



► INNOVATION
AWARDS
1988

INNOVATION AWARDS 1988

THE INNOVATORS - People who look for Progress.



Reg Patterson.

▶ “The solutions of the past have served us well, but they are not necessarily the answers to our needs today or of tomorrow” was the message from Reg Patterson, then RCA Director Operations, in announcing the results of the Innovation Awards for 1988.

“If we are to successfully meet the challenges of the future, we must develop better ways of doing things, as individuals and groups within an organisation we must increasingly become more creative in our daily work” he said.

“Innovations do not come out of a machine.

“Innovations come from our people. They are conceived, designed and implemented by people. People who strive for improvement and ultimately for excellence.

“We must therefore encourage our people to be innovative. We must sponsor and nurture innovation, and celebrate it - as we are here tonight.”

In 1987 the former RCA Board agreed to establish an innovation awards scheme to encourage and reward innovation in the pursuit of excellence, effectiveness and efficiency.

63 nominations of high standard were received for ideas developed last year from a wide range of areas in the RCA.

There are three levels of recognition, in order of merit:

- Innovation Award.
- Highly Commended Innovation.
- Commended Innovation.

For 1988, there were seven Commended Innovations and one Highly Commended Innovation.

In talking to the people who received awards, the innovators, one thing is apparently common - they are the type of people who get things done.

You get the impression that if they come upon a problem, in due course it will be the problem that comes off second best. A lot of thought, some trial and error, plenty of perseverance, and a bit of sideways thinking perhaps and eventually that particular problem will be tossed into the solved basket.

These are modest people, they take their awards quietly, aware that plenty of help from others has come to make their success possible. But they all have a quiet pride. They are pleased to have seen that something was needed and that they have helped resolve the better way.

Their achievements fall into two groups.

One is when the day came when they said to themselves “there must be a better way of doing this.”

And they went about finding that better way. To improve their own working conditions, and those of their workmates, and to increase their work output.

The other group is where the working situation changed, with a stumbling block arising on the road ahead.

Quite simply the task was put to them to find an answer, a way around or over that obstacle so that the new job could proceed.

They found that new way.

That is innovation.

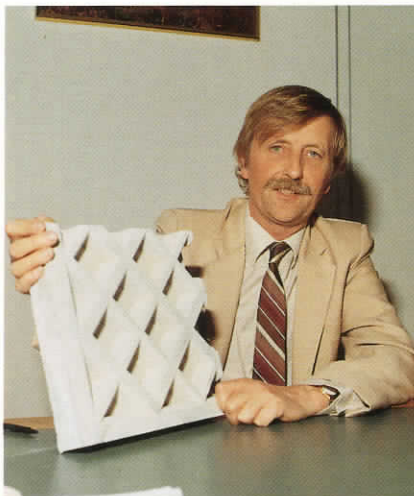
For 1989 and beyond, the RCA award scheme has been revised and extended to apply to all VIC ROADS' people and work areas.

The front cover photograph illustrates two of the Innovation Awards - the Sound Absorption Barriers on the South Eastern Arterial and the method of their erection.



Gernot Schubert receiving his award from the Chief Executive, Ian Stoney.

HIGHLY COMMENDED INNOVATIONS



Gernot Schubert.

- ▶ **GERNOT SCHUBERT** (Manager, Quality Systems), **PHILIP WEST** (Environmental Services), and **NOEL RANSOME** (Bridge Branch) for developing a fence to reduce traffic noise.

Noel Ransome had been looking for a light-weight sound barrier to be used on bridges, when glass reinforced concrete (GRC) came to his notice. It looked interesting to him.

But at the initial discussion meetings that interest wasn't shared by others. However, the environmentalists supported Noel, and gradually the support from other areas grew.

Phil West had been investigating the nitty gritty of noise barriers. "We were concerned that they weren't covering the full noise range needed. All sorts of weird patterns and ideas came to light. We decided on GRC because of its compatibility, and we saw that we could build a better fence than the overseas ones with less maintenance and with better noise control performance."

Indeed, the revolutionary new noise barrier system uses a unique double baffle and air gap construction which has world wide patents.

Laboratory and field tests have demonstrated excellent noise attenuation characteristics, particularly across the frequency

spectrum associated with road and rail traffic and various industrial noise suppression applications.

The panels are aesthetically pleasing, easy and quick to install and are mounted on concealed posts. Absorption, reflective and dispersive panels can be easily interchanged within the system.

Phil is pleased with the way it came out. "The organisation has been good. We were allowed to get on and get the job done.



Philip West.

"The real carrot wasn't an award as such, but to get the problem solved and to see it on the ground. But it's good to see the organisation saying well done."

Phil came to us four years ago from EPA. He is an environmental officer with a Master of Environmental Engineering from Melbourne University.

He is learning to fly, is very keen on old jaguars, sails model yachts, and has two boxers, dogs that is.

His wife Jan is a chartered accountant.

Gernot Schubert was team leader for the project.

As the Project Construction Engineer for the South Eastern Arterial, Gernot was involved from the onset in promoting the concept of GRC for noise barriers.

The initial concept for noise barriers had been to make them from timber - without Gernot's persistence the GRC barrier may not have come to fruition.

Gernot joined the CRB in 1965 as an engineering assistant, and has since then been involved in some of our largest urban road projects. Gernot believes the innovation awards are an excellent way to show recognition.

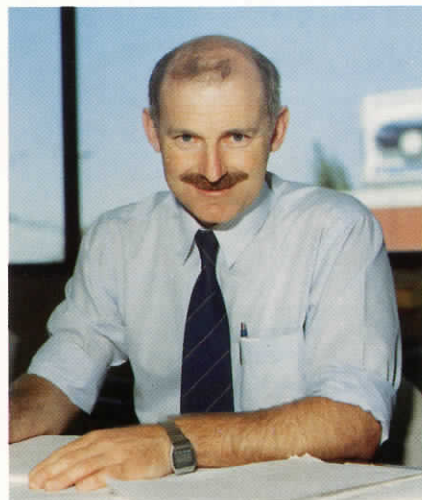
He is married to Robin with a son Volker and daughter Elke. He enjoys sailing and tennis, and likes a bit of camping or skiing.

Noel Ransome transferred from the Board of Works in 1974. He is a Team Leader, designing bridges.

He plays golf, not too badly.

The innovation awards have had a strong effect in spreading ideas throughout the organisation, he says. "An idea used to tend to stay in the one area, there wasn't any avenue to spread it around, except by somebody passing through and seeing it.

"Now ideas get put about quickly and more constructively with method."



Noel Ransome.

COMMENDED INNOVATIONS



Phillip Parker.

► **PHILLIP PARKER** (Service Centre Admin Officer, Ballarat Service Centre) for developing a computer program to prepare wages for field personnel.

Phillip's program can be used by non-expert computer operators, it eliminates a great deal of boring work and has given increased accuracy. What led him to get involved in designing a computer program was simply a desire to do his job better.

Computers had come into his life when his section was given a computer to gain familiarity with these mysterious machines. "They said play with it for three months ... we don't expect anything."

Twelve months later Phillip started on the payroll system, working in his own time.

Practical, get the job done effectively, no excuses, Phillip had been spending two days a fortnight preparing wages. Now, a couple of hours and it's done.

"We had been waiting, it seemed like years, for a new system for wages. So I thought I would have a go at it.

"I worked on a dBase system.

"Someone rang me and said it couldn't be done. He said, you don't know what you're talking about — dBase can't calculate."

Apart from its leap in productivity, the system has the advantage of reducing job stress.

Another important advantage is that when the regular officer is not available it can be used by somebody else — so the job gets done without fuss. Other regions are using it with considerable savings to VIC ROADS.

Phillip started work with us 10 years ago as a storeman at Ballarat.

With his wife, Joy, and their children, Katie and Sam, drag racing is the after-hours passion. "We get to see the country, travelling to drag meets throughout the states."

"Joy was great about the whole thing. Actually, Joy should get an innovation award. She used to invite me out to dinner, now and again, she said it was the only way she could get to see me.

"For three months I hibernated. I had the computer set up on the kitchen table and we ate from our knees.

"One thing about the Innovation Award, it's something for the family to see — it helps make up for putting up with a grump for weeks on end.

"The award night and dinner were really good. It was great to hear the managers' positive attitudes to the awards."

► **GRAEME BENTER** (Apprentice, Warrnambool Service Centre) for modifying and redesigning linemarking units.

With the old machines, workers painting lines on the road had to stop the machine, go to the front, to set the adjustments when they had to change the line widths. A short time later, they would have to go through the procedure again when a different width line was needed.

This would happen a hundred or more times a day. The machines had some other operational inefficiencies, and the operators were "sick of it."

Graeme was given the job to rectify these shortcomings.

He improved the balance of the machine to avoid it tipping up, modified the paint gun mount so that it can easily be adjusted through a full height range with



Graeme Benter.

the machine travelling, and he redesigned several of the machine functions and controls to reduce material wastage and operator discomfort. Steven Cumming, Graeme says, gave him a hand.

It took just three days after "the boss said go to it".

Graeme is 21, he collects garage antiques. Old petrol and tyre signs, oil bottles and petrol bowsers. This interest comes from his hobby of restoring cars.

He believes the innovation awards are just the thing to give people incentive to make things better.

COMMENDED INNOVATIONS



David White and Tony Powling.

► **DAVID WHITE** (Manager, Melbourne Service Centre, Plant Branch, Glen Waverley) and **TONY POWLING** (Overseer, Eastern Projects) for designing and developing an installation kit for the noise control fences on the South Eastern Arterial.

A new system of using glass-reinforced concrete panels to reduce noise had been developed and was to be used for the South Eastern Arterial. It was a world first in fact, and new ways had to be found to install these panels efficiently. The most important requirement was that the panels have only a small degree of tolerance - to put in one supporting post, align it, wait for the concrete to set, put in the next post, wait for the concrete to set, and so on, had certain drawbacks. An alternative procedure had to be found.

Another aspect of installing these panels was that they were relatively heavy and brittle. Adjusting them into position and aligning them was difficult and could easily cause damage to the panels.

David and Tony were given the job to find a solution in time to have the fences up when vehicles started streaming down the arterial.

"Really, the whole thing was based around doing it quickly and properly," said Tony. "You can't have a long-reach crane sitting around all day waiting for concrete to dry. And we needed the panels to be straight, we didn't want people driving down the arterial with the fence looking like a row of dog's teeth."

Tony would go to David and his staff with a need, and after discussions a concept would evolve

of which prototypes would be manufactured and modified until the need was successfully met.

This team effort came up with a set of "tools."

Spacer bars locked onto the posts, which allowed a kilometre or more of posts to be set in position accurately, ready for the concrete.

Various levers and special handles allowed the panels to be lifted and manoeuvred without damage to the panels or the workers, and caps were used to protect the posts if due to level variation they had to be readjusted vertically.

Tony Powling started with the CRB in 1966 as an experimental field officer. He is now on his third spell with the Victorian roads authority - he must like us to keep coming back. He did a stint on the Hume Freeway and another from 1983 at Dandenong as assistant overseer.

In the meantime he worked on Sugarloaf and Thompson Dam with private industry contractors. Tony liked that, they had a fresh approach to things.

Another stint away was in New Guinea, which broadened his knowledge. "One job was an airstrip on the Sepic River. They paddled four or five canoes to carry in the gravel. Time and motion studies were a bit different up there."

With wife Thea, and his three children, Tony's leisure revolves around motorcross, with his two sons competing.

David started as an apprentice motor mechanic at Bairnsdale just on thirty years ago. He is married with three children.

He says his innovation award is wrongly named. "In fact there were a lot of people involved in it. Some innovations can be a one-man-band but this was a real team effort."

COMMENDED INNOVATIONS



Peter Hurren and Russell Hicks.

► **PETER HURREN** and **RUSSELL HICKS** (both Roadmarking Operations Team) for developing a device for spotting out reseals and new roads ready for linemarking.

For many years the roads had been spotted, that is spots put in place to guide the linemarkers, by people walking around with tape measures and paint brushes. Most of this work was done by councils or patrols — it generally took three people to do the job.

Russell Hicks was on a job on the South Gippsland Highway in 1988 which took three people two days to finish. He remembers the job well, "After walking up and down the Highway for two days, I thought there has to be a better way than this."

Today, that same job would take him three hours without help.

The better way he and Peter came up with, is a frame which can be mounted on the front of any car or ute. On the frame are some "upside-down" pressure pack paint cans activated by a solenoid release. They now drive down the road at about 8 km/h, line up the work with a sight pole mounted on the right hand side of the bar, and press a button.

They started out with a single gun. After working at Glenrowan on the Bypass, the idea arose of using two guns to paint two lines

simultaneously. Now, they are thinking of ways to utilise a spray tank to increase speed up to maybe 20 km/h.

Apart from the very impressive increase in productivity, which is in the order of tenfold, the very wide bull bar with spray cans has some decided advantages. It does away with a lot of unpleasant work, and in fact some very dangerous work. Another advantage is that it can improve the quality of the job.

By hand, the marking often looked good while you were standing up close, but when you drove through the new work it had kinks.

Russell is married with three children, he has been with VIC ROADS for 19 years after starting out as a linemarker and has worked his way up to Superintendent of Works.

Peter started as a linemarker 11 years ago, transferred into head office as a clerk and is now Clerk of Works and daytime supervisor.

With their track records, it is not surprising that they are both supportive of anything that breeds innovation.

Peter says, "A lot of ideas are for safety, and a lot are for saving time and money. That's what we are all about."

Russell, too, sees the innovation awards as the key to the system working better, "A bit of a pat on the back doesn't hurt. Morale goes up and we get more work done, everyone's happier. I've said to all our guys to come in and have a yarn, and we'll get the workshop to work on any ideas that sound interesting.

"Every idea isn't going to work. But when one does, productivity goes up and it will continue on for a long time."

► **RICK POPE** and **NEIL FELTHAM** (both of Land Information and Survey Group) for developing a computer package to enhance the Cadastral Survey process.

There was no package to be bought off the shelf which can semi-automate the Cadastral



Neil Feltham and Rick Pope.

process, that is land survey and title work.

Surveyors search a copy of the relevant titles from the Land Titles Office, draft out a work sheet from these titles, then use it in the field. On return to the office from the initial field work the original work sheet can go through a number of revisions until final. A copy of field notes is then drafted up and, together with the worksheet, is handed to the draftsman for final plan preparation. This whole process used to involve a lot of repetitive and duplicated work.

Rick and Neil have simplified this process — eliminating a lot of repetition and gaining a possible 40% in productivity by a well trained operator.

The resultant output has been accepted by the Victorian Titles Office and was initially thought of as a defacto standard for CAD presented documents. It has no equal elsewhere in Australia and is now being marketed to the public and private sectors.

Rick had been involved in the Interim CAD study. "I knew we were falling behind and this study confirmed my opinion that there was no way we would be able to compete with the private sector within the cost effective environment we now work in, unless we could develop greater efficiency, which is what we have achieved."

COMMENDED INNOVATIONS



Simone Servais, Kelvin York and Andrew Walker.

- ▶ **KELVIN YORK** (Section Leader Soils Construction and Quality, Assessment Section), **ANDREW WALKER** (Section Leader Concrete and Metallurgy) and **SIMONE SERVAIS** (now with Australian Road Research Board) for developing a calibration of nuclear density and moisture gauges.

It is important to ensure that earthworks and pavement materials are adequately compacted during construction. This requires the testing of the density and moisture content of the road making materials.

Nuclear density and moisture gauges are becoming the most common means of measuring these properties; gamma radiation and neutrons are used to measure density and moisture content respectively.

Nuclear gauges must be calibrated against standards of known density and moisture content. The gauges are calibrated by the United States manufacturers, but the Australian National Association of Testing Authorities (NATA) does not recognise these calibrations.

An increasing potential to use the gauges, together with an increasing risk of litigation if the work was not suitably protected,

highlighted the need to have calibrations certified by NATA.

Kelvin had seen the pressure to increase productivity with more extensive use of nuclear testing which is much quicker than other methods as well as the need for its greater precision and reliability. But the lack of approved calibration was the stumbling block.

No Australian companies were interested in providing a calibration service, so finally, "If we want this, we'll have to do it ourselves."

It was necessary to establish a set of stone blocks of known density, over a wide range of densities. This was more difficult than it sounds. Quarries and stonemason yards throughout Australia were scoured to find a range of blocks of suitable densities and durability. Special testing equipment had to be assembled and techniques developed in order to determine the density of the blocks, which weighed about 150 kg, to the required accuracy of 0.3%.

Moisture content calibration was calculated using as standards a solid aluminium block and aluminium tanks fitted with thin, closely-spaced aluminium baffles, and filled with water.

The RCA was subsequently the first organisation in Australia to be registered by NATA for the calibration of nuclear gauges.

At the request of NATA, the RCA agreed to offer a nuclear gauge calibration service to external operators. More than sixty gauges have been calibrated for these operators, from all Australian States and Fiji.

The success of this work has clearly set the RCA at the forefront of nuclear gauge testing in Australia.

Kelvin York started in the soil lab in Carlton 30 years ago. He represents VIC ROADS on the C 12 Standards Association Committee, where he is Chairman of the sub committee on road base materials.

Kelvin has two grown-up daughters. He plays goalie for one of Box Hill's hockey teams.

He is proud that "we have always been an innovative organisation. Many of the tests in Australian Standards have come from us".

Andrew has been involved in non-destructive testing since he joined the organisation in 1969. He is also involved with steel testing, metallurgy and concrete.

He is pleased and proud to be recognised for his work, but "a lot of other people should be awarded too".

He is a cross-country ski racer who likes rogaining, gardening and renovating his Belgrave home with wife, Sue.

Simone was a bit reluctant at first to be involved with nuclear radiation, but was soon reassured that safety aspects were carefully monitored by the Victorian Health Department. "Nuclear instruments need to be treated with respect."

Her input to the project was through one of her many interests - the use of micro-computers for statistical analysis. She keeps busy with two children, and enjoys gardening and cycling.

She believes it is important to encourage people to strive for new ways. What she likes about the innovations awards is that they have the potential to reach everybody in the organisation.

COMMENDED INNOVATIONS



Brian Nicholls, John Hutchinson and Colin Wright.

► **JOHN HUTCHINSON, BRIAN NICHOLLS, and COLIN WRIGHT** (all of Bridge Maintenance, Central Gippsland Region) for designing and developing a portable drill stand.

The drill stand was designed to eliminate spine, arm or back muscle strain.

It can be used in an upright position or lying on a flat surface for drilling through timber or concrete, or suspended beneath a bridge horizontally or vertically to drill through piles and crossbeams. It can also be used to drill steel or timber guard rail posts, or steel RSJs in the field.

Brian Nicholls had been working on a job at the old goldmining township of Walhalla, drilling some hard timber, when the drill jammed. John helped him to pull the drill free. The result for John was three months laid up with a damaged back.

A suggestion by Peter Aalbers, in the Accounts Section of Central Gippsland Region, to have a method of holding the drill to the end of the truck-mounted crane was investigated. The maintenance gang threw a few ideas around, in the words of Brian "We all came up with bits and pieces, then eventually came up with a plan and got an engineer to build it."

John's back is still not the best, but he can drill with the new stand without trouble, so it works.

John is married to Janette, with three children, and he likes gardening and punting on horses. He is an overseer with bridge maintenance who started as a powder monkey's assistant 26 years ago on the Moondarra bypass.

Brian is a builder by trade, a construction carpenter who loves fishing and is an active member of St John Ambulance Brigade. Married to Elaine, they have three children who are off their hands now.

Brian thinks the awards are a good idea as they give everyone a challenge. "I couldn't care if we got it or not, the idea will save

fellows' backs ... that's what is important."

Colin is married to Lisa. He mixes some fishing with classical music and reading and then there's the garden and 50 sheep to take care of. He is a construction carpenter, building his own home. He goes to work, he says, to keep out of mischief.

► NOMINATE NOW FOR 1989

Nominations for Innovation Awards and Commendations for 1989 can be submitted to - Andrew Houghton, Secretary, Innovations Judging Panel, Fourth Floor HEAD OFFICE Telephone Kew 860 2528