

**House of Representative Standing Committee on Communications,
Transport and the Arts:
Inquiry into managing fatigue in the transport industry**

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Release of findings: Please do not release data contained in table 2 without prior permission from the author.

Introduction

This submission attempts to place the issue of fatigue in a broader industrial/labour market context and to highlight some of the organisational factors associated with fatigue. This broader perspective is vital, since most of the research and solutions tend to have a strong individual focus, rather than a broader workplace, societal focus. Whilst identifying the individual causes and effects of fatigue – an approach typically adopted by researchers who adopt a physiological, psycho-social approach – is crucial, on its own it can discount some of the broader labour market, site safety, family and community consequences. Due to the limitations of time, this submission will not contain the detail that would typically be included. Instead, issues that we consider require greater attention will be highlighted.

The focus of a great deal much hours related fatigue research to date, especially overseas and to a lesser extent in Australia, has been primarily on the physical and psycho-social effects of fatigue, and to a lesser extent on its causes. Both medical and psychological “battery of tests” approach has dominated much of the research, a great deal of which has considered differences between 8 hour and 12 hour shifts schedules¹ However, in terms of driving some kind of co-ordinated strategy, the seeming equivocal nature of the findings associated with shift length and fatigue has left policy makers in Australia with little to go on in terms of a common position.

More seriously, the lack of any co-ordinated approach to measuring fatigue, and the equivocal nature of some of the findings has meant that these differences can be exploited in a way that leads to an “anything goes” mentality by some employers. The absence –for the most part - of any national or industry standards on fatigue or hours

¹ See Smith et al 1998 for a comprehensive review of issues associated with extended shifts

of work (with the exception of road transport and aviation) has meant that there is an effective policy and regulatory “vacuum” around this issue². At the same time, other labour market, regulatory and workplace changes are leading to a situation where some kind of standard is required. It will be on these other broader changes that this submission will focus since they too have implications for how fatigue can be managed at an industry and workplace level.

a) A policy and regulatory vacuum around working hours in Australia

It is important to recall that Australia is somewhat unique among OECD countries in that it has relied overwhelmingly on the industry award system to provide detailed provisions for the protection of working time standards and conditions at a workplace level. Unlike many other OECD countries, we have few broad, national, legally enforceable standards that place limits on, for example the length of the working day, overtime levels, night work, or maximum hours of work (road transport being a recent very minimal exception, at least in the eastern states). This means that the majority of wage and salary earners in this country rely on those standards that remain in industrial awards, and, increasingly, conditions as they are negotiated under collective and individual agreements. Decentralised bargaining has seen an increasing focus on changing these working time standards in a way that has left us with, in effect, a policy and regularly vacuum. Unlike many countries in Europe, including the UK, who have now signed the European Directive³ on working time that sets limits in various aspects of working hours (including maximum hours that can be worked) -- Australia remains without any coherent set of working time standards that take into account what we do know about the effects of long hours and fatigue⁴. It is thus the case that even with the most overwhelming evidence about the effects of hours related fatigue, that we have no broad facilitative mechanisms for implementing standards.

This absence any coherent set of standards on working hours that can be used as a guide by industry and the workplace parties constrains the development of effective industry initiatives around these issues. The lack of agreed standards also allows for “competition” around the issues of working time that places downward pressure on conditions and standards (Heiler, 1998). In highly competitive industries – such as transport- new lower standards at one workplace or in one company, act to set the new lower standards across the industry.

By examining some broad industry trends around working hours, we will be able to see how far we have now departed from the often taken for granted “standard hours” that used to be contained within industry awards. This will highlight how necessary it is to develop and agree upon some new hours standards that provide effective and not just minimum protection against excessive hours- related fatigue.

b) Brief overview of key trends in working hours in Australia

² Heiler, 1998

³ See overview of the Directive in attachment 1

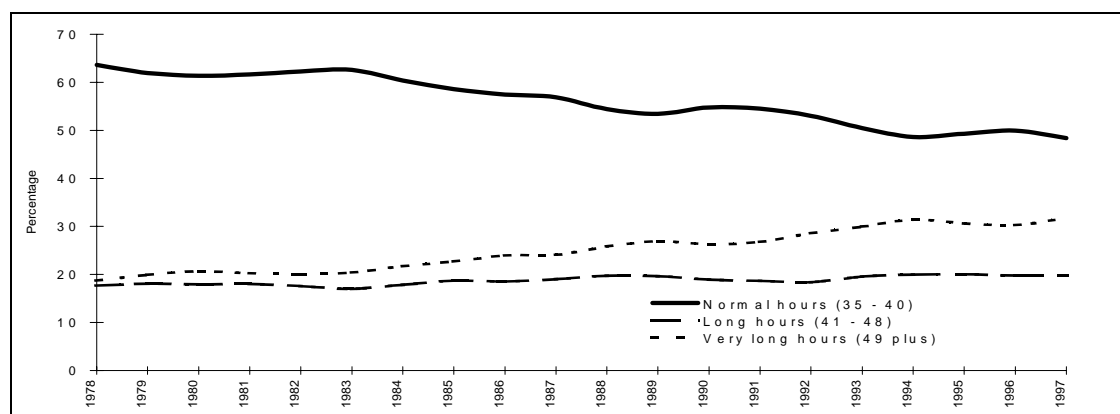
⁴ See for example, OECD, 1998 for a summary of legislative limits on working hours. An overview is included in attachment 2

Duration of working hours

The most dramatic change that has occurred to standard hours in hours with implications for fatigue management has been the increase in standard weekly hours for full-timers. While changes in working hours can be understood in terms of changes to the duration, distribution, compensation, pace, scheduling and employment status, we will focus primarily on the duration and scheduling of working hours and the scheduling of work.

First we can note that there is very strong evidence that weekly hours for full-timers have increased. Table 1 below shows that those working “normal hours” of 35-40 has declined to under fifty percent between 1978 and 1998, while those working long and very long hours have increased over the same period. More full-timers now work regularly over 40 hours per week with many more working regularly over 49 hours per week.

Table 1: Hours worked for full-time workers, Australia 1978 to 1997

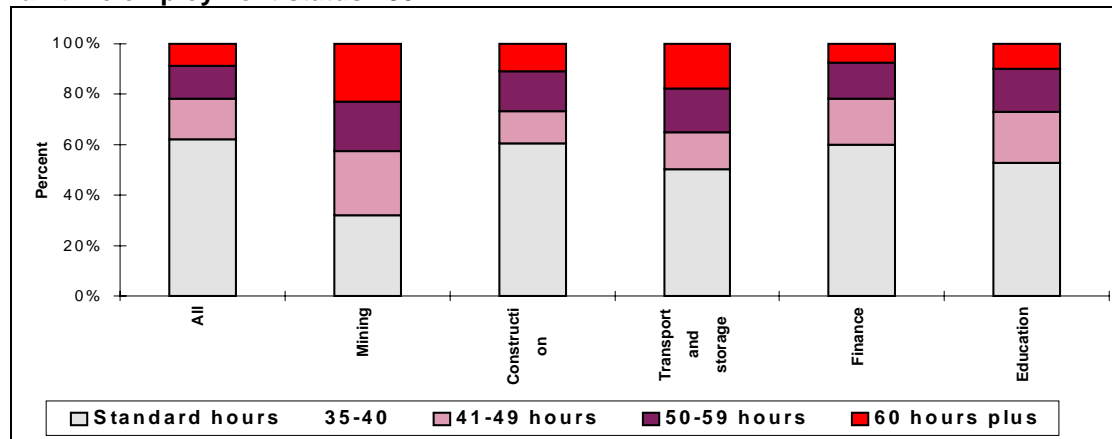


Source: Derived from ABS Labour force Australia 1978-1998 Cat no 6203.0 Percentage of persons in each hours category

We also know that this has a strong industry dimension. Some industries, such as mining, education, transport and storage all have large numbers of persons working very long hours. Some very recent preliminary analysis of hours data from the Survey of training and education suggests that very long hours is strongly industry related.

The following figures should be treated with some caution as they are yet to be finalised, but they do give a feel for the emerging general industry trends. Please do not quote them without first obtaining permission from ACIRRT

Table 2: Preliminary figures on hours distribution by industry for those persons with full-time employment status 1997



Source: ABS Survey of Training and Education (unpublished data; preliminary analysis)* note: these figures must be treated with some degree of caution as they are yet to be finalised. They concur with data from other sources however, and are reliable to show general trends.

We can see from the above that in mining, for example, only around 25% of persons who are full-time work a “standard” week. With around 40% working regularly over 50 hours per week. Similarly in transport and storage, around 15% of persons with full-time may be regularly working over 60 hours per week.

Comment: Any discussion of the management of fatigue in the transport industry or in other industries, has to take seriously the fact that ‘standard’ hours of work are now very long in some industries. It will be difficult to develop workplace level solutions to fatigue within an environment of very long hours within and across industries. Moreover, unless there is some kind of enforceable standard limiting maximum hours, the trend will be towards upward pressure on hours of work continuing. We need to better understand what factors are leading to these historically very long hours of work in Australia.

Scheduling of work

We also know that large number of workplaces have at least some employees who work on shifts or on call. These same industries where large numbers of employees are working on-call or shiftwork are the same industries where very long hours of work are being undertaken. Thus we have a “double whammy” that has the potential to have serious implications for fatigue. Not only are employees in these industries working irregular and unusual hours and suffering the consequences of shiftwork, they are also working long shifts and extended hours. The following tables highlight this trend.

Table 3 below shows that some industries -- like mining, transport are more likely to work shifts or be on call. These same industries also work the longest hours.

Table 3: Industries with employees who work shift or were on call

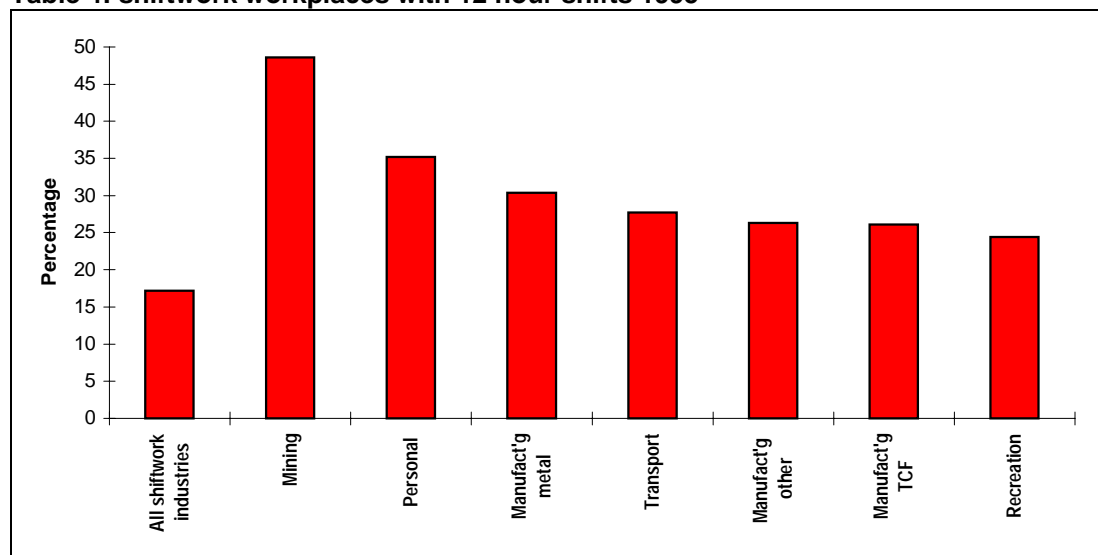
Industry	% shift and on-call
Health/community services	94.0
Accommodation, cafes	93.9
Utilities	86.1
Mining	81.4

Transport/storage	81.0
Personal	75.2
Recreation	73.8
Communication	68.2
Manufacturing other	64.2
Retail	63.7
All industries	62.6
Manufacturing metal	59.3
Govt admin	58.9
Construction	57.4
Wholesale	54.6

Source: AWIRS 1995 unpublished data

Changes in the scheduling of work in recent years has also led to the emergence of compressed and extended hours of work. Table 4 gives us some feel for where 12 hour shifts are being worked and we can again see that they are the same industries where extended hours are being worked.

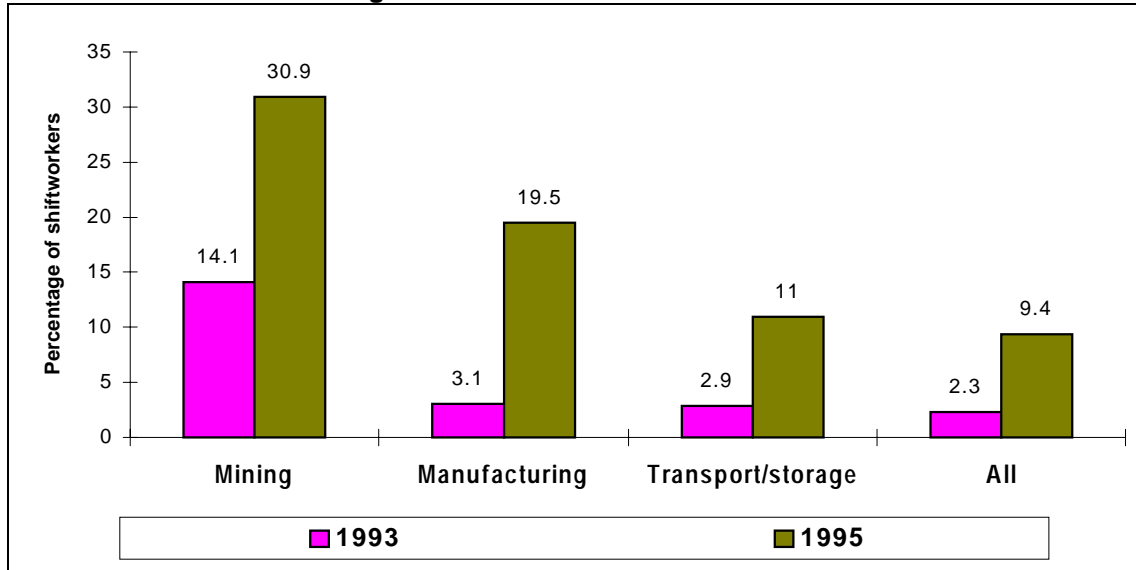
Table 4: shiftwork workplaces with 12 hour shifts 1995



Source: AWIRS 1995 (unpublished data)

Limited ABS data also sheds some light on the emergence of 12 hour shifts among employees and how they are worked. ABS Working Arrangement 1993 and 1995 provided us some limited data on shift length and roster. Unfortunately these data items were dropped in 1997, so we cannot track them beyond 1995. However, among those employees working shifts, we can see a large jump in the percentage of employees working 12 hour shifts between 1993 and 1995.

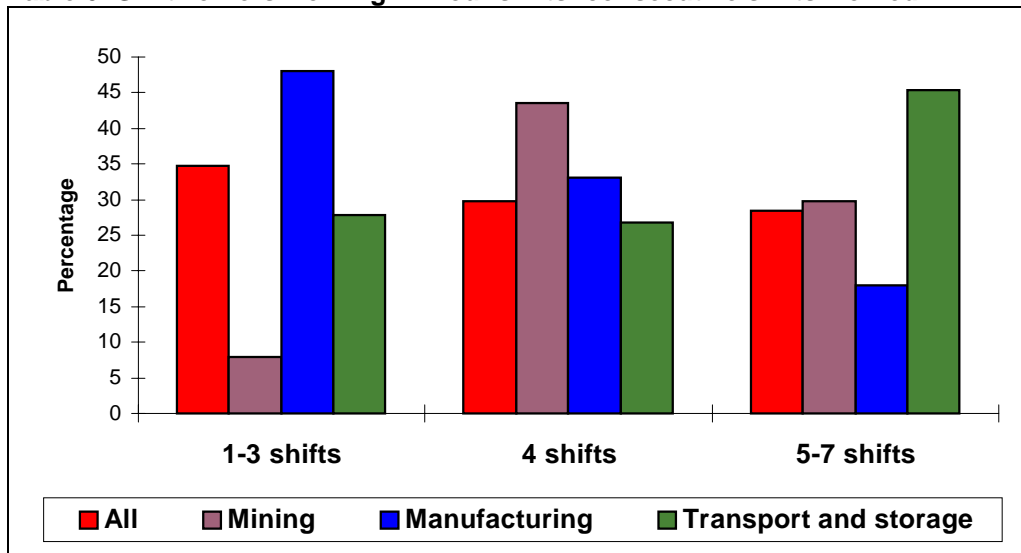
Table 5: 12 hour shifts among shiftworkers 1993 and 1995: selected industries



Source: ABS Working arrangements 1993 and 1995 (unpublished data)

While there is much debate about the pros and cons of compressed work schedules, there is less debate about the fatigue related effects of long and extended shifts. We can see from table 6 below that many shiftworkers who are also working 12 hours shifts are working many of them consecutively. For example, among persons working 12 hour shifts in transport and storage, around 50% were working 5 to 7 12 hour shifts consecutively. Thus hours between 60 and 84 per week are being worked by some shiftworkers in this industry.

Table 6: Shiftworkers working 12 hour shifts: consecutive shifts worked



ABS 1993 and 1995 Working arrangements (unpublished data)

Comment: Workplace or individual fatigue management will be a limited strategy within an hours regime where very long hours are being worked. The data above shows that the same industries where shiftwork and 12 hour shifts are most

prevalent, are also those industries where very long weekly hours are also being worked.

Initiatives to combat and manage hours related fatigue cannot operate in isolation from initiatives to combat the problem of excessive weekly hours. Unless we can also develop mechanisms that act as a disincentive against excessive regular hours, fatigue management usually technical strategies will fall short of the mark.

c) Other organisational changes/factors that may impact on fatigue management

(i) Increase in “atypical” employment/employment status

While the issue of hours-related fatigue can be tracked to a certain extent among employees, the rise of “own account” employment may exacerbate the problem. For example, whilst employees hours of work can be regulated to some extent through workplace agreements, awards and so on (however imperfectly), unregulated hours of work among self-employed, contractors and sub-contractors may be an emerging problem.

Table 7 shows the ration of employees to own account workers across the various industries. Again we can see that the contractor ration is highest where the hours regime is also very high and where extended shifts are being worked.

Table 7: Ratio of Employees to Own Account Workers, Selected Industries and All Industries, August 1997

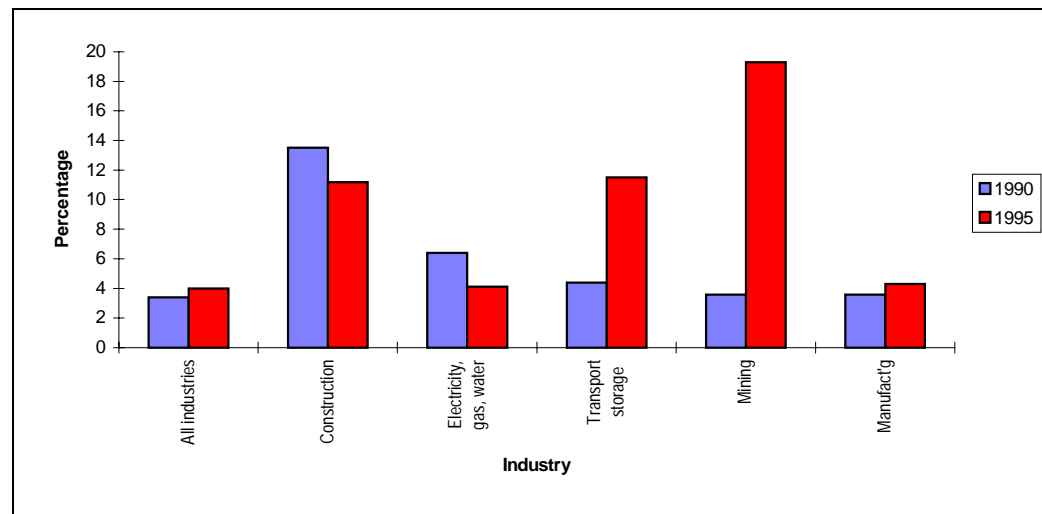
Industry	Ratio
Agriculture, Forestry and Fishing	0.86:1
Manufacturing	17:1
Construction/Mining	2:1
Wholesale Trade	17:1
Retail Trade	9:1
Accommodation, Cafes and Restaurants	19:1
Transport and Storage	6:1
Finance and Insurance	30:1
Property and Business Services	6:1
Education	33:1
Health and Community Services	24:1
Cultural and Recreation Services	6:1
Personal and Other Services	5:1
All Industries	7.:1

ABS *The Labour Force Australia*, Cat. No. 6204.0 and 6203.0

Table 9 below shows additional trends associated with increased proportional use of contractors at workplaces.

Table 9: Average proportion of workers who work on contract 1990 and 1995

Source: AWIRS 1995 (unpublished data)



From work we have undertaken in the mining industry, where contract employment is rising, we know that contractors on site are often not working to the same standard as core employees, but are working longer and more unpredictable hours. Several problems arise from this:

First, the hours of contractors are often seen as separate to the hours of core employees. Thus workers can be operating alongside each other under different hours regimes. This means that any fatigue management system would have to extend to contractors as well.

Second, because the issue of hours and fatigue are closely related, there are real OHS issues associated with the control of contractors hours. This can especially be the case where the contractors are working for labour hire firms and working with multiple employers. There can be no guarantee of the hours worked by any individual contractor before they arrive at a particular site. Recent fieldwork that we undertook at a coal site recently suggested that many contractors were commuting to various sites between shifts – leading to excessive hours already worked once they arrived at the subsequent sites. One employee recounted a story of how a contractor who had arrived on site to repair a dragline complained that he had previously (ie one hour before) completed two 12 hour shifts and was therefore into his fourteenth hour without a break (other than commuting for an hour between sites). This situation has the potential to place both the contractors and the core employees at risk.

Comment: we do not yet understand the relationship between increased contractor status and hours of work, or how the status of employment interfaces with the issue of fatigue. Unregulated hours of contractors may be creating increased risks of fatigue for both core employees and contractors. This is an emerging area that requires much greater attention.

(ii) Decentralised bargaining

As noted earlier, Australia relied on the award system to provide detailed protective provisions around working hours. Hours have been – for all intents and purposes – “deregulated” since control can now rest at a workplace level and we have no effective national or industry standards to rely upon. There is a raft of detailed changes to hours of work contained within agreements – collective, non-union and individual – many of which have implications for hours of work and thus fatigue. The following shows some recent trends:

Table 10: Hours provisions in agreements

Provision	% of Union agreements	% of non-union agreements	AWAs
Hours more than 38 p/wk	13	21	20
Flexible hours	79	86	88
Shift work	35	28	29
Span of hrs >12	25	36	33
Ordinary days Mon-sun	16	35	30
Hours averaged	21	37	26

Adam, ACIRRT, Adam, 1999

Provisions such as increased ordinary hours, days of the week, increased averaging and span of hours all fundamentally change the way hours of work operate. Whilst increased flexibility in hours can deliver benefits to employees, by and large we have found that the changes have been more concerned with increasing the flexibility OF employees in light of the operational needs of the enterprise. In particular, there have been many changes to hours issues such as changing rest breaks, meal breaks and so on that, combined with longer hours and extended shifts, may have implications for fatigue.

Comment: Decentralisation of bargaining is leading to fundamental changes in hours of work that may also be associated with longer hours across a range of industries. The fact that there exist no industry standards within which hours provisions in agreements can be tested (except for OVERALL no disadvantage), it is likely that we are seeing a profound dismantling of protective provisions. The way in which this may be leading to longer hours and thus greater risk of fatigue requires greater exploration. In addition, we saw from above that the further you move away from trade union coverage, the more likely were hours of work conditions likely to be eroded. The decline of trade unions may also be leading to changes in hours regimes that we do not understand well.

(iii) Unpacking the issue of employee “preference” and safety records

We have experienced that many employers seem to justify these working time regimes by arguing that either accident and injury rates have not changed as a result of the introduction of these shifts, and/or that these shifts are acceptable because employees have a strong preference for them. I would suggest that neither of these reasons absolves employers from taking responsibility for the potential fatigue effects of extended and compressed work schedules. First, it is well recognised that reliance

on LTIs is not a legitimate way to assess the safety environment at work. Moreover, it is likely that the direct effects of fatigue will not immediately manifest itself in increased LTIs. This does not mean, however, that there is not increased fatigue and increased risk. Second, the issue of worker preference needs to remain quite separate from the issue of whether or not these shifts are fatigue inducing. We do not allow workers to operate with asbestos merely because they have a preference to do so.

Comment: Whilst not well developed, we do need to understand the extent to which traditional safety records actually pick up fatigue related effects of hours. In addition, worker preference for excessive hours should not absolve employers of responsibility for these shifts.

(iv) **Impact of family, social and community life**

All of the above trends are likely to be placing much greater pressure on family units and the capacity of workers to be fully involved in their local communities

Long hours combined with shift work are likely to deliver a double disadvantage to workers and families:

- **Shiftwork is different and the demands it places on families are enormous; compressed work schedules are particularly disruptive to family life**
- ➔ Common family and social time has historically attracted a premium for good reasons - the loss of this common time requires enormous family adjustment
- ➔ Industry may wish to differentiate between hours of the day, days of the week, but families and the community do not;
- ➔ Other social structures, child care, schools etc assume a 'standard' working day and week (although increasingly less so)
- ➔ Places special physical demands on employees that families will have to adjust to that are disruptive (sleep, absences, unpredictability etc)

Findings from other research has noted that shiftwork impacts in the following ways on family and social life :

- social and family disruption
- reduced scholastic learning outcomes for children
- increased divorce rates (especially associated with some rosters)
- ➔ increased domestic load for women
- domestic disharmony
- child care issues and problems
- reduced sleeping outcomes
- reduced ability to be involved in children's activities
- reduced ability to be involved in sporting and community activities (especially rotating shifts)
- **The structure of families and the role of women has changed and the ability of families to adjust to shift work cannot be assumed**
- ➔ decline in "traditional family (male breadwinner female carer)

- ➔ Increase in single parent shift workers
- ➔ Decline of extended families
- ➔ Greater expectations on families from school, community cannot be ignored
- ➔ More complex societal demands places greater strains on family support structures
- ➔ Creates particular child care problems

Example: Work and Family (1995) reported research which identified the following specific problems for shiftworkers with children:

- 42% had difficulties finding care when needed
- 42% experienced difficulties due to roster changes
- 51% were not able to work extra hours or overtime because of child care constraints
- 39% had problems in being delayed at work and picking children up
- inadequate notice of roster changes. The survey found that 46% of workers (both with and without children were given one week or less notice of change in their roster
- **The capacities/needs of spouses cannot be assumed (workforce participation of women likely to be as high as for men)**

- ⇒ Increasing workforce participation of females with children aged 0-12
- ⇒ Increase in other “non-standard” work such as contract work, seasonal work and “on call work”. which reduces predictability for working spouse
- ⇒ Increasing trend in part-time and casual work, particularly among women

Changing family structures - we can no longer assume that families (ie women) can accommodate irregular working patterns of their partners. For example:

In Australia in August 1995,⁵ among couple families with dependents:

- ⇒ 95% had one or both parents in the workforce
- ⇒ 62% had both parents in the workforce
- ⇒ 93% had a male partner in the labour force
- ⇒ 64% had a female partner in the labour force
- ⇒ 46% of mothers with children aged 0-4 were in the labour force

Participation rate by age

Age range	male	female
15-19	56.0	56.8
20 -24	86.9	77.1
25-34	92.5	69.3
35-44	92.4	70.0
45 -54	86.7	68.9
55-59	73.6	43.9
60-64	46.5	26.2
65+	6.0	2.9

⁵ ABS (1995) cat no 6203.0 Labour Force Australia

Source: ABS Labour force may 1998 Cat 6203.0

Conclusions

The issue of hours related fatigue is of growing and legitimate concern in Australia and in the transport industry. The combination of a weak and ineffective regulatory regime, longer hours in many industries including transport, and the emergence of extended, irregular and unusual shifts should alert policy-makers to the need for action. The interrelationship between these trends and other organisational changes such as increased atypical employment, and decentralised bargaining is likely to exacerbate rather than alleviate the problem. Finally, the costs extend beyond the workplace to families and the wider community. The convergence of these issues takes the management of fatigue outside the responsibility of the immediate workplace alone. This is a broad community wide issue that requires urgent attention.

References

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