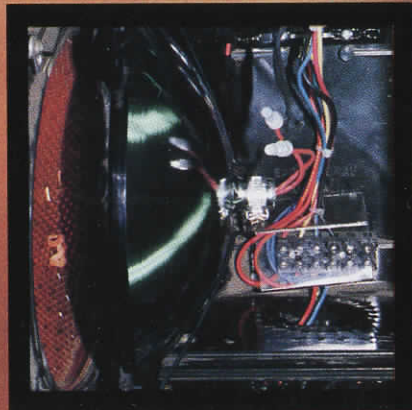


The 1989 Innovation Awards

**People
making
progress**



**INNOVATIONS
COME FROM
PEOPLE.
THEY ARE
CONCEIVED,
DESIGNED AND
IMPLEMENTED
BY PEOPLE
WHO STRIVE FOR
IMPROVEMENT
AND ULTIMATELY
FOR EXCELLENCE**

The Innovation Awards

"The challenges of the future will be met successfully only if we are able to continue to generate improved ways of doing things," said Chief Executive Reg Patterson in announcing the winners of the Innovation Awards for 1989.

"As an organisation, over the years, we have built a sound history on not resting on our laurels. The solutions of the past have served us well, but as we move forward we know the importance of becoming more creative in our daily work.

"This will happen only because our people, as individuals and groups within the organisation, seek to improve on the ways of the past. Not tied to routine without question, following the ways a task was 'always done', but ever conscious of the possibility of doing a job faster, cheaper or better.

"This desire to do it better comes from our people and so we must encourage them to be innovative; we must sponsor and nurture innovation."

The Innovation Awards were established in 1987 to encourage and reward innovation in the pursuit of excellence, effectiveness and efficiency.

The scheme has three levels of recognition, in order of merit:

- Innovation Award
- Highly Commended Innovation
- Commended Innovation.

In 1989, 62 nominations were received from many different areas of the organisation.



Reg Patterson presenting Tom Todaro with the William Calder Innovation Award. Manny Parnis was overseas at the time.

Half of the nominations were for field and depot staff and the balance for office-based staff. A complete list of nominations is provided (see back cover) in order to illustrate the diversity of innovative thought in VIC ROADS, and to allow people to follow up the good ideas of others.

Of the 62 nominations, ten projects received awards. Some were for pieces of equipment that had been developed to quickly and safely do work which had previously been time-consuming, been very hard work for

those concerned or had aspects of danger which had too often resulted in injuries. The projects involved 12 people, with one person receiving two commendations for different projects.

The awards and commendations celebrate a considerable range of progressive thought and it is with considerable pleasure and pride that VIC ROADS presents these 1989 award winning projects.

THE 1990 INNOVATION AWARDS SCHEME IS OPEN TO ALL EMPLOYEES OF VIC ROADS (AS INDIVIDUALS OR WORK GROUPS) FOR INNOVATIONS FROM ANY FIELD OF WORK WHICH HAVE BEEN SUCCESSFULLY APPLIED.

THEY SHOULD HAVE COST-EFFECTIVE PERFORMANCE OR SIGNIFICANTLY IMPROVE QUALITY AND THEY SHOULD DEMONSTRATE EXCELLENCE IN REGARD TO THE ROLE OF THE INNOVATOR.

OTHER FACTORS WILL BE CONSIDERED SUCH AS QUALITY, TECHNICAL OR WORK IMPROVEMENT, SAFETY, IMPROVED CUSTOMER SERVICE AND PROMOTION OF VIC ROADS.

NOMINATIONS FOR THE 1990 AWARDS SHOULD BE MADE BEFORE

31 JANUARY 1991. FOR ANY FURTHER INFORMATION CONTACT ANDREW HOUGHTON, METRO NORTH WEST REGION, ON EXTENSION 8702.

Tom Todaro ■ Manny Parnis

CURRENTLY SECONDED TO SERVICE IMPROVEMENT DEPARTMENT ■ MANAGER, PRODUCTION SERVICES

Tom and Manny were given a brief to cut down on the running expenses of the registration renewal procedure; and in fact to justify the existence of the label.

At that time, the registration and licensing systems were being converted to an in-house computer so it was the opportune time to incorporate any changes to the clerical and computer systems and to streamline the procedures.

For various reasons, they found it was not acceptable to do away with the label altogether. Then the 'think tank' concentrated on the system itself. Several people were involved including Denise Richardson and Jim Christopher, trying to pull the many requirements of the project together in the best possible way.

Perhaps the most important requirement was the need for the new system to work in 'one-stop-shops', where the label could be immediately validated at the time of payment.

The idea began to take shape but the detail and the technology we now know as the 'Stamp and Stick' label was still a long way down the track, with many barriers to be overcome.

One of these was the element of security, with some very real fears and objections from some quarters to providing the registration label before payment was made.

The development team could see the potential for significant savings in the process, and so could Rob McQuillen, who sold the concept to the organisation very successfully and then "gave the team the go ahead to go and do it".

John Todd from Information Technology Section was an enormous help in co-ordinating the computer programs to make way for the appropriate changes.

Manny and Tom then had to concentrate with the manufacturers on developing the technology needed; basically a precision problem in applying a silicon release agent to the back of the form.

Before the advent of 'Stamp and Stick,' less than 50% of registrations were paid at banks. Almost immediately this rose to 64% and has continued upward until two years later it is now around 72%. This means 700,000 more customers now pay their registration at a bank instead of at District Offices or by mail. In addition, further substantial savings have been made in eliminating the return mailings (and materials and processing) in about 90% of the 3.2 million registrations each year – releasing time and money to serve customers in other ways.

Several industry awards have been given to 'Stamp and Stick.' South Australia and Queensland have adopted the basic product and New South Wales is looking into it.

Tom joined VIC ROADS fifteen years ago. He is currently Senior Projects Officer with the Services Improvements Section.

Now and again he doesn't mind a flutter on the ponies or if he can find time he likes to potter in the garden with his wife Karen and their three young children, Joseph, Emilia and Luke.

Manny joined what used to be called the Car Division as a clerical officer 26 years ago. He worked his way up into data processing and is now Manager of Production Services at Carlton.

His interests include reading and he likes to try his luck with the horses (not necessarily in that order).

Manny and Christine have three sons, Christopher and Stephen, still studying, and Andrew who works with Telecom.

William Calder Innovation Award

Tom and Manny believe that for any organisation to be progressive it has to generate incentive. They see how this has grown in VIC ROADS in recent years "apart from the personal satisfaction of doing your job" and see innovations spreading even further due to the awards scheme.

Manny Parnis and Tom Todaro pictured with their award.



**FOR THE
CONCEPT AND
DEVELOPMENT
OF THE NEW
'STAMP AND STICK'
VEHICLE
REGISTRATION
LABEL SYSTEM**

Barry Jan

TECHNICAL OFFICER, TRAFFIC SIGNALS INSTALLATION AND MAINTENANCE

FOR THE
DEVELOPMENT
OF A RETROFIT
PACKAGE TO
IMPROVE THE
PERFORMANCE OF
EXISTING TRAFFIC
SIGNALS

Traffic signals which use 240 volt power have two things in common. One is a power bill to VIC ROADS of over \$2.5 million a year. The other is a maintenance bill which is very large due to globes failing all too quickly – they are programmed to be changed every eight months, but in the meantime one in four will fail, which means expensive emergency repairs have to be carried out.

The cost of maintenance escalates when the heat of the 240 globes warps the signal housing, which allows moisture to get at the globes, causing them to shatter.

Another factor which pushed the need to find a better system was the poor light output from signals as they aged.



Barry designed a package to fit to existing traffic signals using a transformer and a 12 volt quartz/halogen globe to replace the 240 volt incandescent globe.

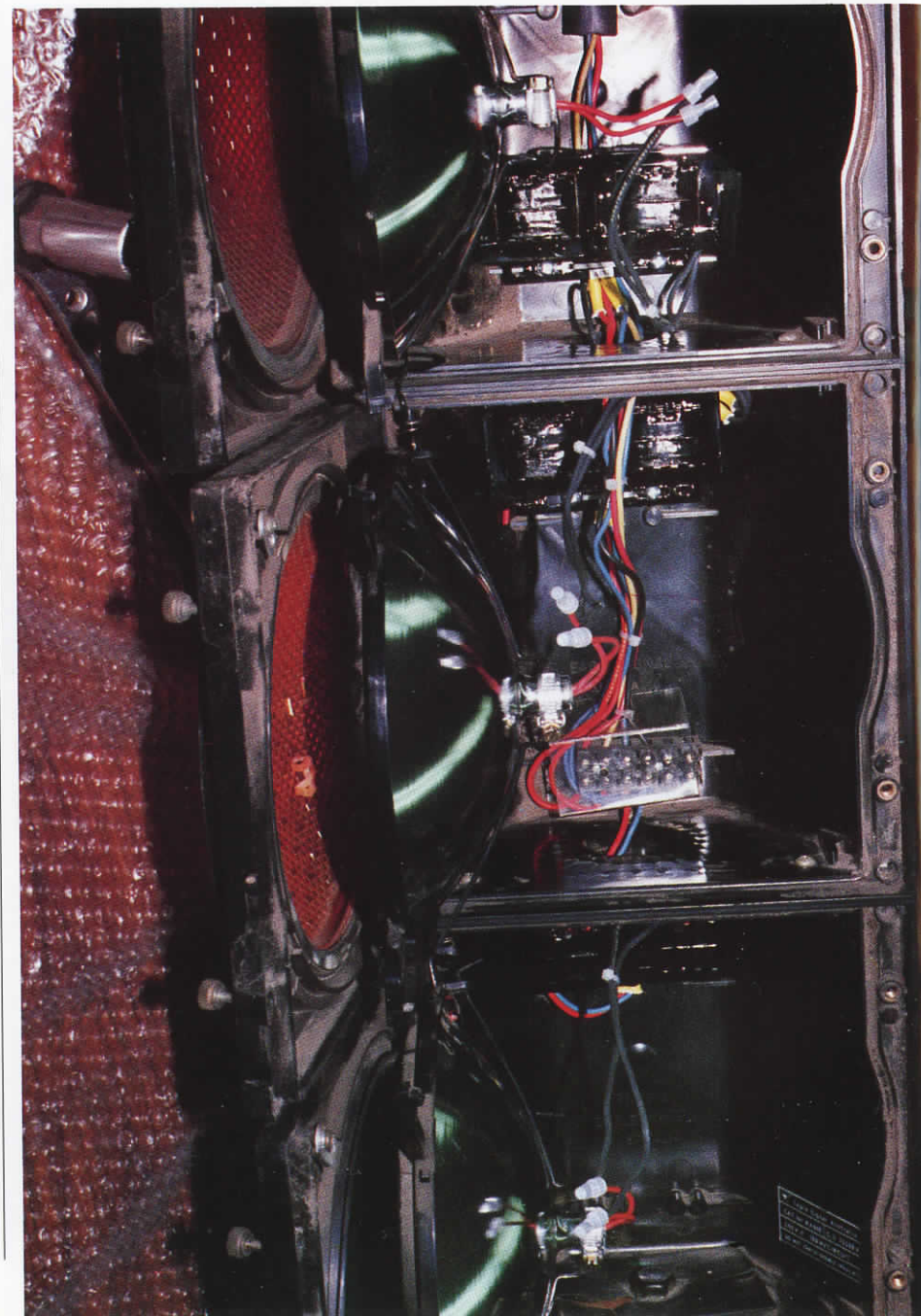
Tests in the field have shown the electricity bill is cut by about 40% and the light output is considerably higher. The failure rate of the globes is dramatically less.

Barry joined VIC ROADS in 1973. He spent a short time with Traffic Signals before going over to Sign and Linemarking for six years. He has been back in Traffic Signals Installation and Maintenance for the past ten years.

He and Katie have four young children.

Barry's consuming interest outside of work is the computer. "If my son beats me to the computer, I get out in the garden for a while."

Becoming active in the awards scheme was a bit of an eye-opener for him: "They are good. Very good. They make you strive a bit harder. I wasn't aware there were so many groups doing so many things until I got involved."

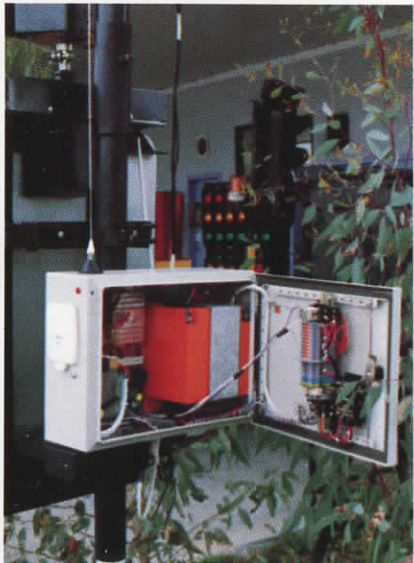


Barry Jan

TECHNICAL OFFICER, TRAFFIC SIGNALS INSTALLATION AND MAINTENANCE

A few years ago the Eastern Projects group was getting a lot of complaints about the increase in noise on the South Eastern Arterial, particularly at night. Additional noise barriers were used, including the innovative concept of glass reinforced concrete fences that won a Highly Commended award last year. Even so, further action was taken; it was decided to drop the speed limit at night, which would have a big impact on noise.

The need to bring power to the locations for the variable speed signs was the problem. To get 240 volt power to each sign location would have been costly and disruptive to traffic. So the aim of the exercise was directed towards powering the mechanisms with batteries charged by solar power.



Also, the pressure of a very short deadline was acute as VIC ROADS had promised nearby residents that it would take action quickly.

Barry sums up the design exercise: "We took basically a flip mechanism, similar to a variable advertising sign, and incorporated a solar power mechanism with a timer." When you put it like that, it sounds easy.

Seven weeks from the request, the signs were being installed.

The road authorities in Queensland and Tasmania are interested in the system, and, no doubt, other States will be using it before long.



Commended
Innovation



FOR THE
DEVELOPMENT
OF A VARIABLE
SPEED LIMIT SIGN
FOR THE SOUTH
EASTERN
ARTERIAL

Ken Arthur

ROADSIDE MAINTENANCE WORKER IN CHARGE, SOUTH WESTERN REGION

Commended
Innovation

FOR THE
CONCEPT AND
CONSTRUCTION
OF A MOBILE,
MOTORISED
HOLE DIGGER
FOR PLANTING
TREES

Ken made his machine out of bits and pieces. Its lineage from an old two-wheeled tractor is apparent; and the digging device comes by way of the blades from a rotary hoe.

Anybody who has been involved in large scale tree planting wouldn't have to ask Ken why he went to the trouble of building a mechanical hole digger. The desire is the easy part, but the determination and the inventiveness to make it work are to be applauded.

Casting his eye frequently at odds and ends lying around repair workshops, the means to dig holes in hard ground gradually took shape. Much trial and error and modification of discarded mechanical parts eventually led Ken to a working machine with its auger spinning and the earth flying.

His digger takes only a few seconds to loosen the soil, down to half a metre if necessary. The loose soil can then quickly be removed with a hand post hole digger or simply with a shovel, which gives a great increase in productivity. As the auger on the machine swings in an arc it considerably enlarges the area of loosened earth at the bottom of the hole, thereby assisting root growth.

This large area of loose soil also helps preclude water ponding around the roots, which significantly improves the survival chances of the trees.

Ken joined VIC ROADS seven years ago in the precast yard.

He and his wife Evonne have four children.

Ken plays hockey, but his main recreation (and it comes as no surprise in view of his invention) is in growing trees, with natives his principal interest.

Ken demonstrating his tree hole digger.



Ivan Glover ■ Roly Camm

PATROLMAN, SHEPPARTON, NORTH EASTERN REGION ■ NOW WITH THE MANSFIELD SHIRE

Commended
Innovation

FOR THE
DESIGN AND
DEVELOPMENT
OF A MACHINE
TO REPAIR THE
EDGE OF ROAD
PAVEMENTS

Traditionally, repairs to the edges of roads were done by a team of men using brooms and shovels to shape the road edge and a small kettle to provide bitumen for spreading. It is fairly heavy work and quite time-consuming – a team of five people repaired about one kilometre a day.

The new method takes only two people to repair eight to twelve kilometres in a day.

The machine is pushed along in front of a patrol truck or ute. It has adjustable blades, controlled by the operator sitting in the machine, which position the gravel on the pavement edge. A bitumen sprayer seals the edges which are then compacted by the patrol truck's rear wheels.

Back in 1982 Ivan and Roly built a prototype which was towed (not pushed as it is now) with a performance which did the job but wasn't totally acceptable.

In due course the Manager of Plant Branch heard of the possibilities of the idea and instigated further development.

The marked increase in productivity has an important effect on road safety in that by comparison with the old time-consuming process, the new method allows the road edges to be better kept.

Ivan came to VIC ROADS fifteen years ago, originally from a dairy farm at Poowong in Gippsland. He did a stint driving transports – he says he used to wreck the roads, now he fixes them. For the past four years he has been in charge of the Shepparton Patrol.

He has been active in the Army Reserve for the past twelve years. He collects antique newspapers, old bottles and cameras and anything else which catches his eye.

He and his wife Trish have two children, thirteen-year-old Matthew, and Kylie who is ten.

Ivan supports the concept of the innovation awards, although he feels that people should be recognised not only for inventions but for other forms of high work performance.

Roly worked for the road authority for 22 years and has now moved on to the Mansfield Shire. In between, he spent time gold prospecting and for a while was a professional gold dredger. He does a bit of fishing but most of his time is taken up by his bush block.

His original idea to build some sort of machine to do away with the time and effort edging the roads led to a good concept, he says, but the original machine was rough.

"When the workshop blokes had a look at it, I won't tell what they said about it. But it worked.

"Plenty of joint effort has gone into the project over its history."

Roly sees the value in the current awards scheme. "We should have had this machine a

long time ago. I've seen some pretty good things come up in the past but they were just laughed at – the awards seem to have brought a new open attitude and incentive."

Ivan Glover with the road edging machine.



Leigh Smith

FITTER, BALLARAT SERVICE CENTRE

FOR THE
DEVELOPMENT
OF A DEVICE TO
CHANGE BROOM
BRISTLES ON
ROTARY ROAD
BROOMS

Machines which sweep the roads have a very large revolving cylinder made of discs with thousands of bristles of wire which wear down and eventually have to be replaced.

Leigh well remembers the difficulties. "We had to rope one end and hang it vertically from a forklift. Two fellows would then bang away with sledgehammers to get the discs off the shaft. The brooms weigh about half-a-tonne. A couple of times we had real trouble when they broke away from the forklift."

Two men would normally take two hours to change the brooms. Now Leigh can do it on his own in less than an hour.

"I thought about it for a couple of years. I built it a hundred times in my head until one day I said to the foreman 'I think I've got it.'"

"He said 'Go to it', it was as simple as that and we soon had it working."

Leigh's device in fact is simple, like most good ideas. The broom is rolled out onto a cradle, and a small electric winch uses a cable to pull the old discs off the shaft. One end is then jacked a short distance into the air so that new broom discs can be easily slid on.

Apart from safety and the obvious aid to productivity the device gets the road sweepers back on the job with a minimum turn-around time.

Leigh came to VIC ROADS sixteen years ago as an apprentice in the heavy vehicles stream.

He and wife Leanne have a son Mitchell who is just one year old.

Leigh is a four-wheel-drive enthusiast who loves travelling around the outback: most recently it was the Canning Stock Route. He is also interested in photography.

He thinks the innovation awards are a great thing, not just the award itself but its role in generating the progressive thinking that often surrounds the whole system. "I don't know in the past whether you would get the chance to build something like this. The co-operation was great."



Jeff Dalman

ENGINEERING ASSISTANT, BRIDGE CONSTRUCTION SERVICES

Commended
Innovation

Concrete median barriers are manufactured at the VIC ROADS Precast Yard at Glen Waverley, under licence from the Australasian agent Romac Processors for their principal, Tric Block Marketing in Sweden.

Removing the sections used to take several labour-intensive stages; getting them out of the mould, allowing them to cure, then turning them over manually in a two-stage operation.

Jeff's method is simplicity itself. Holes are formed during the moulding at a key central position at each end of the section. The units are cast upside down, lifted out of the mould with a spreader beam attached to the holes and then easily rotated to their upright position ready for storage.

Jeff Dalman receiving his award from Reg Patterson.



Romac Processors have been very impressed with this handling method, to the point that they are altering their moulds to use the concept throughout Australasia.

Jeff started with VIC ROADS in 1968 working with a survey crew. In due course he became an engineering surveyor, then in 1978 he went across to Bridge Construction Services as an engineering assistant, where he looked

after three factories. He is now a Technical Services and Training Officer.

Jeff has had plenty of opportunity to see the engineering expertise within VIC ROADS.

He believes there is an enormous depth of talent throughout the organisation and that the innovation awards are bringing it to light. Many other people are worthy of them.

He and Brenda have two children still at

school and he enjoys a game of golf. Another of his pastimes is with the Knox Rostrum Club, of which he is President.

FOR THE
DEVELOPMENT OF
A NEW METHOD
OF REMOVING
CONCRETE
MEDIAN BARRIER
SECTIONS FROM
THEIR MOULDS

FOR THE
DEVELOPMENT
OF A DEVICE
TO LIFT
PIT FRAMES

Tom Karnatz

SUPERINTENDENT OF WORKS, METRO NORTH WEST REGION

Tom started with VIC ROADS 34 years ago as a junior carpenter-labourer in the Precast Bridge Depot in North East Victoria.

He says he used to make bits and pieces of bridges and ship them out to where someone else would stick them together.

Over the years Tom has spent plenty of time working with crews with lid surrounds, which are heavy concrete covers used for draining systems.

"You would pick them up in a loader bucket after a fair bit of manhandling, drive to the pit and try to slide them out of the bucket into the right position. The surrounding area was normally unfinished and rough which made the job even more difficult and dangerous." Tom well remembers the common thought that most people have before they seek an innovation to their work methods: 'There has to be a better way of doing this'.

One day as he was helping to handle a surround in a situation more difficult than usual he used some bits of metal tubing and clamps that were lying nearby. That night at home he made up a prototype using box section metal.

Following a series of tests and changes and a modification to handle the various types of pit surrounds, Tom came up with a lifting mechanism that one person can use in absolute safety. The old way may take two or three people up to two hours to fit a frame into position.

Now, handling six frames can be a single-handed job taking no more time, and with greater safety.

Tom and Shirley have two grown-up children. He loves gardening and fishing. One day soon he hopes he can get back to paddling – flat water kayaking – at which he used to successfully compete.

Two years ago he spent six months in Western Samoa on one of our overseas projects as Superintendent of Roads Training.

Tom was involved in the discussions when the innovation awards were first set up, so he naturally thinks they are a good idea, but he would like to see them broadened in various ways.

Commended
Innovation



FOR THE
CONCEPT AND
DEVELOPMENT
OF A NEW
METHOD FOR
STRENGTH
TESTING OF
CONCRETE

Barry Bromham ■ Dom Meadley

SCIENTIFIC OFFICER ■ TECHNICAL OFFICER, MATERIALS TECHNOLOGY DEPARTMENT

Commended
Innovation

The testing of concrete specimens to confirm that they are of the required strength has traditionally been done using a cap of sulphur on the end of the sample concrete cylinder. The sulphur has to be molten when it is applied, then allowed to harden, which takes about two hours.

Extensive use of precast concrete meant a great many companies were waiting for results from these samples before they could proceed with the job. For the people in the test labs other factors were a nuisance, to say the least. Back strains from handling the 27kg loads were common, fires from molten sulphur flared up frequently (Dom remembers four fires in his lab) and working with sulphur and its vapours is not pleasant. Wives didn't like their husbands bringing its aroma home with them, for one thing.

Some years ago Barry and Dom, at the Concrete Technologists' Group meetings, discussed the possibilities of a better way. Dom's transfer to Warrnambool for a year interrupted those discussions, but eventually they actively began their chase for that elusive bright idea.

It came in the form of a rubber pad fitted into a metal cap which holds the pad in position on the screeded end of the concrete cylinder. Dom and Barry were convinced they had the answer but now they had to convince others.

They 'played around' to find the best physical arrangement for the system. A great many tests over three years followed,

in the painstaking process to prove its ability to give consistent results compared with the previous approved method, before it could be accepted as an alternative testing method by Australian Standards.

In the process they have also succeeded in having a smaller test cylinder approved, which is good news for people with vulnerable backs. In fact in Western Australia one industrial award bans the use of the larger specimens.

Barry joined Materials as a scientific officer 23 years ago. He has seen a lot of changes in the way we do things. "The department has a good reputation for its high technical standards. We have a lot of innovative people who have contributed a great deal to road engineering."

He and Dom both see the value in innovation and ways to promote it, particularly if this can be done right down the line to the teams which put the projects into operation.

He hasn't had much time for his pastimes of photography and golf recently. With his wife Beverley, and Lindell, the youngest of their four daughters, Barry has recently returned from Fiji where he did a three year secondment on one of our overseas projects – the \$24 million Fiji Road Upgrading Project.

Dom went into Materials Testing Section 25 years ago as an assistant experimental officer and has worked in most of the laboratories. His wide experience has been utilised this year by Corporate Planning which seconded him for three months, and then he was off to WA assessing the systems used in

laboratories for the National Association of Testing Authorities Australia.

Dom and Marlene have two girls and a boy. Marlene is involved in Dom's interest in family histories, a field which he has contributed to with his writing of a number of books. He also gets involved in home computers, photography and stamp collecting, and he will have a bit more time now that he has retired as President of the Australasian Federation of Family History Organisations.

Below: Barry Bromham, left, and Dom Meadley display the old and the new – the old-style cylinder system on the left, the new system on the right. Top right: The new system in closer detail.



Stan Frydenberg

SENIOR ENGINEER, TRAFFIC CONTROL SERVICES

Anybody who had used the emergency phones on the freeways would be well aware of how difficult it was to get their message across.

Staff in the control room could often be heard shouting time and again the same question – the trucks and high-speed traffic drowning out the answer.

The need to overcome this problem became urgent with the looming amalgamation of the Traffic Control Centre and Emergency Services Centre, which would form the new Traffic Control and Communications Centre.

Telecom, which had designed and supplied the phones five years earlier, had been working on the problem. Their solution was new phones which would cost up to \$1000 each. With about 120 phones in service, VIC ROADS did some simple arithmetic and didn't jump at that solution.

Working in conjunction with emergency services officers and maintenance crews, Stan set about trying to find what was causing the problem and to find a way to get around it. He came up with an electronic filter circuit which Telecom approved – a tiny item just a little bigger than a match head, except it's square – which is wired into each phone. The conversion by Telecom costs about \$25.

In addition, the modification can be used on the other 290 emergency telephones at a capital cost of 50 cents a unit.

The result is a great improvement. So good in fact that, to help with similar difficulties, the idea has been passed on to other States including South Australia, New South Wales, Queensland, and Western Australia.

Stan is now looking at ways to improve the phones even further – in particular to reduce vandalism by use of a hands-free system which would take away the opportunity to tear off the handset.

Stan came to us six years ago by way of the Melbourne City Council where he had spent four years in electronics and controls related to traffic signals and traffic control and monitoring equipment.

He says his main interest outside of work is food – sampling different cuisines, but with a particular fondness for Asian ways of cooking. His other interests of squash and dancing must be a big help to burn off the extra calories.

Commended
Innovation



FOR IMPROVING
THE CLARITY
OF THE FREEWAY
EMERGENCY
TELEPHONE
SYSTEM

List of Award Nominees

TELEPHONE
NUMBERS LISTED
ARE EXTENSIONS
ONLY.
FOR PUBLIC
ENQUIRIES RING
VIC ROADS
CORPORATE
AFFAIRS ON
(03) 860 2633

NOMINEE

1. **Peter McHugh**
Geelong Service Centre, Tel: 521-586
2. **Peter McHugh**
Geelong Service Centre, Tel: 521-586
3. **Rod Carroll and Ken Sellars**
Tel: 521-548
4. **Len Grass and others**
Werribee Patrol Depot, Tel: 521-548
5. **Len Grass**
Werribee Patrol Depot, Tel: 521-548
6. **Len Grass**
Werribee Patrol Depot, Tel: 521-548
7. **Len Grass and others**
Werribee Patrol Depot, Tel: 521-548
8. **Len Grass**
Werribee Patrol Depot, Tel: 521-548
9. **Peter Armstrong**
89 High Street, Tel: 2265
10. **Mark Telford, Manager**
Warrnambool District Office, Tel: (055) 62-1255
11. **Christopher King**
Northern Region, Tel: 541-068
12. **Ken Jordon**
Signal Maintenance Section, Tel: 566-5730
L Webb and Gang, North East Region
P Byrne and Gang, Eastern Region
B Hope, Northern Region
13. **Dale Carmody**
Eastern Projects, Tel: 571-7111
14. **Jeff Dalman**
Bridge Construction, Tel: 8300
15. **Phil McFarlane**
Supply Group, Glen Waverley, Tel: 7345
16. **Max Arthur, Materials**
Mark Hughes, Broadmeadows
Bill Brown, Mulgrave Lab
Tel: 2227
17. **Ken Jordon**
Signals, Mulgrave, Tel: 566-5730

INNOVATION

- Portable emergency light and generator kit
- Additional plant lighting
- Guide post painting rack
- Frangible post stand
- Post lifter
- Guide post driver
- Guide post stand
- Corner cube dispenser
- Device for extracting failed drills from new deep-seated benchmarks
- "VIC ROADS — A Guide to Services" booklet
- Computerised time sheets for field employees and plant
- Development and use of portable traffic signals (See also No. 18)
- Box culvert handling device
- New method for removing concrete median barriers from moulds
- Open days at Glen Waverley
- Development of test method to directly measure percentage of bitumen absorbed by aggregates in an asphalt mix at the design stage
- Introduction of a scanning device to record direct wage details

18. Ken Jordon

Signals, Mulgrave, Tel: 566-5730

19. Barry Jan

Signals, Mulgrave, Tel: 566-5710

20. Barry Jan

Signals, Mulgrave, Tel: 566-5710

21. Dennis Radisich

Hume Freeway Project, Tel: 503

22. Adrian Bond

East Gippsland Region, Tel: 511-332

23. John Reeves

Bairnsdale Office, Tel: (051)52-3344

24. Brian Sampson

Bairnsdale Office, Tel: 511-338

25. Robert Morgan

Orbost Patrol, Eastern Region, Tel: 511-342

26. Griff Davis, Tom Gleeson

Jackie Ross, David Sampson
John Welsh, James Xenophontos
Blythwood Grange Syndicate
Tel: 521-583

27. Roy Drake

Derrinallum Patrol, South Western Region
Tel: 551-204

28. Don Baird

Port Campbell Patrol, South Western Region
Tel: 551-204

29. Roy Drake

Derrinallum Patrol, South Western Region
Tel: 551-204

30. Ken Arthur

Roadside Maintenance, South Western Region
Tel: 551-204

31. Jim Wells and Tony Hillman

Bridge Services Dept, Tel: 2886

32. Peter Ravenscroft and Ross Smith

Bridge Services Dept, Tel: 8319

33. Timothy Kennedy

Ensay Patrol, East Gippsland Region,
Tel: 511-354

The development of several concepts for portable traffic signals

Development of a solar powered variable speed limit sign for South Eastern Arterial

Traffic signal retrofit package

Electronic earthworks DATALINK

Timber bridge substructure replacement proposal

Reseal marker system

DBase program to provide easy access to private plant information

Water spray fittings to vibrating trench roller

Speed zone identification

Aggregate spreader attachment to tail gate of patrol tippers

Drip tray for patrol sprayer

Stand for supporting bitumen drums when pouring into sprayer

Mobile, motorised tree planting hole digger

T'-Slab design for short span bridges

Personal professional filing system

Telescopic shovel handle

34. John Hutchison, Bill Thomson, Malcolm Prior, Brian Nichols, John Patten, Colin Wright
Eastern Region, Tel: 512-610

35. Roly Camm and Ivan Glover
Shepparton Patrol, Tel: 571-856

36. Anthony Snell
Metropolitan Operations, Tel: 8167

37. Stan Frydenberg
Metropolitan Operations, Tel: 8171

38. Mike Kerr, Tony Storey and Peter Sarbin
Road Design, Tel: 2345

39. Jackie Aslett & Trieu Tran
Road Design, Tel: 2866

40. Ron Hawken
Road Design, Tel: 2435

41. Road Design Department
Tel: 2579

42. Roy Fisher, Stan Januszkiewicz, Tony Biancacci, Bridge Department
Lindsay Clay, Northern Region
Tel: 2251

43. David Jones, Ian Brown, Tel: 2443
Bruce Faull, Tel: 6013
Robert Toogood, Gordon Darke, Ivan Vlastic-Sostaric, Graham Schultz, Phillip Sayers, Cliff Hill, Ivo Battaglioni
South East Metro

44. Christopher Starr
Western Region, Tel: 555-416
Lisa Pennings, IT Division

45. Greg Chambers, South East Metro, Tel: 6080
David Jones, Road Planning

46. Dale Carmody
Eastern Projects, Tel: 52-210

47. John Ross
Frankston District Office, Tel: 785-2255

48. Broadmeadows Project Team
Tel: 52-202

Transportable lifting tripod for use on timber bridges

Pavement edge repairer

Design and implementation of an incident detection system for SEMARL

Improvements to freeway emergency telephone system

Production and presentation of services information

Enhancements to traffic noise calculations in RIDGE system

PC usage monitoring system

Shallow drop pit on steep batters

Design of low cost bridging solutions

Use of a vacuum dewatering technique to minimise the construction period for reinstatement of reinforced concrete pavements

Desk top publishing and graphics use in the production of user guide for BS System

A cost-shared street lighting management system

Template for installation of SECV high voltage cable conduits

Installation of intercom/public address system to counter areas

Development of the concept of the Western Ring Road to underpass the Hume Highway

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59. Keith Reiter
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60. Bob Carr, Jack Bailey, Dave Reynolds, Jack Davis (Metro Region),
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Tel: 8665

61. Design and Advisory Services,
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62. Frank Rapattoni,
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Pit lid and pit frame lifting devices

'Stamp and Stick' registration labels

The adoption of rubber caps and size reduction for concrete test cylinders

Rotary road broom wire bristle refill

Washer press for bridge maintenance

Vehicle console cover for control radio, compucruise and switches

Flagman's CB radio unit

Emergency sliding gate — median barrier

Productivity and safety improvements to aggregate loaders

Spray hand lance 'trainer wheels'

Asphalt resheeting program

Emergency gate for steel guard fence

Plant tow coupling modifications

Advertising signs within road reservations