious hazards in the Australian workplace, such as asbestos. Recall, for example, the following quote from a senior Queensland public servant about their largest asbestos-using industry: 'James Hardie is a big company which monitors its own asbestos and so we're happy to leave them alone'. Even more startling were statements of the New South Wales Chief Inspector of Mines on the fact that there has never been a prosecution in New South Wales for illegal asbestos dust counts even though inspectors consistently found grossly illegal asbestos exposures whenever they visited the James Hardie mine at Baryulgil. The statements were made on 10 February 1984 before the House of Representatives Standing Committee on Aboriginal Affairs:

CHAIRMAN: Given that you and the Government departments of the day discovered how dangerous this thing was, you never thought about taking a test case? Admittedly only a \$200 fine could be imposed but publicity would be generated. It never entered your head that you would bring action which would expose the dangers?

CHIEF INSPECTOR: I was never a publicity hunter.... I will never be convinced that prosecution is the answer. The answer is the psychology to get to the people and tell them to work safely.

The disturbing thing about these and other statements of the Chief Inspector before the Committee was that he really believed that there was a single best strategy - education and persuasion - which in all circumstances is superior to other strategies, notably prosecution and public exposure. Agencies which put all of their regulatory eggs in one basket like this are bound to have disasters such as the Baryulgil asbestos mine, and are bound to be treated as a joke by cynical operators who perceive their unwillingness to escalate regulatory response under any circumstances.³¹

The Enforcement Pyramid

We have seen that it is advantageous to have the capability to escalate a regulatory strategy through various stages from self-regulation to command regulation with nondiscretionary punishment. Equally, once we are plugged into a punitive strategy, it is advantageous to be able to escalate the seriousness of offences and the severity of sanctions. The primary reason for this is that regulating large companies is a negotiating game in which those defending the interests of safety (primarily government inspectors) do not always have more bargaining chips than those defending the interests of production. An enforcement pyramid in which most offences are at the base, receiving gentle sanctions, and progressively fewer suffer the tougher options, puts offenders in fear of the possibility that they will be among the few who will have the book thrown at them. Equally, it can give them hope that, even though they are guilty of a more serious offence, if they do all the inspector bids by way of reform — and do it quickly — they might receive more lenient treatment. Even when 'plea bargaining' of this sort does not really take place, the very fact that officials can and do escalate punishment can generate a suspicion among offenders that it is best to toe the line.

At the base of any enforcement pyramid must be an attempt to try first to appeal to the better nature of people by reasonable requests and educative appeals. When these meet resistance, the gentle harassment which we have seen Australian agencies to use regularly — follow-up inspections, formal warnings to corporate headquarters — is the obvious first escalation. Then it would be desirable for inspectors to be able to employ a further increment in severity by issuing small on-the-spot fines like a traffic policeman. No Australian occupational health and safety agency has such a power. The ultimate sanctions would be full-scale criminal prosecutions where heavy penalties could be imposed, orders to stop production, and licence suspension or revocation. Which of these was the more severe escalation from small on-the-spot fines would depend on the circumstances. When the agency desires to make an even stronger example of a company which has been unusually recalcitrant, it can combine one of these ultimate sanctions with adverse publicity and public shaming, as by issuing a press release announcing that a factory has been closed down or a company convicted for hazardous practices (Fisse and Braithwaite, 1983).

Another suggestion for increasing bite at the tip of the enforcement pyramid is to create an offence of 'industrial homicide'. The Amalgamated Metal Foundry and Shipwrights' Union and the Federated Engine Drivers and Firemen's Association have been advocates of this option (Williams, 1981:43). Industrial homicide would be an offence whereby 'any employer or its authorized officer who either by an act or any omission to act, in breach of their duties howsoever imposed by law,

which results in the death of an employee(s) shall be guilty of the offence of homicide' (Tubbs, 1983: 37).

This is hardly a radical proposal since our criminal justice system has long countenanced manslaughter convictions for dangerous driving and convictions for the less serious offence of causing death by dangerous driving. In the offence of culpable driving where death ensues, the prosecution is not required to prove *mens rea*.

The dangerous element of the offence is to be judged by objective standards of driving. 'Was the driver driving inattentively to the danger of the public at the time of the impact?' is the question to be answered. (Tubbs, 1983: 35).³³

Indictments of companies for homicide over workplace deaths have generated considerable community interest on the rare occasions when these have occurred in the United States.³⁴ It is hard to imagine any more potent way of signifying the wrongdoing involved in gross industrial recklessness.

To complete the potential for escalating punitive response, it is desirable for courts to make available to agencies a disparate arsenal of sanctions. This may in turn best be expedited by providing for two-track justice where minor offences can be penalised after proof of the offence to a civil standard, and where serious or wilful offences can attract heavier criminal penalties after proof beyond reasonable doubt (Fisse, 1983: 1211-3). The Trade Practices Act is one Australian regulatory statute which provides for both civil and criminal penalties.

We have seen that the fine is the almost universal occupational health and safety sanction in Australia. Imprisonment is never used though it is available in many statutes³² and both the New South Wales Williams Report (1981: 3) and the South Australian Steering Committee Report (1984: Vol.1, p.195) have recommended that it should be used selectively. Whether or not one accepts our view that imprisonment is a last resort for protecting society which should never be necessary with occupational health and safety offences, the fact is that courts will rarely, if ever, impose prison sentences whatever the law says.

Thus, there is a need to search for other alternatives to the cash fine. The desirability of alternatives partly springs from the well documented awareness of the limitations of large fines as a sanction against corporations — the danger that they will ultimately be borne by consumers in higher prices or by workers through retrenchments. And of course small fines are flea bites that large companies do not feel. As one inspector complained:

All fines for genuine non compliance are far too low. An inspector spends many hours, even days, on collecting evidence for prosecution only to have an \$80.00 fine recorded for the loss of a women's [sic] three fingers. If one were to be cynical, an injured person's exposed red meat in a store after the close of trading hours could bring a penalty of \$10,000 (South Australian Occupational Safety, Health and Welfare Steering Committee, 1984: Vol.2, p.67).

There are some exceptional statutes where heavy monetary penalties are provided for. For example, health and safety offences in Northern Territory uranium mines can be fined up to \$100,000 plus \$10,000 for each day the offence continues under the Uranium Mining (Environment Control) Act, 1979 (Section 27). However, the pattern has been one of fines at a level which are to large corporations less than a \$5 parking ticket is to wealthy individuals.

Punishing corporations is the difficult challenge — individuals are much more vulnerable either through fines or other available sanctions such as suspending a ticket of competency. The capacity of corporations to evade the impact of punishment is legendary in the corporate crime literature. Diversity of sanction options is one way of giving courts an opportunity to tailor a penalty which will be difficult for a corporation to evade.

Companies are more likely to take notice of punishments when they are varied in nature rather than routine fines. There is a growing literature on the advantages of having a range of sanctions available to impose on corporate offenders (Clinard and Yeager 1980, pp.317-22; Orland 1980; Stone 1975; Fisse, 1983: 1213-43; Fisse and Braithwaite 1984; Criminal Law and Penal Methods Reform Committee of South Australia 1977; McAdams 1977). Beyond stating that fines have not proven to be an effective sanction and that we need to experiment with different sanctions, it is not within the scope of this study to evaluate systematically the advantages and disadvantages of different penalties. Some are better deterrents than others, some are better at fostering organisational rehabilitation, some have advantages in providing restitution to those who suffer from the offence, while the greatest strength of others is that they preclude the offender's committing further violations. In any case, it is not really a question of one type of sanction being better than another. To suggest that one kind of corporate sanction is superior to others is like suggesting that fighters are better than bombers for an effective defence force. In the battle against corporate crime we need an arsenal that enables us to take a different kind of arrow from our quiver for each corporate target.

For the purposes of this report, therefore, we will do no more than list the types of corporate sanctions that have been suggested and provide further references containing assessments of the advantages and disadvantages of each:

Cash Fines. The company is ordered to pay a dollar amount (Nagel 1979).

Equity Fines. The company is ordered to issue new shares to a victim compensation fund. After a five per cent equity fine, the victim compensation fund will own five per cent of the shares in the company, and the

remaining shareholders will have the value of their holding diluted by five per cent (Coffee 1981: Fisse and Braithwaite 1984).

Publicity Orders. The court orders placement of advertisements or other publicity in mass media outlets notifying or warning the public (or certain publics) of a company's offence (Fisse and Braithwaite 1983).

Internal Discipline Orders. The company is ordered to investigate an offence committed on its behalf, to discipline culpable employees, and to report to the court on what it has found and done (Criminal Law and Penal Methods Reform Committee 1977: 36).

Preventive Orders The company is ordered to change certain policies or standard operating procedures, expand certain internal compliance activities or budgets, appoint persons to certain new positions with specified authority to prevent future offending (Solomon and Nowak, 1980; Criminal Law and Penal Methods Reform Committee, 1977: 359; Stone, 1975: 186-98).

Corporate Probation. A relevant expert is appointed under a corporate probation order to supervise implementation of internal reforms similar to those under preventive orders (Yoder 1978: 53; Yale Law Journal 1979).

Community Service Orders. The company is ordered to perform as an organisation some work of community service relevant to its expertise (e.g. a coal miner testing a new approach to revegetating reclaimed open cut land) (Fisse, 1981).

A more detailed case for the availability of all these sanctions has been made elsewhere (Fisse and Braithwaite, 1984).

These alternatives should all be available: a massive increase in the levels of cash fines which can be imposed is sufficient on its own to ensure that the courts have the tools to make an example of a company in the small minority of cases where such action is warranted to give credibility to agency threats, to foster deterrence and to symbolise the harm and serious crimes against the bodies of workers.

Prosecuting the Individual or the Corporation

We have seen that a radical difference between the enforcement strategy of general occupational health and safety and that of mine safety inspectorates is that while the former almost exclusively direct prosecutions against companies,³⁵ the latter do so almost exclusively against individual employees or managers of the company. There is no inherent difference between safety practices in mines versus factories which provides a logical explanation for this difference. Indeed in some other

countries (e.g. the US) there is a tradition of punishing companies rather than individuals for mine safety offences. There are drawbacks to both individual and corporate punishment. It has already been argued that it is much harder to harm a corporation through punishment than an individual. On the other hand, individuals can and often are used as scapegoats for collective failings in organisational life. One of the impressive things about Australian mine safety law, however, is that some statutes go to considerable lengths to define in advance the responsibilities of various roles within a mine. This reduces the risks of arbitrary selection of fall guys; it would be quite difficult to prosecute an individual who had not been put on notice before the offence that this area of compliance was one of his or her responsibilities.

Regardless of the success of strategies for putting individuals on notice before the event, there would still be an important place for corporate responsibility. No matter how clearly lines of individual accountability are defined, the ineluctable reality of much corporate crime will remain: a number of individuals will each be a part of a whole that no one of them fully understands. Often the system or the plan will be at fault, and often the best way to get the system changed is to direct pressure on the corporation as a corporation, rather than on any individual within it. The law should make it clear that, in addition to identifiable individuals having responsibilities, the corporate owner, too, must have responsibilities that transcend those of the transient individuals who pass through positions on the corporation's board and in its executive offices. The law should never encourage the abrogation of corporate responsibility. Corporations, after all, need very little encouragement to salvage the corporate image by passing off their responsibilities onto individual scapegoats for collective wrongs.

This conception of the owner-manager relationship is inappropriate to the late twentieth century. With good reason, the thrust of business regulation today is increasingly to encourage corporations to be responsible for the misdeeds of their subsidiaries and operating units. We expect reputable companies to audit subunits for compliance with the law, to intervene and make heads roll when a corporate standard of ethical conduct is not met, and to attempt to pull up the safety standards of their weakest subunits to those of their strongest. But a coal-mining company in New South Wales that does all of these things eliminates its defences against liability for any mine safety violation. The company's way of avoiding liability is to say to the manager: 'Here's the tonnage target we expect you to achieve. Achieve it and don't tell us if you have to cut corners to do it'. This kind of corporate philosophy kills miners.

In practical terms, one suspects these issues of corporate exposure to liability produce little concern among coal-mining companies in New South Wales because the government never prosecutes corporations for

coal mine safety offences. The point is, however, that as soon as the government does begin a program of corporate prosecutions, it will find that the existing legislation creates disincentives for corporate social responsibility.

In summary, a strength of the nominated accountability under the New South Wales Coal Mines Regulation Act is that it facilitates individual liability, but at the expense of creating a climate averse to the imposition of corporate liability. There is no reason why nominated accountability need necessarily work this way. Just as the act delegates individuals as responsible for the performance of various duties, corporate owners can be required to perform duties ranging from maintenance of a system for monitoring safety statistics, to disciplining mine managers who fail to run their mines in a safety-conscious fashion, to preparing plans to deal with contingencies such as fires. In the current New South Wales Act, the duties of owners cover seven lines whereas those of employees cover seventeen pages. Moreover, the owners' defences of not having knowledge and not having meddled in the management of the mine could easily be eliminated from the act. Thus, there is no reason why a statute that provides for clearly defined individual responsibilities cannot also provide for equally clear corporate duties.

The mine safety philosophy of never prosecuting corporations deserves total condemnation. Convicting corporations is the most dramatic way possible of symbolising the fact that corporations, as corporations, in addition to their individual officers, have responsibilities to be so structured as to minimise safety violations. The symbolic, habit-forming function of law cannot be underestimated: most of us obey the law most of the time because we feel we have a responsibility to obey; a major reason we feel a responsibility to obey is that we see others from time to time being punished and disapproved of for wrongdoing. This is true whether the 'us' and the 'them' punished are individuals or corporations. Punishing corporations symbolises the responsibilities of corporations; punishing individuals symbolises the responsibilities of individuals.

It follows that the neglect by general occupational health and safety inspectorates of individual punishment is as bad as the rejection of corporate punishment that we see in mine safety inspectorates. We need both. We need a law that reflects the reality that safety violations can only be understood as a dialectical interplay between individual and corporate responsibility. There are offences for which an individual is totally to blame and for which there is no corporate fault. Equally, there are 'structural crimes' in which many individuals play small parts, without any single individual being criminally responsible (Yale Law Journal, 1979). However, for most safety violations, there is both individual and corporate fault; therefore, both types of sanctioning can and should be brought into play.

Using Private Justice Systems

Heavy reliance on 'tree-stump justice' as an alternative to prosecution was emphasised by many of our respondents, particularly in mines departments. That is, the agency applies pressure on the employer and the union to agree on a way of dealing with a person responsible for breaches of safety standards — by transfer, suspension, dismissal, or docking of pay.

Such informal sanctioning avoids heavy litigation costs for the agency and fosters social support for regulatory goals by directly involving the workforce in the administration of justice. Informal sanctioning supported by management, labour and the regulatory agency has the merit of bypassing the professionalisation of justice which in many areas of modern Western societies has alienated those affected from the law that protects them. Law administered by the people is more likely to be accepted as for the people, while a law which is imposed by aloof crown prosecutors and judges is more at risk of being perceived as an embodiment of oppression by meddling, uncomprehending outside professionals.

On the debit side, private justice systems are less just. Adversarial fact finding, rules of evidence and all the other legal paraphernalia do build in some assurances against scapegoating and other forms of unjust victimisation. Because we believe that the history of criminal justice suggests that these assurances are in practice very weak when it comes to complex organisational crimes, this does not seem to us sufficient reason to reject harnessing private justice systems as an alternative to litigation in many situations. What we would reject is a total denial of formal justice in favour of the 'tree stump'. In cases where very severe punishment is called for, where the importance of compliance with the law must be publicly affirmed by the stigmatising of a serious offender, the full panoply of due process protections provided by our criminal law must be mobilised. In addition, of course, there is a need for human rights law to expand to provide for a right to be heard against any excesses of private justice systems (Blades, 1967).

'Tree stump justice' is so necessary and inevitable that it cannot really be argued against. Many hazards are transitory and workplace specific. An inspector who notices a serious problem in a mine or at a construction site one week can come back next week to find that the site of the offence has been mined out or built on top of. Because inspectors cannot be constantly present on this ever-changing scene, because bureaucrats cannot write rules to cover all of the hazards which might be unique to a particular configuration of environmental contingencies at a single worksite, employees must be helped to become their own inspectors, and in some ways, their own legislators.

The obvious way to achieve this is through the appointment of workers' safety representatives with rights to inspect and stop pro-

duction and requirements to form worker-management safety committees which write and monitor safety rules on a continuing basis. For more than a decade mandatory safety committees for workplaces above a specified size have been features of safety regulation in Belgium, France, the Netherlands, Sweden, Finland, and the Federal Republic of Germany (Ashford, 1976: 502-5). If Australian regulatory agencies believe that encouraging private justice is the most cost-efficient route to enforcement, then they should support institutions which foster worker participation in safety. Mine safety agencies have done so through financially supporting union check inspectors since the beginning of the century. General occupational health and safety inspectorates are beginning to do so, if only in a half-hearted way.

Earlier we documented the failures of Tasmania and South Australia to mobilise the opportunities in the new laws they acquired in the 1970s to encourage safety committees and safety representatives. Australian laws have not followed the example of Section 28 (8) of the British Health and Safety at Work Act 1974 by requiring inspectors to supply such information to workers or their representatives as is necessary to keep them 'adequately informed' about matters affecting their health or safety. A statutory right of workers' representatives to accompany inspectors on inspections only exists in New South Wales (s.31 Occupational Health and Safety Act). Some inspectorates interpret confidentiality provisions in their statutes as forbidding the disclosure of any information about inspections even to a worker who lodged a complaint which led to the inspection. This makes a mockery of the basic principles of regulatory accountability.

Miners have rights to read the record book required to be kept at the mine to record certain health and safety information. But outside mines, it is only in New South Wales again that workers have a statutory right to inspect company health and safety records.³⁶ In Queensland, Western Australia and the Territories, neither employers nor manufacturers and suppliers of industrial substances are under any statutory duty to provide workers with information concerning the hazards they are facing (Gunningham, 1984: 246). If workers are to bear any responsibility for their own health and safety, the risks attending their employment must be disclosed to them in the fullest possible detail (Yale Law Journal, 1981).

Gunningham (1984: 252-54) has documented the limitations of existing legislative provisions for elected employee safety representatives and safety committees. The New South Wales Occupational Health and Safety Act provides for the latter but not the former, while in South Australia and Tasmania an employer can be exempted from the duty to permit the appointment of safety representatives if it operates a satisfactory safety committee. Gunningham, like the Robens committee,

convincingly argues that safety committees and safety representatives are not alternatives, but quite different elements of a total strategy to encourage workers to become eyes and ears in defence of their own safety. It is depressing that some inspectorates which make so much of their rejection of prosecution in favour of informal social control by private justice systems are so unsupportive of laws to require both of the two primary means of ensuring that workers share in the information needed for their participation in informal social control: safety representatives with adequate powers and safety committees with complete access to company and government information on the safety of the workplace.

Towards More Accountable Enforcement Policies

Apart from the Victorian Department of Employment and Training, which is preparing one, and the Queensland Occupational Safety Division, no other occupational health and safety agency has a written enforcement policy. The first step to progress towards rational enforcement policies is for agencies to force themselves to go through the exercise of deciding just what are the circumstances when prosecution and other regulatory actions should and should not be used. Such a policy need not be so detailed as to advise employers of the circumstances where they can violate the law with impunity, but it should advise employers of patterns of conduct which certainly will lead to prosecution. An enforcement policy should also expose to public comment and criticism the types of offences and circumstances of offending most likely to lead to prosecution, the priority areas for enforcement resources. Discretion is inevitable and desirable in any regulatory system; but the public at least have a right to know the criteria by which discretion is exercised (Davis, 1969, 1976).

The absence of written enforcement policies is part of a more general problem of a lack of public accountability of occupational health and safety agencies. This criticism has been made tellingly of South Australian agencies by the Occupational Safety, Health and Welfare Steering Committee (1984: 70-71), including the Occupational Health Section of the South Australian Health Commission:

... two aspects of the Section's work we feel deserve criticism. The first is that the bulk of the Section's work is almost totally unknown to the South Australian public ... we would advocate that it adopt a drastically upgraded public profile ... The second criticism concerns the tone of the Section's rare public statements. These are almost always directed to downplaying the severity of hazards. There are numerous exceptions of course (e.g. Dr Le Leu's admirable paper on gas hazards from animal slurry) but the pervasive sense that the Section sees its role as allaying public fears rather than bringing hazards to their attention, remains. It is striking, for example, that the section appears never to have issued a Health

Hazard Alert, not even on topics which have been the subject of alerts issued by NIOSH or by the International Labour Office.

The Steering Committee found all occupational health and safety agencies to have singularly uninformative annual reports. Openness and information sharing are the key to making a start on the long road to safer workplaces. Only when information is provided can its implications for better health and safety policy be debated by different interest and professional groups. Yet as this report has shown, often vital information is not only unavailable to the public, it is not known. Agencies claimed to us that they did not need to use prosecution because stop notices are a more effective substitute, yet they could not tell us how many stop notices had been issued even in the past year. The most basic information of all — injury statistics — is a national shambles.

The House of Representatives Standing Committee on Aboriginal Affairs (1984) report on the failings of the New South Wales government to enforce asbestos regulations set an example of how parliamentary committees can improve the accountability of occupational health and safety agencies by exposing situations where inspectorates are not doing their job. Ombudsmen also have an important role here. Consideration might also be given to sharpening inspectorial accountability by holding inspectors legally liable for deaths and injuries which arise from their negligence in failing to take enforcement action against hazards.³⁷

Another accountability issue is the absence of any prohibitions on inspectors or their superiors having pecuniary interests in the industries which they regulate. The one exception is the South Australian Radiation Protection and Control Act, 1982, which prohibits officers from holding an interest in any business engaging in an activity regulated by the Act without the consent of the Minister (Section 18).

Outright prohibitions may be a little draconian with agencies having as broad a reach as general occupational health and safety inspectorates. But Queensland, Western Australia, and Tasmania even fail to require disclosure of financial holdings where a conflict of interest may exist. By contrast, officers are required by law to advise appropriate authorities of possible conflicts of interests in South Australia and the Northern Territory. In Victoria, disclosure is required of Department of Minerals and Energy officers by statute and of all senior executives by Cabinet directive. Disclosure is required of all officers in N.S.W. under that State's Code of Conduct and Ethics for the Public Service.

This study has been about enforcement policy alone. By limiting the focus in this way no implication is intended that this is the most important area of health and safety policy. Safety education, workers compensation policy (including graduated premiums according to injury experience), standard setting and a variety of other topics are all equally worthy of attention. Every one of these other policy areas will equally

benefit from our concluding plea for greater openness and accountability.

Without nationally coordinated information on occupational health and safety and open availability of this information, occupational health and safety policy in Australia will continue to be primitive. The new National Occupational Health and Safety Commission now has the ball squarely at its feet to create the information base to make for policy analysis more sophisticated than has been possible in this study. It remains to be seen whether the concern expressed by Mr Hawke about occupational health and safety in the quotations in Chapter 1 will be translated into substantial or mere symbolic action by the Commission.

Summary

SUMMARY OF FINDINGS

1. Industrial accidents and disease are responsible for five times as many injuries as traffic accidents and cost the Australian economy twice as much.

Inspectorial resources

2. The Northern Territory is the jurisdiction best resourced with occupational health and safety inspectors, followed by Tasmania.

3. The inspectorates worst resourced to cover the workplaces in their jurisdictions are in the A.C.T., New South Wales and Victoria.

4. The mine safety inspectorates are much more adequately staffed than the general occupational health and safety inspectorates. There are 5,616 workers per safety inspector in Australia; for mining employees separately, there are 616 workers per mine inspector.

5. New South Wales has more than three times as many miners per mine safety inspector, compared with the rest of Australia.

6. The quality as well as the quantity of mine safety inspectors is superior to that in general occupational health and safety inspectorates. Most mine safety inspectors are graduates; most general occupational health and safety inspectors are not. Most mine safety inspectors have some years of management experience in mines; general occupational health and safety inspectors at most have experience as artisans in the industries they inspect.

7. Over 500,000 occupational health and safety inspections per year are made by all types of workplace safety inspectorates throughout Australia; these have never resulted in more than 1,000 convictions in a year.

Prosecutions - General Occupational Health and Safety Inspectorates

8. General occupational health and safety inspectorates (excluding mines) in all jurisdictions are very reluctant to resort to prosecution. New South Wales, Victoria and Queensland have the most prosecutorial general inspectorates. There is a higher level of prosecution in Queensland for technical or paperwork offences and for construction safety offences than for any jurisdiction, but for other substantive occupational health and safety offences, a lower level of prosecution than in New South Wales and Victoria.

9. Tasmania and the A.C.T. have the least prosecutorial general inspectorates. The difference in use of prosecution between these small jurisdictions and the three largest states is not simply a reflection of population size. The three large states all have over a hundred convictions every year while Tasmania averages one a year. None of these states has anywhere near 100 times the workforce or workplaces of Tasmania.

10. South Australia, Western Australia and the Northern Territory lie between the large states on the one hand, and Tasmania and the A.C.T. on the other, in their prosecution rate. These three jurisdictions have all experienced sharp declines in the use of prosecution in recent years.

11. A conviction rate of over 90 per cent is the norm for Australian occupational health and safety agencies once a prosecution is launched.

12. Northern Territory courts impose the heaviest average fines for general occupational health and safety offences. All the other jurisdictions for which information is available have averaged under \$300 every year. In the Northern Territory, fines have averaged \$644 over the past five years. Even this is a very low level compared to some other areas of regulation. The Trade Practices Commission, to take a relatively punitive example, imposes average fines of \$24,613 (Braithwaite, Vale and Fisse, 1984: 30).

13. The predominant type of substantive occupational health and safety prosecution throughout Australia is for failure adequately to guard

hazardous machinery. More generally, enforcement activity is concentrated on the simple, the readily observable, the easily measurable.

14. New South Wales is the only jurisdiction with any semblance of a prosecution program with respect to occupational health offences. Australian agencies are overwhelmingly concerned with safety to the neglect of health issues.

15. Victoria is distinguished by a total absence of construction safety convictions. Queensland has the highest level of enforcement in this area.

Prosecution - Mine Safety Inspectorates

16. The rate of prosecution per 1,000 miners by mine safety inspectorates is even lower than prosecutions per 1,000 manufacturing workers by general occupational health and safety inspectorates in all jurisdictions. The average fines are lower. Where data are available, fines average under \$100.

17. While general occupational health and safety inspectorates direct prosecutions almost entirely against companies, mine safety inspectorates aim their prosecutions overwhelmingly against culpable individuals. This reflects the thrust of Australian mine safety laws to specify the responsibilities of individuals who hold certain positions in mines.

18. Until recent years, a unique feature of New South Wales mine safety enforcement has been significant numbers of prosecutions launched by employers (rather than the state) against miners.

19. There has never been a conviction of an operator or employee in Australia for an occupational health and safety offence in connection with off-shore or land-based oil exploration or production.

20. In the massive and hazardous Queensland coal mining industry, there have been no health and safety prosecutions for a decade.

21. The substantial Tasmanian mining industry has not experienced a health and safety prosecution in the past decade.

22. Western Australia is the only state with any kind of law enforcement record against mine safety violations. There have been 40 convictions in 12 years with fines averaging \$54 since 1977.

Enforcement policy

23. Only two of the agencies had even brief written enforcement policies to indicate the circumstances where prosecution versus other enforcement action was most appropriate.

24. By far the most widespread unwritten enforcement guideline is that prosecution is more likely to be used when a worker is seriously injured or killed.

25. Australian safety inspectorates — both general and mining — are characterised by highly decentralised regulatory decision making where inspectors in the field are most influential.

26. More than half the inspectorates had no central monitoring of the frequency with which different individual inspectors resorted to regulatory actions of different kinds.

27. Most agencies have crown law officers from outside the department conduct prosecutions for them. Criticisms of the capacity of these officers to understand technical problems, for delays and for other reasons were widespread.

Sanction Other Than By Prosecution

28. The most widely used informal deterrent to non-compliance used by all types of agencies is follow-up inspections until the company decides on compliance to get the inspector 'off their back'. This is often complemented by formal warning letters.

29. Improvement notices (directives) and prohibition notices (stop notices) seem to be very infrequently used by most inspectorates, with the exception that improvement notices (record book entries) are frequently used by mine safety agencies.

30. Licence suspension or revocation is also rarely used as a sanction, occurring less than once a year for most agencies. Withdrawing certificates of competency as an alternative to prosecution is part of the rhetoric of regulators; it is a rhetoric which is not matched by reality.

31. Seizure of assets and seeking injunctions in courts of law are not significant elements of Australian occupational health and safety enforcement, as they are, for example, in food standards enforcement.

32. Very little use is made of adverse publicity directed against occupational health and safety offenders as an informal means of social control. This approach to informal social control is used much more by other types of regulatory agencies (e.g. consumer affairs, food standards, tax, medi-fraud, environmental protection) than occupational health and safety agencies. Mine safety agencies are particularly averse to 'damaging the reputation of the industry' by drawing public attention to occupational health and safety offences.

33. Mine safety inspectorates in particular use the strategy of encouraging workers and management to use private justice systems against individual offenders — as by demoting, sacking, transferring employees or standing them down from their job for a few days.

Wider Regulatory Strategy

34. There are two dominant philosophies of occupational health and safety enforcement — a deterrence philosophy which sees law enforcement as central, and the cooperative partnership philosophy of the British Robens Report. All Australian occupational health and safety agencies favour the latter philosophy over the former.

35. In policy and practice, however, none of the general occupational health and safety agencies follows either model. While they all espouse a Robens philosophy, even the states which passed Robens-style legislation in the 1970s (South Australia and Tasmania) do not work at the Robens recommendations — coordinating the writing of industry codes of practice, requiring companies to have safety policies and to enforce them internally, mandating safety committees and the election of worker safety representatives, and shifting to diagnostic inspection by highly qualified inspectors. Instead, the predominant approach of Australian general occupational health and safety inspectorates is perfunctory inspections by poorly qualified inspectors.

36. Mine safety inspectorates, in contrast, can make much stronger claims that they are doing many of the things required to put a Robens philosophy into action. Mandating mine-level safety policies in a range of areas and financially supporting elected employee safety representatives who have most of the powers of government inspectors have been particular features of mine safety regulation. Fostering safety committees, however, has not.

37. Mine safety regulation is much more particularistic, with

many enforceable rules being mine-specific rather than industry-wide, while general occupational health and safety enforcement is more universalistic.

38. Notwithstanding their lack of commitment to deterrence, a cynicism about the value of self-regulation as a strategy is a widespread amongst general inspectorates. They believe in the need for law, while rejecting the necessity for punitive enforcement of it. Self-regulation is a more positive concept to mine safety and radiation safety regulators.

39. No agency has ever undertaken a systematic cost of regulation impact study or cost-benefit analysis of regulation.

40. While there are some anomalous weaknesses in the powers of occupational health and safety inspectors, their powers in many respects are greater than those of police officers. The agencies are generally satisfied with their powers.

Radiation Safety

41. Regulation of radiation safety in mining is characterised by prior approval of projects following detailed evaluations of benefits and social costs; negotiated, contractual or voluntaristic reliance on codes of practice which are mostly international in origin; particularism; agreements between industry and government to share responsibility for monitoring exposures and to audit such monitoring (with industry doing most of the monitoring and government most of the auditing); and total rejection of law enforcement as a regulatory model.

42. Nuclear reactors pose the most potentially catastrophic safety risks to workers and the wider community, yet Australia's only nuclear reactors are subject to a regime of virtual self-regulation. Both routine occupational health and safety inspection and approval of design changes to Australian Atomic Energy Commission reactors are in the hands of employees of the Commission.

43. Radiation regulation by state health departments is characterised by reliance on self-regulation and professional education, imposing conditions of licence which reduce prospects of significant exposures, and industry self-monitoring of exposures combined with government audit. Government checking of exposure levels is aimed more at a diagnostic service to licensees with problems than at policing the integrity of their self-monitoring. Where the advice which follows problem diagnosis is

ignored, regulatory response escalates to stern warning letters, to threatened revocation of licence, to actual licence revocation, suspension or imposition of more stringent licence conditions. Prohibition orders are also used in most states. No state radiation control branch has had more than one prosecution in the 1980s; most have had none.

Attitudes of Regulators

44. The low level of occupational health and safety enforcement in Australia is not fundamentally the product of frustrated inspectorates who would be prosecutorial were it not for inadequate laws, insufficient powers, delays in the courts, shortages of inspectors, or some similar reason. They are not interested in being prosecutorial. They see education and persuasion as more important than law enforcement. Their ideology, as reflected in semi-structured interviews and responses to a questionnaire, is essentially one of trust in socially responsible business.

CONCLUSIONS FROM THE POLICY ANALYSIS

1. A series of arguments about the relative merits of punishment and persuasion all converge on the conclusion that an optimal mix of punishment and persuasion is the key to maximum compliance. Regulatory regimes which place almost total reliance on either punishment or persuasion are unsophisticated. While some American regulatory agencies have fallen into the former trap, there are no Australian occupational health and safety agencies which have grounded on the rocks of excessive reliance on punishment. Most, however, have fallen into excessive dependence on persuasion, have failed to grasp the need for regulation to be both 'vengeful and forgiving', to understand that voluntary compliance by the majority depends on deterring the incorrigible minority. It is concluded that deterrence demands more frequent and potent law enforcement than is evident in Australian occupational health and safety agencies.

2. Australian occupational health and safety inspection should be more diagnostic and less fixated on compliance with the readily observable or easily measurable deviation from the requirements of the rulebook. Prosecutions could be much more oriented toward punishing employers who create unsafe conditions of work. This might include employers who have inadequate systems for minimising exposures to hazardous chemicals or who ignore advice on how to change working environments to

reduce conditions such as repetitive strain injuries. General duty provisions of many existing occupational health and safety statutes are adequate to sustain this kind of enforcement.

3. Diagnostic inspection and enforcement directed at unsafe patterns of conduct implies that general occupational health and safety inspectorates should employ inspectors with the kind of educational and management experience that is common in mine and radiation safety inspectorates.

4. The foregoing point in turn implies increased expenditure for occupational health and safety inspectorates. Diagnostic inspection by highly qualified inspectors means more hours of inspection by more expensive people. If industry is serious with its complaints about incompetent inspectors with a rulebook mentality, then it too should support (as it has done with the National Occupational Health and Safety Commission) the provision of the budgets necessary to do the job properly. Regulatory budgets are trivial compared with the costs of work injuries documented in Chapter 1 of the study.

5. Whatever their budgets, regulatory agencies can make best use of the resources they do have by adopting a hierarchy of regulatory response, where more interventionist (and costly) strategies are saved for the areas where industry is least cooperative or assurances of compliance most imperative. Industry cooperation with regulatory goals is enhanced when there is the flexibility to escalate regulatory response from self-regulation, to 'enforced self-regulation', to command regulation with discretion to punish, to command regulation with nondiscretionary punishment. Equally, such a hierarchy of regulatory response permits deregulatory shifts down the hierarchy in response to good faith efforts by industry to improve.

6. Capacity to escalate or de-escalate the interventionism of regulation should be complemented by the capacity to escalate the severity of penalties when a punitive strategy is adopted. Australian regulatory agencies do not have a sufficiently differentiated enforcement pyramid. An enforcement pyramid is advocated where most detected offences continue to be dealt with by repeat inspections and written warnings; at the next stage inspectors impose small on-the-spot fines like traffic police (but as civil rather than criminal penalties); then follow criminal prosecutions with heavy penalties, orders to stop production, and licence suspension or revocation. At the tip of the pyramid, these ultimate sanctions can be combined with adverse publicity, as by issuing a press release announcing that a company has been convicted for hazardous practices.

17. An offence of industrial homicide should be created to symbolise the harm of the grossest acts of industrial recklessness, and to permit appropriate government response to cases involving callous disregard for workers' lives.

8. In addition, the courts need available to them an armoury of sanctions which enable them to impose punishments which bite — a very difficult thing with massive corporations who can pass costs on to others. As the South Australian Occupational Safety, Health and Welfare Committee (1984: 48) concluded: 'The level of fines is below acceptable community standards and leads to the law being held in contempt'. Even the largest fines available under any Australian occupational health and safety law — \$100,000 plus \$10,000 for each day the offence continues — can be to a company with over a \$1,000 million in annual income little more than a \$5 traffic fine to the average citizen. Hence, alternatives to cash fines are needed including equity fines, publicity orders, internal discipline orders, preventive orders, corporate probation and community service orders.

9. The courts should take note of the fact that the trend is for parliaments to increase penalties for occupational health and safety offences. Judges should respond to these changes by imposing sentences of a severity the community expects for crimes against the persons of workers.

10. If there are any areas of sufficient concern to justify the option of regulatory escalation to punitive control by a totally independent government agency, nuclear safety must be one. The Commonwealth government should implement its 1983 election policy of 'an independent regulatory authority responsible for nuclear related environmental protection, health, safety, security safeguards and other non-proliferation activities'.

11. Other statutes would benefit from following the impressive way the New South Wales Coal Mines Regulation Act, 1982 defines before the event the responsibilities of those who fulfill various roles in a coal mine. The law both gives guidance in advance and makes evasion of individual responsibilities after the event more difficult. There are also imaginative attempts to avert scapegoating in delegations of individual responsibility. However, equal attention should be given in both law and enforcement policy to defining *corporate* responsibilities.

12. The tendencies for mine safety enforcement to be directed almost exclusively at individuals and for general occupational health and safety

enforcement to be directed almost exclusively at corporations are both extreme and misguided. A law and an enforcement policy are needed which foster both individual and corporate responsibility. Where the organisation is responsible, the organisation should be punished; where an individual manager or worker is responsible, the individual should be punished; where both are responsible, both should be punished.

13. Encouraging private justice systems where employers and employees agree on sanctions such as demotion, suspension or dismissal of employees who fail to meet safety standards is a cost-effective regulatory approach, while not being a justification for governments to abrogate their regulatory responsibilities. The best means of fostering private justice systems is to encourage workforce participation in safety compliance through both mandatory safety committees and employee safety representatives with powers to stop production until a government inspector arrives. Statutory duties of both employers and government inspectors to share health and safety information with employees are also important to participatory safety enforcement.

14. Non-mining inspectorates should consider the requirement in mine safety laws for a 'record book' in which recommendations by both worker and government inspectors are recorded, together with follow-up action by management, and made permanently available for perusal by any employee.

15. Occupational health and safety agencies should prepare written and public enforcement policies if for no other reason than to force themselves to confront the logic (or lack of it) of their existing enforcement practices. Systematic monitoring of enforcement practice should be maintained. Hence, if an agency maintains that its extensive use of prohibition notices makes prosecution unnecessary, this should be made explicit in the policy and thereby opened up to public comment; statistics on how many prohibition notices are issued each year should be included in the annual report so that the public can assess whether the agency is living up to its policy.

Notes

1. The 'agency' here means the government department or authority or the largest subunit of the department or authority for which the particular type of regulation was the major responsibility.
2. On the other hand, small establishments often have less vigorous safety programs than large ones (no safety committees, etc) and it is more demanding of inspectors' time to cover a large number of small establishments than a small number of large ones. The A.C.T. is also unusual in the high public sector component of the workforce. While the inspectorate has no enforcement powers in the public sector, a great deal of its time is nevertheless occupied with advising public sector employers.
3. This is not to say that there have not been some scandalous instances of regulatory failure arising from discretionary warning of employers of impending inspections. The House of Representatives Standing Committee on Aboriginal Affairs (1984: 76-77) reported that forewarning by New South Wales government inspectors of visits to the Baryulgil asbestos mine resulted in special clean-ups of asbestos dust and a slow down of production in the mill to minimise dust emissions. The Minister for Industrial Relations has assured the New South Wales Parliament that 'the practice of giving advance notice to mine management has been eliminated' (Hansard, 14 June 1984, p.2108). All types of inspectorates in all states, nevertheless, retain some discretion to forewarn of inspections, particularly with remote locations like oil rigs and with machinery which must be shut down for a proper inspection to occur.
4. For example, Occupational Health and Safety Act (N.S.W.) 1983, Section 27(1); Industrial Safety, Health and Welfare Act (Tasmania) 1977, Sections 30-31; Industrial Safety, Health and Welfare Act (South Australia) 1972, Section 28; Industrial Safety Health and Welfare Act (Victoria) 1981, Section 20; Construction Safety Act (Northern Territory) 1984, Section 22.

5. Construction Safety Act (Northern Territory) 1984, Section 10; Industrial Safety Health and Welfare Act (South Australia) 1972, Section 19. The Queensland Industrial Factories and Shops Inspectorate cannot compel answers which may be incriminating under the Factories and Shops Act 1960-1975, but they can under the Industrial Conciliation and Arbitration Act 1961-1976.
6. For example, Factories and Shops Act (Queensland) 1960-1975, Section 42(ii). The Industrial Safety, Health and Welfare Act (South Australia) 1972 has a typical provision:
 20. (1) Where it appears to an Inspector that any situation exists in or in connection with any industrial premises or construction work that, in his opinion —
 - (a) gives rise or may give rise to the risk of injury to any person; or
 - (b) is or may be detrimental to the safety or health of any person,the Inspector may by notice in writing require —
 - (c) the occupier or person apparently in charge of those industrial premises; or
 - (d) the constructor in respect of that construction work or the person apparently in charge of that construction work,to take such steps, as are specified in the notice, to remedy or alleviate the situation.
 - (2) Without in any way limiting the generality of the effect of subsection (1) of this section a notice under that subsection may require that any activity carried on in relation to the situation referred to in that subsection shall cease forthwith.
 - (3) There shall be an appeal to the Minister against any requirement of any Inspector under this section, and any such appeal shall be made to the office of the Minister within forty eight hours of the making of the requirement by the Inspector.
 - (4) The Minister may hear an appeal made under subsection (3) of this section or may appoint some person to do so and the Minister or person appointed by him shall make such order as to the Minister or such other person seems fair and reasonable and the order when made shall be final.
 - (5) Any person who without reasonable excuse (proof of which shall lie upon him) —
 - (a) refuses or fails to comply with any requirement made by an Inspector that has not been appealed against in the manner set out in subsection (3) of this section; or
 - (b) refuses or fails to comply with any order made by the Minister, or person appointed by him, pursuant to sub-section (4) of this section,shall be guilty of an offence and liable to a penalty not exceeding five hundred dollars.
7. For example, General Rule Under Factories and Shops Act (Queensland) 1960-1975. Again, the South Australian Industrial Safety, Health and Welfare Act, 1972 provides a clear illustration:
 29. Every employer in any industry, every occupier of industrial premises and every constructor in relation to any construction work shall —
 - (a) do all things as are necessary to ensure that the provisions of this Act are complied with; and
 - (b) take all reasonable precautions to ensure the health and safety of

workers employed or engaged in that industry or in or on those premises or on or in connection with that work.

Penalty: Two hundred dollars.

A large proportion of South Australian prosecutions are under this general duty provision. See also Gunningham (1984:100-102).

8. In Victoria, South Australia and Tasmania, the onus is on the prosecution to prove beyond reasonable doubt that 'reasonably practicable' steps had not been taken. In New South Wales, in contrast, the onus is now on the employer to prove that possible remedial measures in any instance were not 'reasonably practical' (Gunningham, 1984: 102).
9. For example, \$40 maximum fine for failing to comply with the order of an inspector or for using a certificate of competency after it has been cancelled by the Board of Examiners under the Coal Mining Act (Queensland) 1925-1974, Sections 58 and 66.
10. Perhaps the best and most various examples are to be found in the New South Wales Coal Mines Regulation Act 1982 and the Queensland Coal Mining Act 1925- 1974.
11. For example, Mines Regulation Act (Queensland) 1964, Reg. 8 (appointment of ventilation officers).
12. For example, Coal Mining Act (Queensland) 1925-1974, Section 60, (manager to conduct weekly inspections), Second Schedule, Section 6 (deputy to conduct daily inspections), Second Schedule, Section 7 (monthly dust sampling and analysis); Mines Regulation Act (Queensland) 1964, Section 36; Mines Safety Control Act (Northern Territory) 1982, Section 29; Mines Inspection Regulations 1975, Mines Inspection Act (Tasmania) 1968, Reg. 66. An interesting variation in the Victorian Directions under the Petroleum (Submerged Lands) Act 1967 is a requirement for weekly independent tests by a laboratory to check certain equipment (Direction 21(2)(iii)).
13. For example, Mines Regulation Act of 1964 (Queensland), Section 17; Regulations Under the Mines and Works Inspection Act (South Australia) 1920-1964, 226(2).
14. For example, Coal Mining Act (Queensland) 1925-1974, Section 70.
15. Petroleum (Submerged Lands) Act 1967, Section 134.
16. Section 47 of the Mines Inspection Act (Tasmania) 1968 reads:
Except when giving evidence in any legal proceedings, no inspection and no person authorized to enter a mine under Section forty-six shall divulge to any person, other than his superior officer or the Minister, any information obtained by him in the exercise of his powers and duties under this Act.
17. In the Petroleum (Submerged Lands) Act 1982, the 'general clause' is even more general than enjoining practices to be 'safe' and 'healthy'. They must also be 'proper and workmanlike' and 'in accordance with good oil-field practice' (Section 97(1)).
18. On the other hand, it must be said that the definition of 'practicable' in Section 18 of the Victorian Occupational Health and Safety Bill 1983 is still so wide as to be akin to 'reasonably practicable'.
18. In this Part, 'practicable' means practicable having regard to —
(a) the severity of the hazard or risk in question;

- (b) the state of knowledge about that hazard or risk and any means of removing or mitigating that hazard or risk;
 - (c) the availability or suitability of technology to remove or mitigate that hazard or risk; and
 - (d) the cost of removing or mitigating that hazard or risk.
19. See footnote 8 above. A reversal of onus of proof may be preferable to moving towards strict liability because of the reluctance of the courts to impose severe penalties when they see the case as one of liability without fault.
 20. *Sydney Morning Herald*, 29 November 1984.
 21. *The Age*, 15 June 1982.
 22. *Ibid.*
 23. *Canberra Times*, 6 September 1984, p. 2.
 24. *The Age*, 3 June 1982; *Sydney Morning Herald*, 26 July 1983.
 25. Radioactive Substances Act (N.S.W.) 1957, Regulation 15; Health (Radiation Safety) Regulations 1984, No.191; Health Act (Victoria) 1958, Part VIII; Radiation (Safety Control) Ordinance (Northern Territory), Section 17.
 26. Radioactive Substances Act (N.S.W.) 1957.
 27. Agency as defined in footnote 1.
 28. See the review of surveys of community attitudes to white collar crimes in Braithwaite (1982a: 731-4) and the more recent studies by Frank et al (1984); Cullen et al (1982, 1983); Jones and Levi (1983); Salas et al (1982: 512-4).
 29. Imprisonment is never used as a sanction against occupational health and safety offenders, even though it is available in many statutes: for example, Radiation Protection and Control Act (South Australia) 1982, Section 46(3); Inspection of Machinery Act (Queensland) 1951-1979, Section 62(2); Petroleum (Submerged Lands) Act (Western Australia) 1982, Section 39; Mines Act (1958) Victoria, Section 419(3) (imprisonment for 'wilfully' causing a dangerous accident).
 30. The Williams Report (1981: 37-38) in fact advocated that codes written by an organisation or an industry, after being approved by the government, should be 'enforceable to the same degree as any other legislative provision'.
 31. An identical story of even more atrocious conditions arising from a myopic regulatory rejection of law enforcement can be told about the Wittenoom asbestos mine in Western Australia. As Layman (1984: 11) reported: 'Year after year ... inspectors ruled that dust control was unsatisfactory and year after year they reported that conditions were *about* to improve because of some planned change'. In February 1985, asbestos removal contractors in the A.C.T. were found to be engaging in grossly hazardous practices in dumping asbestos. No prosecution was initiated in this case as well; control of the dangerous behaviour was only effected when A.C.T. unionists threatened industrial action (*Canberra Times*, 15 February 1985, p.3).
 32. See note 29.
 33. See *McBride*, V.R. (1965) 115 C.L.R. 44.
 34. See generally Weinfeld (1982); Glasbeek and Rowland (1979); Spurgeon and Fagan (1981); Montgomery (1973).

35. For a summary of the law in this regard, see Gunningham (1984: 132-3).
36. Occupational Health and Safety Act (N.S.W.) 1983, Section 25.
37. For a start, this would imply amending provisions such as the following from the Queensland Factories and Shops Act 1960-1975:

96. **Protection of inspectors, etc.** No matter or thing done by the Minister, or the Board or the Chief Inspector or any other inspector, or by any other person acting with the authority of the Minister, or the Board, or the Chief Inspector or any other inspector, in good faith and without negligence for the purpose of executing this Act or in the execution of his powers and duties under this Act, shall subject the Crown or the Minister or the Board or the Chief Inspector or other inspector or other person as aforesaid to any liability in respect thereof.

A fascinating development in Japan has been a decision by the Kanazawa District Court under Japan's National Redress Law that the Japanese Government bear one third of the massive liability for neurotoxic effects of the drug clioquinol. The remaining two-thirds of the product liability claims was to be borne by the manufacturers. Government liability was assessed because of the failure of the government's Pharmacy Affairs Bureau to subject the drug to rigorous registration procedures. Goldring and Maher (1979: 31) have discussed two New Zealand cases where the failure of government building and transport inspectors to do their job properly was found to be a basis for government liability. To date the extent to which law should provide incentives for government as well as businesses to improve their safety systems has been a neglected topic.

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Hazardous conditions in Australian workplaces contribute to hundreds of deaths, tens of thousands of injuries, and thousands of millions of dollars of lost productivity each year.

Occupational Health and Safety Enforcement in Australia, by criminologists John Braithwaite and Peter Grabosky, reviews the enforcement strategies of agencies responsible for occupational health and safety, mine safety and radiation control in State and Commonwealth governments. Based on independent policy analysis, and interviews with top regulatory officials, the authors recommend significant reforms to the regulatory process.

Australian occupational health and safety enforcement is described as weak and unsophisticated. Offences which might be prosecuted as industrial homicide are routinely subject to fines of a few hundred dollars.

Dr Braithwaite and Dr Grabosky do not advocate imprisoning managers responsible for preventable deaths in the workplace; nor do they even recommend punishment of all occupational health and safety offenders. They do advocate regulatory bodies with a willingness to demonstrate that they have a 'sting in their tail' when they confront corporate intransigence or offences of unusual seriousness. On the basis of vast knowledge of overseas health and safety regulatory strategies, and other fields of regulation within Australia, the authors suggest some principles for a selective and sophisticated use of law enforcement as part of a regulatory strategy for Australian occupational health and safety.