AMQ INTERNATIONAL
STRATEGIC ASSET MANAGEMENT

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MAINTENANCE EXCELLENCE

it supports Strategic Asset Management, so we should support it!

In this issue

Can our recent past help us predict our future ?

An innovative council in New Zealand is using its recent maintenance experience during the 1998 oil shock to try to predict what it may need to do when oil again becomes scarce. And you can try your hand at this, too!

Maintenance history as a guide to strategic decision making, a case study

How the knowledge, experience and observations of a senior maintenance manager led to a radical but necessary change in his organisation's asset strategy

The Maintenance Evangelist

Introducing Joel Leonard. How one man is working to reverse the maintenance engineering drain. Help him!

Please consider - and enjoy! Penny

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North Shore City Council *near Auckland in New Zealand is a most innovative council, even so I was surprised and delighted by their latest initiative, a workshop drawing on maintenance data and experience as a guide to future (strategic) action. This is their call to action, provided by* **Archer Davis, Group Manager, Transport Strategy and Planning**

What questions - and what information - would you have brought to the table if you had been part of this workshop? Although this workshop was initiated from Transport Strategy, they recognised and expected that discussion would cover the wider council responsibilities. **ALL SUGGESTIONS RECEIVED BY JULY 20TH WILL BE CONSIDERED FOR THE NEXT ISSUE**

Asset Management Lessons To Be Learned From The 2007/08 Oil Shock

Remember the 2008 Oil Shock ? What are the lessons to be learned from that ? What could be the impact on asset management planning decisions and advice to asset owners if and when we get a repeat of that period. This seminar is aimed at advancing our knowledge - drawing out some thoughts and answers from experienced asset management practitioners. It could set the stage for further research.

Introduction

The production and availability of liquid fuel for transport has reached a plateau in the last few years, and not for want of trying or because of low prices. Net oil supply has not increased significantly since 2005 in spite of some new discoveries and roll out of new alternative fuels, mainly because existing oil fields continue to deplete. But the BP Deepwater Horizon disaster highlights the risks now being taken at the bleeding edge of drilling technology, and the possible limits to development of similar new fields.

The daily rate of supply of all liquids has remained within a +/- 2% range of 86million barrels per day since 2005. Projections by significant agencies now point to net oil production gradually starting to fall, perhaps as early as 2013, with no chance of recovery. This will again set up an imbalance in supply/demand with a severe impact on prices, depending on the rate of recovery of the world economy, which is the ultimate basis of energy demand.

Review of 2007/08 Oil Shock

Fortunately we have already had a "dry run" of this scenario in 2007/08, and **we have all been able to observe the finer details of the interplay of market forces, economic reaction, traveller behaviour, council budgets, contract prices, and the effect on our assets.** We are now enjoying a brief respite with relatively low oil prices so we have the opportunity to think back to the last oil shock.

This seminar will present the context and some relevant details about the oil supply challenge and will provide an opportunity for practising professionals to wrestle with the issues based on their experience in general, and 2007/08 in particular. The objective is to advance practitioner understanding and to scope out possible management responses to a repeat of this scenario.

ARCHER DAVIS AND **SIRI RAMGAMUWA** set out some ideas on the topic below These are not intended to close off the conversation, rather they are intended as a catalyst to spur your own analyses. Participants at the workshop - [Ed: *AND YOU, VIRTUALLY!*] were asked to '**please delve into the records and revisit data from the period in question'.**

Some examples:

Issues that stand out from the 2007/08 period:

When the imbalance recurs we can expect some of the following issues to come to the fore:

- Rising costs for maintenance, renewals and construction. Although operating costs could be significant in a machinery intensive activity, they will be the least of our problems. Bitumen and tar materials costs could also rise as evident in the last such market imbalance. But the forecast for the future is that the heavy oil fractions (bitumen, tar) will increasingly be used as feedstock for synfuels as refinery capacity is extended to accomodate this. So the tar price is likely to be more closely linked to the oil price, to rise in tandem with lighter fractions. Road binders will no longer be a "refinery residue" to be disposed of at bargain prices.

    1. How do the costs of metalled and sealed surface maintenance compare ?
    2. At what level of cost / traffic volume does it make sense to revert to metal surfaces ?

- Change in mode split with higher heavy vehicle component. More demands from extra heavy vehicles to save fuel (ref new VMD rules). Likewise with more concentrated loads in HGCV (less just-in-time deliveries) to save on diesel delivery costs or rationing. If private car use becomes too expensive there may be a stronger swing to buses, with heavier axle loading.

- Inelastic peak hour traffic. In the early days of a market shortage the inelasticity of transport use for work and business will not result in much reduction in traffic during peak periods, in spite of cost or rationing constraints. Instead people will reduce discretionary travel as their first option for managing household budgets (the first order effect of price increases).

This will have two divergent effects.

1. First, the total revenue for subsidies for transport infrastructure derived from fuel sales levies will fall as the total travel distance falls, as engine efficiency becomes a focus of improvement, and as fuel consumption falls.
2. Second, since peak traffic will not be significantly affected, traffic congestion will show little decrease, if any. The public will continue to demand action to reduce congestion to reduce travel time, and therefore the cost of travel (i.e. greater fuel efficiency), and this will probably become progressively more strident. This will be made worse by a lack of capacity on existing transport alternatives due to cut backs in PT spending, as well as established geographical and land use realities that cannot change in the short term.

Economic recession. It is now clear that the most important effect of the oil price rise was on economic activity. This is the second order economic effect as it shows up after fuel prices rise, after a delay of several months. What happens is that the increased spend on fuel results in reduced consumer spending on other parts of the economy, which results in lower business activity, fewer jobs, etc. in a reinforcing cycle.

Some impacts may include:

1. Fewer employed people, meaning less commuter and discretionary travel and lower fuel tax revenues. The effect on business activity reduces HGCV movements.
2. Local government politicians will be reluctant to increase assessment rates during a recession, so the local contribution to renewals and maintenance will be considerably reduced. Together with lower fuel tax revenues for subsidies (now hypothecated), this will significantly reduce the total amount of budget available for roads.
3. After a prolonged recession and consistently lower traffic volumes the pressure to create new or expand existing corridors may be reduced. But there could be a very long lag period before this happens, partly because hope will remain that a recovery will appear, and also because policy makers often see new construction as visible evidence for, and a stimulator of economic growth. So a redirection of funds to boost deferred maintenance may be a long time coming.

As practical managers we live within a context of rolling 10 year budgets, with an eye on the full lifecycle of the many long lived assets we manage. So, our conversation is about what could be the impact on asset management during the time before alternative transport options are generally and widely available in the market place, which will be for a period of up to 30 years: from about 2015 – 2045.

There will no doubt be many other issues that experienced asset managers will be aware of, so the purpose of this seminar is to identify as many of these as possible. A further step could be to continue the evaluation using external resources.

Maintenance history as a guide to strategic decision making

Case Study: How good quality maintenance data led to a complete reversal of an organisation's strategy.

Many years ago I was asked by the State Government, through the Public Accounts Committee, to examine the likely future renewal costs and timing of the state's housing authority. Little published information was available to help in this task: we knew the number of houses the authority had, but not the age profile; and we had the historic purchase price but not the current replacement costs.

A recent condition survey had identified a number of faults that the authority planned to remedy over the next 20 years. But there was no understanding of what faults might arise in those 20 years that were not yet visible. A study of recent budgets showed that maintenance demands were rapidly increasing but the authority had no idea why and thought it a temporary phenomenon only. It was clear that I needed to get to grips with the life cycle properties of the housing portfolio. **But where to start?**

Luckily for me, I started with the Senior Maintenance Supervisor. He had been with the authority a long time and, like most maintenance personnel, he knew his assets. From him, I learned what style of building was common in different locations and at different times, what the key problems were then (salt damp and ground shifting), and how long it generally took between repaints and renewals. There was no 'official' building life cycle at this stage, but he had it all, instinctively, in his head.

In the end I was able to develop a basic life cycle model (in 1986) that encompassed 26 components and sub-components. I also knew when to make variations to the model to cope with the particular situation with pre-war stock (which had much longer lasting terra cotta tile roofs) and the stock acquired in the immediate post war period when demand increased so much because of refugees, migrants and returning soldiers that supply could not keep up and many houses were built, by default, with green timbers and low grade ceiling materials. All of this information came from maintenance.

Whilst the lives of all of the elements in the model were checked against budget expenditures and CSIRO and other reputable estimates, **the view of the maintenance personnel was critical.**

When we put all the information together, what we found was, indeed, eye-opening!

Financially Unsustainable! The default projections (based on clearly stated assumptions) showed that there was no way that the authority could sustain its current level of housing stock without a very large increase in its funding. As the authority at that time had a strategy of greatly increasing the housing stock, it did not take kindly to being told that it was effectively already 'over budget'.

The first thing that management did was to challenge the figures. My economic lives were considered 'ridiculously short'. To prove their point they asked their regional maintenance supervisors to provide the 'right' figures. When these figures were averaged, mine differed by only a few months on any of the 26 components. But, of course I was so close - my figures had come from their knowledgeable people in the first place!

The next they tried to do was to challenge the model. When this failed, and it did fail, they protested loud and long. But the facts are what the facts are. Over the subsequent years, the authority had to considerably **reduce its portfolio to reach a sustainable level.**

The combination of a strategic model - and good quality maintenance data for the inputs - resulted in the government eventually requiring a complete turn around of the existing strategy.

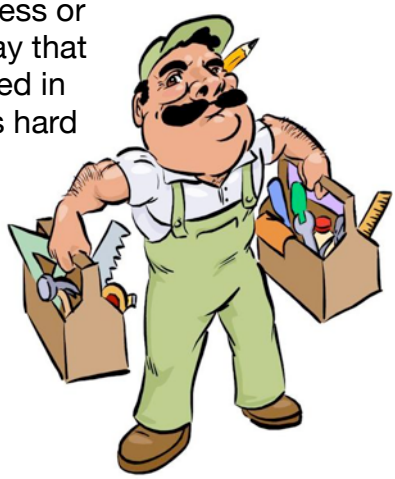
(The full model and all details are published in the SA Parliamentary Papers for 1986-87, volume 7)

Appreciate your Maintenance Personnel!

In the 1950s and 1960s, Fairey Aviation was a contractor to the Defence Department. They built highly accurate, very fast, cameras for use in high speed missiles. Their major piece of equipment for this task weighed almost two ton and, when it broke down, it had to be dismantled, the essential elements shipped to the UK, where it would be repaired and shipped back again and re-assembled. On the last occasion this had cost the company 3 months of operation. My father was hired as a maintenance mechanic to make sure that it never had to be sent back to the UK for repairs again. And he was proud of the fact that for all the many years in which he was responsible, it never did. He did not get paid much, he was 'just' a maintenance mechanic, nor did he get much support from management - but his maintenance knowledge, imaginative insight and dedication were critical to the company's operating strategy! When he died, at the very early age of 56, all of the top brass of that company turned out to the funeral. I couldn't help thinking at the time that it would have been better if they had shown that level of appreciation during his lifetime.

The Man with the Spanner

Whether miserable and gormless or cheerful and gormless, the way that maintenance men are portrayed in the media, it is no wonder it is hard to attract young people into the profession.



The fact is that, with today's technology, the picture below is probably a better representation.

One fellow who does not make this mistake is the

MAINTENANCE EVANGELIST, JOEL LEONARD

I met Joel at the recent ICOMS Conference. In fact, *Everybody* who was at ICOMS met Joel - he's like that. A very large and cheerful American - who sings.

Joel is on a campaign to get a better deal for maintenance - and especially to attract more young people, men and women, into the profession. He tells the story this way: Whilst worrying about the fact that about 40% or more of the current players in the industry are due to retire in about ten years - yet few are entering, he noticed a crowd of 5,000 young people queuing for audition for American Idol.

This inspired his song about the need for maintenance, and then another about the need for women in maintenance. Not content with that, he produced his song in many versions - country, blues, rock 'n roll, - and, just yesterday he sent me the latest version - a hot gospel track! Same words, same message. But every time he produces something new he gets TV and radio air time. **He has found a way to break through the media's reluctance to pay attention to today's maintenance situation.**

On his website (google **Skill TV)**, he has the best collection of information for maintenance - videos, podcasts, articles - that I have ever seen.

There is a great need for maintenance training:

"What if we train them and they leave?"
"What if you don't - and they stay?"

Below are the words to Joel Leonard's 'Maintenance Crisis' song. You can download the song or go to **YouTube** - key in **Joel Leonard** and **Maintenance Crisis** and get your choice of different renditions - with some really great pictures! Good for a sing-along at your next meeting.

Visit Joel's site, **Skill TV** - and join his fight for more industry support for maintenance training.

Remember: You can't do <u>your</u> job as a strategic asset manager unless maintenance are doing <u>theirs!</u>

MAINTENANCE CRISIS SONG BY JOEL LEONARD

No one wants to work in the boiler rooms
No one wants to work with the tools
Nation's youth are taking the easy way out
There's no one left to fix our schools
Maintenance technicians are about to retire
Company executives have got no one to hire
How safe does it make you feel? How safe does it make you feel?

America needs no more TV idols
Talent shows are rigged anyways
Our building maintenance infrastructure
Could blow or leak or fade any day
There's no easy road to getting rich
While our national treasures are going down in a ditch
How safe does it make you feel? How safe does it make you feel?

Working in maintenance is an honorable field
Gone are the days of Bubba, Skeeter and Neil
Today you use computers and sophisticated tool
But there's no one entering our technical schools
How safe does it make you feel? How safe does it make you feel?

Supply fans and cooling towers
Are breaking down all over the place
High pressure, low pressure, springing a leak
Well I can you it's a big disgrace
Industry knows what we've got to do
Find and train a workforce who will fix it for you
How safe does it make you feel? How safe does it make you feel?
How safe does it make you feel? How safe does it make you feel?