

WORKSHOPS BACK IN FASHION

For a number of years, the popularity of workshops has seemed to decline. Happily they are now back in fashion! TRL have invested considerable time in modernising the Traffic Workshops, with thorough reviews of the content to keep them up to date and focused on current requirements. Accordingly, the TRANSYT workshop which used to last three days has now been condensed to two. The course questionnaires have helped us identify the areas considered to be of little use or interest, and these have been removed. We have completely revamped the visual aids and provided a PC for each delegate and this has improved the training environment. The ARCADY/PICADY workshop has also been reviewed, with a new format, improved visuals and practical exercises de-



signed to reinforce the lecture content.

Judging from comments and questionnaire returns, the changes have been successful in making our workshops even better.

Instead of holding workshops annually, we now run courses on demand, with fewer delegates. We find that this gives

greater opportunity for personal tuition. We ran four TRANSYT courses in Oct/Nov 2001, two more in February and March 2002, and two more are planned for May. The ARCADY/PICADY workshop is also proving popular, with two courses run in 2001, and two in February 2002. The two courses planned for next May are already in great demand. Over

90% of course places are taken by people who take advantage of the 10% discount available to Maintenance Contract holders.

A full list of the Traffic Workshops appears on the back page. Please contact the Software Bureau to confirm availability.

Software Bureau
softwarebureau@trl.co.uk

FIVE YEARS OF TSN

Five years ago, Traffic Software News (TSN) was introduced as one element of the support we gave as part of our maintenance contracts. Hopefully it has been an informative and readable newsletter that has kept our software users in touch with traffic software developments, informed them of 'bugs' found, and importantly, of ways of 'working around' the bugs until a fix was developed. It has also become a very useful channel for explaining difficult application issues, usually with the help of real problems we have tackled at TRL. We know from frequent comments how much these features and TSN in general are valued, and we intend to maintain this reputation. In five years, we have had just one customer supplied article, and our editorial staff are keenly awaiting the next! There must be many out there, so send them in and we thank you for your continuing support.

TSN is entering its sixth year, and much has happened in that time. No area of our lives has moved on as fast as the use of computers and the development of software. TRL has a history of software development with many of the well known

packages developed long before TSN. We have always provided support for all our products, which in the early days was free (even the products were free many years ago!). In this day and age, our current maintenance arrangement

allows us to provide a professional support service with quick response times, which we know is needed and valued. All this and the first year of support comes free with the purchase of one of our products!



Peter Phillips
[email: pPhillips@trl.co.uk](mailto:pPhillips@trl.co.uk)



See back page for the latest on BUNDLE 3 and the dates for the next Software Workshops

Current and future developments

Whilst much of TRL's software has a historic background, regular readers of TSN will appreciate that we have worked very hard to keep the products up to date and have always sought to develop them to meet the needs of today's practitioners. To continue achieving this progress we need to identify both new products and continue to improve the products we already have.

New products are hard to identify because there are many factors that will influence the desire or need for a new software package or developments to an existing one. Taking time out to consider all these factors is not easy in the busy lives we all seem to lead these days. This is one reason why we want to keep our software user-groups active as they allow you and us to spend time considering future developments. The recent TRANSYT user group, for example, identified some very useful ideas for development of that package and we are preparing a project plan to deliver as many of these as we can in the near future. But remember, whilst computers supposedly speed up our lives, developing new, high quality software takes time and effort.

In the meantime, if you have some ideas we would like to hear from you. Ask yourselves what can we do for you? What

could make your life easier? For example, think of a task that you are regularly asked to do, or something that you wish you could do, but it is just too difficult and cumbersome without suitable software. Let us know and we can consider the viability of producing something new. Even a simple idea may change the way we think about a problem and lead to a novel solution. (If only it were that simple!)

We have made other advances in recent years, particularly in the way we present and market our products with a professional sales office. The TRL Software Web site is now well established and a useful place to look for information, including solutions to common problems as well as information about all our products, including 'demo' versions. Don't forget that we now lease our software, either to try before you buy or to use on

those one-off jobs that would not support the full purchase price.

Watch out for the Software Bureau's special deals, the queue outside the gate for the post Christmas sales was the envy of many major stores!

So what of the future for TRL software? We continue to look at everything we do in our consultancy and research work for ideas for new products or upgrades. This process is resulting in work currently being undertaken on OSCADY and MAAP, new features and func-

tionality will be available to you soon.

Meanwhile, please continue to make the best use of our maintenance and do not be afraid to use it. If you do not have maintenance then consider writing to TSN or using our web site chat page. Remember your problem today was someone else's yesterday, don't re-invent the wheel, use the help line. You can also use the help line and the web site to discuss possible options for new products.

Peter Phillips

email: pPhillips@trl.co.uk

TRL Traffic Consultancy Services

- Traffic Impact Assessment
- Review TIA
- Junction/Network Modelling
- Traffic Signal Design
- MOVA Verification Service, Design and Installation

TRL Safety Consultancy Services

- Accident Prediction Models
- Route Treatment
- Safe Route to Schools
- Safety Audit
- Speed Management
- Traffic Calming
- Accident Investigation and Litigation

SCOOT Study in Huyton

TRL Traffic has recently completed a study to estimate the benefits of installing a SCOOT system in Huyton town centre. The study was carried out for Knowsley Metropolitan Borough Council. The study covered fifteen signals and pelican crossings, and as well as predicting the overall benefits over both independent VA and over fixed time TRANSYT plans, it assessed the benefits to buses of using SCOOT's bus priority system.

The original SCOOT research work produced a method for estimating the benefits of SCOOT on a link by link basis, and this was used to study queuing in the network for any potential blocking problems. A proposal to signalise an extra junction where the side road was badly affected by a bottleneck close to the stopline was investigated and found to be undesirable. The plan to install a SCOOT system was linked to a supermarket development. This development includes the construction of a small roundabout within the signalised network.



TRL were able to build the effect of the roundabout into the TRANSYT model by first running an ARCADY model and then transferring the relevant parameters into TRANSYT's give way model. Saturation flows were estimated using the RR67 equations linking saturation flows to road widths, and some data from video recordings.

Finally a cost benefit analysis was carried out with TRL estimating the financial benefits from the TRANSYT data, and costs being determined partly by TRL and partly from local data supplied by Knowsley MBC. Following the study, approval to develop the SCOOT system has been obtained and is currently being implemented.

John Peirce

email: jpeirce@trl.co.uk

Modelling opposed right-turn movements in TRANSYT – Part 2

This is the second article in a series covering the question of opposed right-turn movements at signal controlled junctions and how they can be modelled in TRANSYT. This time I will deal with situations where right-turners have a bay in which to queue when waiting to make their manoeuvre. See Figure 1.

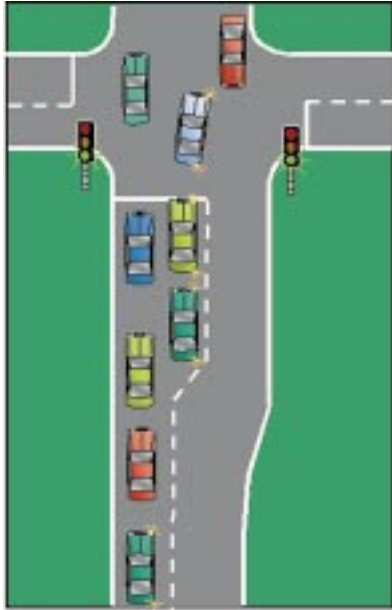


Figure 1: Typical right-turn bay

When a bay is added and it is dedicated to the right-turn movement, the extra space is used to store vehicles that want to make that manoeuvre. When the right-turners (RTs) are opposed, the extra space normally accommodates **some** vehicles out of the way of the other traffic on the same approach. The other traffic can make their manoeuvre unimpeded as a result for at least part of the cycle (ie until the right-turners queue upstream of the start of their bay and stop the other straight-on traffic).

Firstly, consider the case where there is no early cut-off or late-release stage in the cycle for the RTs. Normally, the recommended method of modelling this situation depends on whether the RT traffic blocks back at all or not; even so the suggested methods are not ideal. They are:

- If the RT traffic does not block back, use two separate links: the disadvantage is that TRANSYT models two separate queues whereas in reality you have one-and-a-bit queues. This means that the saturation flow of the straight-ahead lane has to be reduced in proportion to the number of RTs in the flow upstream of the bay. It also means that the RT 'OUT' pattern will be unrealistic in shape, but this probably does not matter too much as the capacity is modelled with reasonable accuracy.
- If the RT traffic blocks back and restricts the straight-ahead traffic, it is better to model this approach as a single link along the lines described in the first article in TSN No 20. The problem here, however, is that it is necessary to compensate for the extra capacity afforded by the fact that some straight-ahead traffic will be able to make their manoeuvre freely before the RTs block back. To do this the saturation flow needs to be increased so that it is a time-weighted average of the value before and after blocking occurs, averaged over the relevant green time.

- It might be thought that this 'step' in the saturation flow can be modelled with the flared approach parameters. It can't! **Flared approach data is ignored** whenever a link is specified as a give-way (whether or not it is also a signal controlled link).

Introducing a new method

Whilst writing this article, I tried something that I have not used before which may be of significant value:

If you split the approach with the RT bay into two short links, and then have a single feeding link to model the queue upstream of the start of the bay (see figure 2) it is possible to, at the very least, find out accurately how many vehicles are likely to use the RT bay. The principle of this method is to control the OUT pattern of link 10 by suitable start and end-lag adjustments. Firstly, make all the links belong to the same node (you can still feed flow from link 10 to links 11 and 12). Then consider the following

- Normal start lag (intergreen), l
- Number of vehicles (pcus) that can physically store on link 11
- Time for maximum queue on link 11 to discharge, t
- Journey time along link 11, j

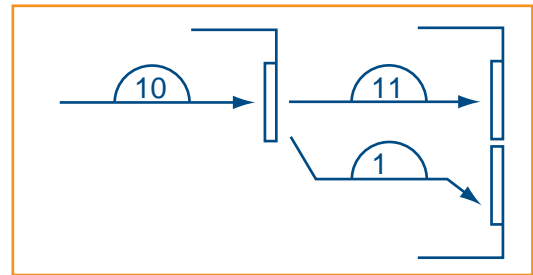


Figure 2: Split link approach

Then the start lag for link 10 = $l + t - j$.

The end lag needs to be adjusted until the queue predicted in the TRANSYT output is just enough to fill the space on link 11 and no more. Note that the end-lag value will remain the same from one run to the next for uniform-flow entry links, but may differ markedly for internal links depending on the OUT patterns from feeding links.

With all the data in place, the maximum expected queue for link 12 is shown in the output and you can determine whether blocking back will occur or not from it. If there is no blocking back, the resulting model will be an accurate representation of real-life. If there is blocking back, experimentation with the model by, for example, using the limit-queue facility and trying early-cut-off and late-release stages, will allow you to see if blocking back can be avoided. It may also be useful for modelling situation where the RT movement is catered for in a different stage.

If blocking back is unavoidable, method b) above would be the traditional method of modelling the situation. However, it might be possible to extend the new method in some way to take account of the change in capacity before and after blocking occurs. Firstly you need to work out the point in the cycle where the blocking occurs. Then you could specify link 10 as a flare with parameters that give a suitably 'high' saturation flow before blocking occurs, and a low one after. This isn't an easy method as working out the low saturation flow value is not trivial, and the point in the cycle where blocking occurs will be different every time new timings are used. Nevertheless, it may offer a useful alternative if applied very carefully.

In conclusion, right-turn bays present particular modelling problems and I have presented the traditional methods of modelling them, plus a new method which does at least give an accurate figure for the size of the RT queue. I must make a small disclaimer for the new method though: myself and a colleague have looked over the method carefully and believe it does as explained, provided it is used in the way described. However, we have not presented the method in any way as a de-facto standard - you need to justify its use to your own and to clients' satisfaction.

Next time I hope to deal with approaches with two or more lanes.

Mark Crabtree
email: mcrabtree@trl.co.uk

COURSES, SEMINARS & WORKSHOPS 2002

ARCADY/PICADY WORKSHOP

TWO 2 DAY WORKSHOPS
IN APRIL

Course Dates

16/17 & 18-19/4/02

Course Fee £500
(£450 Maintenance Holders)

TRANSYT WORKSHOP

TWO 2 DAY WORKSHOPS
IN MAY

Course Dates

14/15 & 16-17/5/02

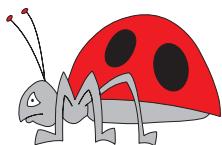
Course Fee £500
(£450 Maintenance Holders)

Places are limited
(9 delegates for
each course) so if you are
interested please register
now to avoid disappointment

All prices exclude VAT

**Future Dates
for all other
software
workshops
to be announced**

BUG BOX



**NO BUGS
TO REPORT**

Short PICADY flares

It is quite common for the first two vehicles on a minor arm to queue side by side, especially if the turning proportions are fairly well balanced.

In such cases the PICADY model would normally be set up with a short flare, length = 1 vehicle. This is as it should be, but the result may be unexpected. It might be expected that even a short double-queue would have a greater capacity than if vehicles were queueing in a single file, but PICADY sometimes predicts otherwise.

Visibility is the problem. Each vehicle at the give-way line is obstructing the visibility of the driver alongside, making people slower and more reluctant to emerge from the side road. PICADY accounts for this loss of visibility, which does indeed occur in "real life".

So don't be too surprised if your extra little bit of flaring at the give-way line makes the junction less efficient! If you can find room for, say, three or more vehicles side-by-side it is a different matter entirely.

Peter Webb
email: pwebb@trl.co.uk

CURRENT PROGRAM VERSIONS

ARCADY 5	V5.0 AC/1.1
PICADY 4	V4.1 AM/3.0
OSCADY 4	V4.02 AE/2.2
TRANSYT 11	V11.1 AH/1.4
<i>(All above have Right/Left capability)</i>	
TPM	V1.3
STM	V1.2
BUNDLE 3	V 3.0
MOVACOMM	V 2.6.0
MOVASETUP	V 4.0c
CONTRAM 8	V 8.1e
MAAP for Windows	4.12
SafeNET	1.02
PARC 2M & PARC 2P	

Who's Who in Traffic Software



Sanjay Vadgama

Sanjay has worked at TRL since 1998 and has a Degree in Electronic Systems Engineering from Kingston Polytechnic. With over 12 years of experience in the Software Engineering field, he started work at British Aerospace on aircraft software in 1989 before moving on to a software house. Since joining TRL he has been working on MAAP for Windows software and is the Product Manager, developing for both UK and international customers. Currently he is working on the localisation of MAAP so that it can be used with any language.

BUNDLE 3

- a superior alternative

The arrival of the new Traffic Engineering software 'BUNDLE 3' for Palm OS® will hasten the end for BUNDLE 2 as who will want to lug around a laptop to do on-street traffic observations when you can simply carry round a Palm OS handheld device in your pocket? Check out the latest prices, upgrade options, and complete details for this new product at www.trlsoftware.co.uk. Of course, we will still continue to supply the full BUNDLE 2 suite of programs to those who need it.

BUNDLE 2

- free software!

Two programs, originally only available as part of BUNDLE 2 (ISOLATED and COORDBEN), are now available absolutely FREE from the TRL Software Bureau web-site (without support). ISOLATED is a program which can find signal settings which minimise delay at simple junctions, quickly and easily, while COORDBEN calculates community benefits of co-ordinating adjacent sets of traffic signals with either optimised fixed-time plans, or SCOOT traffic responsive UTC system. They were considered less relevant for use on a handheld device and hence they are not part of the latest BUNDLE 3 suite of programs. Because of this, it seems only fair that users of our new BUNDLE 3 will still have access to these programs.

Jim Binning
Email: jbinning@trl.co.uk



TRL Software Bureau
Old Wokingham Road
Crowthorne Berkshire
RG45 6AU United Kingdom

Tel: +44 (0)1344 770758
Fax: +44 (0)1344 770864
E-mail: softwarebureau@trl.co.uk
www.trlsoftware.co.uk