

The Times

Journal of the Australian Association of Time Table Collectors

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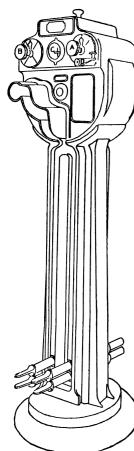
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May, 2001

Issue No. 206 (Vol. 18 No. 5)

BLOCK WORKING INSTRUCTIONS.

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ORDINARY ELECTRIC STAFF INSTRUMENT.

EXPLANATORY NOTE:-

- A. Right-hand Indicator.
- B. Left-hand Indicator.
- C. Galvanometer Needle.
- D. Bell Key.

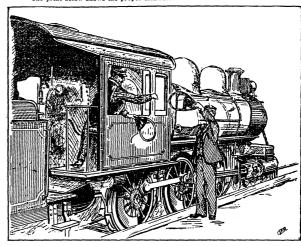
The mode of Signalling on this type of Instrument is as set out in Appendix vii., Book of Rules and Regulations.

The Right-hand Indicator works a switching apparatus which switches the current from the Bell to the Staff Instrument, and when the Indicator points to "For Staff" the Bell Instrument is cut out.

On some of these Staff Instruments the Switching Apparatus is automaSTAFF WORKING ON SINGLE LINES.

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The print below shows the proper manner:-



er must exchange the train staff or ticket on the driver's side of the

Timetable Appendices handmaidens to the Working Time Table and the Book of Illustrations from the Block Working Sections of the musiranorian Railways General Appendix and the 1935 Queensland Railways Appendix Rules.

The Times

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Appendicitis

Inflammation of the appendix? Yes... well, the New South Wales Government Railways certainly suffered from that. GEOFF LAMBERT examines the role of the Appendix to the Working Time Table in the first of a two-part article.

AILWAY jargon is full of terminology bewildering to an outsider. One such is General Appendix- a pair of words which roll off the tongues of initiates with disarming glibness or appear without amplification in railway in-house literature. How could a 7-volume set of encyclopaedia-sized books be an appendix to anything, much less to a pocket book of rules? What is a General Appendix anyway? Although railway people take for granted the existence of the General Appendix (the 'G.A.'), there would be few among them aware of the history, origin and purpose of this mysterious publication. Whereas the origin and necessity of the rule book and the Working Time Table are relatively clear, the same cannot be said of the appendix to them. Despite the ubiquity of the General Appendix, very few railways bothered to explain its existence, the only exception being the ANR, which defined it at Rule 2 in its 1983 rule book thus:

General Appendix: The book titled 'General Appendix to the Common General Operating Rules, Working Timetable and other instructions', in one or more parts, containing regulations and instructions supplementary to the General Rules, or explaining the application of General Rules to particular places or circumstances.

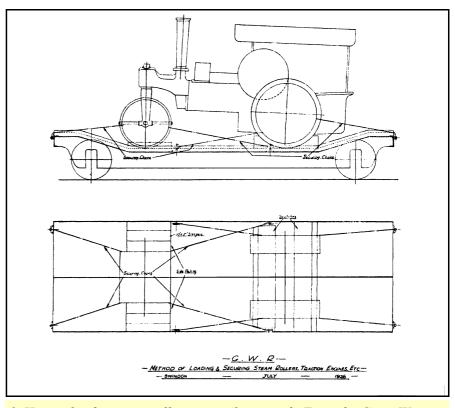
Stanley Hall, in his book *Danger Signals* describes the General Appendix as follows: It is a sort of all-purpose volume for those instructions which do not naturally fit into any of the other publications, so as a result it is quite a thick book, although vigorously weeded from time to time. The dif-

ference between the Rule Book and the General Appendix is basically that the Rule Book sets out safe procedures for running trains under varying circumstances, but without explanation: it says 'Do this' or 'Do that' and wisely leaves no room for debate or argument. The rules, as far as possible, are clear and concise; at least that is the aim, although the complexities of modern equipment sometimes makes it difficult to achieve. The General Appendix, on the other hand, can allow itself the luxury of explanation and amplification.

Stanley Hall would be intrigued to know that the British railways General Appendix (220pp at the time he wrote in 1987) was scarcely a 'thick book' when com-

pared with that of the New South Wales Railways (780pp). I for one would also take issue with the idea that *explanation and amplification* are luxuries and certainly many instances can be found where General Appendices are no more explanatory than their rule books.

Although Appendices, by name, never appeared as formal and traditional publications outside railways run on the 'British' system, the need was still felt and equivalent publications did appear. In some instances, American railways issued fairly standardised *Special Instructions*- booklets which amplified material in the Employee Time Table (ETT), which appeared to serve the same purpose. In ne sense, the modern timetable-less ETT *is* a sort of timetable appendix of the



1. How to load a steam-roller on a railway truck. From the Great Western Railway General Appendix of 1936

British kind.

The name was probably a poor choice in the first place: it established a kind of apron string between various publications which no railway was ever willing to sever. We can see the evolution from the original 'true' Appendix to the Working Time Table, through an appendix to the rule book, ramifying into General and Local Appendix, but never losing its apron string. *Appendix* it always was, until its dying days.

History

The very first *Appendix*, so styled, was the material called Rules for Working over Foreign Lines produced by the British Railway Clearing House (RCH) as its first attempt to unify railway rules in the 1860s. It was an attempt to reduce the need for drivers to carry the rule book of every road over which they worked. This was an appendix to the rule book. Many railways incorporated this production into their own rule books; eventually a more elaborate version totally supplanted the different company books.

The Appendix in its more usual form first appeared on a few English railways in the early 1870s and mention was made of it in the RCH rule book of 1876- although more in passing than in any specific way. It was introduced as the Appendix to the Working Book, and not to the rule book. On most railways, the Working Book or Working Time Table appeared monthly and each issue contained all the local instructions for the area covered by the book as well as the train times. Only the latter changed very much from month to month. An appendix enabled the railway companies to provide employees with a stable set of instructions about local conditions without the expense of continually reprinting them in each new edition of the Working Time Table. By the late 1870s, more and more companies began to see sense

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or Obstruction 18	3-199	Index follows page 732.

2. The contents pages of a 1951 printing of the Victorian Railways rule book and its 1953 General Appendix showing the concordance between their contents

in this. As with the appendix containing rules, the Appendix to the Working Book was, it was said, principally provided for the benefit of foreign drivers- the owning companies considered that such drivers needed to carry on their own engines only the local instructions of the WTT and not the section containing the owning company's train times. In October 1878 the RCH officially adopted a policy of producing Appendices and, as a corollary, suggested the production of a Weekly Notice, to update the Appendices with new information and instructions. Its existence was officially acknowledged in rule books from the 1883 editions. Thus were born two of the railways' most enduring publications.

Australian railways published Appendices and Weekly Notices beginning about 5 years after the English companies, even though the rationale given in England for their existence was practically non-existent here. The Victorian Railways rule books of both 1884 and 1885 make mention of the Appendix, although this is not proof positive that Appendices

actually existed this early. In South Australia, both these advances were much delayed- the Appendix until 1903 and the Weekly Notice until 1906.

The English Appendices of the 1880s were mainly what later came to be called Local or Sectional Appendices, and for each section of the Working Time Table, an equivalent volume of an Appendix was generally issued. It was not long before the practice mushroomed to produce Appendices containing regulations and instructions relevant to the entire system. On some railways, the Appendix never was 'sectionalised'- one volume applied to the entire system. Later, the latter type of volume came to be termed a General Appendix, a term which only makes sense if a railway has Sectional or Local Appendices as well. Plain Appendices or Sectional Appendices thus became appendices to the WTT. General Appendices became Appendices to the rule book and often to both the rule book and the WTT.

Types of Appendices

It will be gathered that several dif-

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Lickey Incline, between Blackwell and Bromsgrove.

GENERAL REGULATIONS FOR WORKING THE INCLINE. Descending.

1. The Driver of every Down train must bring his train to a stand at the top of the Incline, and must not proceed with it until he has received permission to do so from the Brakesman, and Brakesman must, before giving Drivers a signal to descend the Incline, satisfy themselves that these Regulations have been strictly complied with. Drivers of Down Goods and Mineral trains must start at such a speed as will enable the Brakesmen to put down the wagon brakes.

- No train must leave Blackwell for Bromsgrove with less brake power than shown below:—
 - All Passenger trains must be worked with the Continuous brake in accordance with the Regulation of Railways Act, 1889 (see pages 203 and 204 of this Appendix).

In the event of the Continuous brake on a Passenger train requiring to descend the Incline being out of order, the instructions in the following paragraph, respecting Fish, Meat, Fruit, &c., trains must be complied with.

Fish, Meat, Fruit, Milk, Horse, Cattle, or Perishable trains composed of Coaching stock, or Empty Coaching stock trains consisting of more than equal to seven vehicles must have two brakes; consisting of more than equal to eleven vehicles, three brakes; and whatever the number of vehicles on the train, at least one vehicle out of every four after the first seven must either be a vehicle fitted with the ordinary hand brake in which a Guard or Brakesman must travel, or a vehicle fitted with a Continuous brake in use from the engine.

In computing the number of vehicles of a Passenger or Empty Coaching stock train, the instructions on page 280 of this Appendix must be observed.

The levers of all wagon brakes must be dropped down, and one wagon brake must be pinned down for every two loaded cattle, coal, or heavy loaded goods wagons, and one for every three empty wagons or lightly loaded goods wagons.

- 3. The Brakesmen must be careful to ascertain that the brakes pinned down are in good order, and they must increase the brake power beyond what is above stated should they consider it necessary to do so, in consequence of the state of the weather, or from any other cause, and, when necessary, the Incline brakes provided for the purpose must be used, at the discretion of the Brakesmen. Brakesmen need not accompany trains down the Incline, except when the number of Guards is not sufficient to apply the prescribed number of hand brakes, or when Incline brakes are used.
- Guards must apply the ordinary hand brakes when descending the Incline, whether
 the vehicles in which they are travelling are fitted with a Continuous brake in use from
 the engine or not.
- 5. Passenger trains must not descend the Incline in less than five minutes, or at a greater speed than twenty-seven miles per hour, and Goods trains in less than twelve minutes, or at a greater speed than eleven miles per hour.

3. Although not steep by some Australian standards, the 1 in 37 Lickey Incline was regarded as dangerously so by the Midland Railway. It devoted 4 rules to it in the rule book and later 6 pages in the Appendix; this is the first..

ferent types of Appendix are possible:

(a) **Safeworking appendices** These were purely an appendix (with a small *a*) to the rule book and dealt mostly with safeworking methods. Until 1897, the most common safeworking method—Double Line Block—appeared within the body of the standard RCH rule book. In that year, when the RCH dramatically revised the standard rule book, it spent a lot of time deciding upon a set of standard appendices meant to describe

double and single line block working, with separate appendices (numbered I to XII) for each distinct method and a standard structure from company to company. For some unexplained reason, rule book instructions came to be termed *rules* and appendix instructions came to be termed *regulations* from this time.

When the Australasian Railways Commissioner's Conference drew up a proposed Australasian Railways Standard Rule Book (ASRB) in 1905, they copied all of the practices of the RCH, including the standardisation of the

safeworking appendices. Unlike the other appendices discussed below, these can never be considered as appendices to the **timetable**.

Although the 1897 RCH rule book agreed to the practice of binding the safeworking regulations with the rule book, only a few railways adopted and persisted with this practice. Other railways put these appendices into the General Appendix and others, perhaps most major railways, published them as separate stand-alone booklets. The company rule book then merely contained 12 single page appendices, each referring the reader to where the material could be found. In their stand-alone booklet form, these regulations ceased to be described as appendices at all although, according to the RCH codes of practice, they still were. The usual words on their covers from this time was something like Regulations for Train Signalling. The London and North Western Railway, however, produced this book as section B of a 23-volume set of WTT Appendices.

In Australia the practice of having bound-in appendices was closely adhered to for about 80 years on some railways, but eventually disappeared here too. The New South Wales Government Railways never did it at all- it put its safeworking regulations straight into the General Appendix, although it had a rule 306 in its rule book which directed readers to the G.A. for its safeworking regulations.

(b) General Appendix to the Book of Rules and Regulations and to the Working Timetable. These were usually separate publications and dealt with a wide range of material relevant to both the books to which they were appended. As discussed earlier, in evolutionary terms they perhaps can be described as consolidated or system-wide Local Appendices, but on some railways they contain also the safeworking material origi-

Nature of Appendices on Australian railways

CR/ANR General Appendix, Vols I (General Regulations) and II (Safe-

working Regulations) No local Instructions (?)

NSW General Appendices in 2 vols, as for CR/ANR plus Local Ap-

pendices in 5 (formerly 6) vols.

VR General Appendix, with local instructions

QR* General Appendix, with local instructionsSAR General Appendix, with local instructions

WAGR* General Appendix, with local instructions

TGR "Appendix" only- general and local instructions

* WAGR and QR initially issued plain Appendices, which became General Appendices in later years.

nally destined for the small a appendices. It seems the term General Appendix was more quickly adopted in Australia than in the U. K. I can find no U.K. book using it before about 1920, although the L&NWR was issuing a multi-part Appendix early in the century, in which Part A was described as the general portion. The Western Region of British Railways, just to be different, once had a Regional Appendix as well as a General Appendix. In Australia, the practice is diverse, but all have had General Appendices even if some of them were called only an Appendix. In at least two jurisdictions- NSW and Commonwealth, the General Appendix has been issued in two volumes, I & II. These closely correspond to (I) the usual General Appendix of other railways and (II) the safeworking appendices to the rule book. Most Australian General Appendices are hybrid creatures containing General Appendix material at the front and Local material at the rear, usually for the entire system. Between the wars, 3 of the Big Four railways in Great Britain published volumes of this type, but ones in which the *Local* material at the rear was restricted to particular areas. Each volume (the LMS had about 8) was a kind of Local Appendix, with a General Appendix glued in at the front. At the same time, it also produced purely Local and purely General Appendices.

(c) Local Appendices. These are the true timetable Appendices and usually contain only local instructions relevant to the WTT section concerned. That is, they are the descendants from what the Appendix really was in the 1870s. They rarely contain material relevant to rules, although may do so if the district with which they deal has some endemic method of safeworking. In Australia, Local Appendices were found only in New South Wales.

Content and structure of Appendices

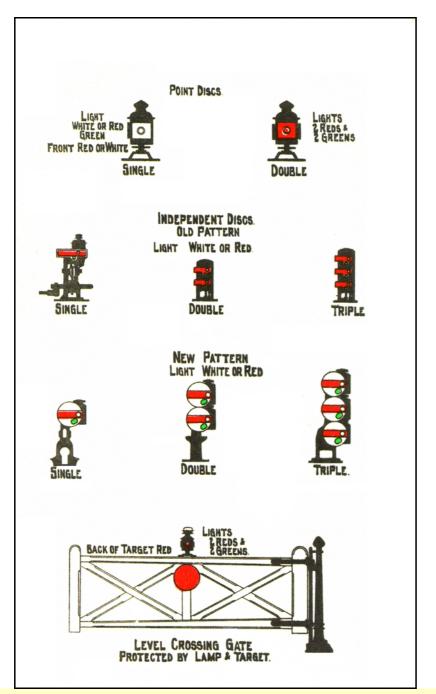
Because the General Appendix is usually appended to the rule book, the Working Timetable or more commonly both and because an appendix is meant to contain:... material supplemental, but not essential to the body of a work, one might expect them to bear some relationship to the rule book or the Working Timetable. Usually they do not- their content varies from railway to railway. Those of most railways lack any logical structural relation to the rule books they are appended to. In all the world of 'British' railways, only the General Appendices produced by the Victorian Railways and the New South Wales Government Railways share a coherent and logical structure related to the things to which they are appended (see Fig 2). This uniformity is the only

reminder of the Australian Uniform General Appendix, first proposed in the early 1900s and about which considerable mystery remains. The NSW and Victorian General Appendices consist, in the main, of a series of 'chapters' identical to the same 'chapters' of the rule book, and in which those rules are further amplified. These chapters are followed by instructions of a more general nature, and ones peculiar to each state. The General Appendices of other railways were too often pretty much a mishmash of instructions dropped into the book at seemingly random spots.

Appendices tend to contain supplementary regulations too specific or too local to place in the rule book itself. In Victorian and Tasmanian GAs, for instance, are those States' many weird and wonderful variations on the electric staff systemonly the 'pure' ES regulations deriving from the RCH rule book can be found in the Victorian Railways and Tasmanian Government Railways rule book appendices.

Local Appendices are always arranged on a topic, then a geographical or line-by-line basis. The front of these books usually contains tabular material listing track details, station facilities, safeworking methods, tunnels and level crossing, etc. These may make up at least half of the book. Some examples from around the world are given in Figs y to z. Detailed working instructions for specific places usually make up the rear of these books. Figure A contains an extract of the Midland Railways Appendix of 1905 to its ex-Midland Railway lines, showing instructions for working the Lickey Incline. In earlier days, this material appeared in the rule book itself, so important was it regarded.

The Local Appendices of any two railways nearly always show divergences of structure and content. In 1960, British Railways produced a nation-wide consistent set of about



4. Signalling diagrams from the GWR General Appendix of 1936. This was material that did not appear in the Railway Clearing House standard rule book

20 volumes, combining features of the Appendices of the four prenationalisation companies. It had continued to use, and sometimes to produce in new editions, the Appendices of the pre-Nationalisation companies in their old format.

In 1951, the NSWGR produced a unique experiment in Local Appendix design, when it issued an Appendix for the Newcastle Coal Traffic, containing a complete set

of track diagrams for the area. To my knowledge, this is the only time such information ever appeared in an Appendix and adds considerably to its value and usefulness for the historian. There was not, to my knowledge, ever any separate Working Time Table volume devoted purely to local coal traffic, so this was an *appendix* to nothing at all.

Status of Appendices

With the notable exception of Queensland, Appendices were never delegated legislation in the way that rule books used to be. In Queensland the General Appendix was the 'law of the land', but in other states it was merely an internal working document. This made re-issue and amendment a simple task in those states, but a complicated one in Queensland. All that occurred in most places was that an amendment paragraph was issued in the Weekly Notice. It was meant to be cut out and pasted into the Appendix. Occasionally, entire blocks of text were printed as supplements. In Queensland, the GA had to be modified by being laid before Parliament and published in the Government Gazette.

Generally speaking, new volumes of Appendices were issued every decade or two, with Queensland being the most prolific. In NSW no Local Appendices were issued between the mid-1930s and the mid-1960s. No Appendix containing local information was issued in Tasmania for over 35 years, although the ANR GA applied to Tasmania and a new one was issued for it in 1983.

Appendices tend to be referred to more often than rule books because they contain material of greater day-to-day utility than do rule books. Because the material in Appendices dates so quickly, they also attract more than their fair share of amendment slips. A well-used Appendix assumes the character of a much-loved Teddy Bear- ragged around the edges, falling apart at the seams and with the stuffing hanging out- but still the same old Teddy. The reference to stuffing is an apt metaphor. A properlyamended, long-standing Appendix (such as the 1930s editions of the NSWGR publications still in use in the 1960s) can end up with almost twice its original thickness worth of amendment slips. A book of this bulk with its multiple layers of finicky little bits of pasted-in paper

Missouri Pacific Railroad Company

LOUISIANA and LITTLE ROCK DIVISIONS

SPECIAL INSTRUCTIONS No. 4

EFFECTIVE JANUARY 9, 1938

Superseding Special Instructions No. 3
dated Dec. 22, 1935, and all Supplements thereto.

SUPPLEMENTARY TO TRANSPORTATION RULES

DATED SEPTEMBER 1, 1929

J. S. BASSETT Superintendent

5. They had them in the U.S.A. too, but they were Special Instructions. This is the cover of a "Sectional Appendix" for Mo-Pac's Louisiana and Little Rock Divisions. There was an Employee Time Table covering the same area.

becomes almost impossible to use, but still has pride of place on a Traffic Manager's shelf. Some railways, most notably the NSWGR, produced special editions of Appendices for central offices which were printed on one side of the paper only or contained extra blank leaves, to better enable the pastingin of amendment slips. This is at best a Band-aid measure- nothing improves readability quite so much as the issuing of a new edition.

Death of the Appendix

In Australia, only Westrail was still issuing Appendices in the late 1990s. The rule books of most Australian railways were radically restructured in the last two decades of the last century and, with that restructure, the need for Appendi-

ces waned. In several states, older editions remain as books to be consulted but they will not be reprinted.

Archival Appendices

Appendices are of great interest to the collector of railway paper and especially to signalling enthusiasts, as they often contain a wealth of matter relevant to signalling and safeworking. Most of the 'antiquarian' Appendices that have survived are in the hands of such people. The Signalling Re-

cord Society in England maintains a register of private and public holdings of U.K. and Australian Appendices. Appendices of the twentieth century are still relatively common in Australia— one may buy a 1934 NSWGR Metropolitan Local Appendix for as little as 20 cents at an ARHS Archive 'Garage Sale', even though *Berkelouws* the booksellers put a price of \$165 on one in their catalogue.

To be continued

TRAIN SIGNALS.

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(c) The Code of Head Signals is as shown on the following pages:— TRAIN SIGNALS.

Locomotive Head Lights.

Description	Head	Lights.
Description.	Electric.	Oil.
Steam Trains, Electric Loco- notives and Light Engines		
ds Pilots— Vithin Station Limits		® W

Note.—"W" signifies White Head Light, and "R" signifies Red Head Light, and rder that the Driver will have the benefit of the White Light when coming on to vehicles, White Light on Shunting Engines, whether running Funnel or Tender first, must, in case, be on the Driver's side of engine.

Electric Trains.

urban Passenger Trains, empty		ng Numbers Symbols*.	Head Lights.
or loaded, Between-	Over Right- hand Buffer.	Over Left- hand Buffer.	ricus Eights.
ders-street and Spencer-street ocal Trains)		6	

* For Disc symbols specified in these columns, see page 194. The terms "right-hand" left-hand" are to be understood as referring to the Driver's "right" and "left" d when facing the direction in which the train is to run.

6. Victorian Railways train headcodes, from the 1953 General Appendix. Most Appendices carried many pages of these diagrams

Buses to the Woronora River

JIM O'NEIL

he Sutherland Shire, to the south of the Sydney metropolitan area, has been growing in recent years, especially at its western end. The earliest timetable for service west of Sutherland Station which I have is this one, below, of the Woronora

Bus Company, acquired in 1981. It gives neither the date of issue, nor the route number (237). Service is largely confined to the east side of the Woronora River. The majority of the services ran to Prince Edward Park, on the east bank of the Woronora, turning left from River

Road partway down the hairpin bends to the bridge. There was a two hour break in the afternoons on Mondays to Fridays and service stopped about 1 p.m. on Saturdays.

There were less frequent services to the west side of the river. Services to Price's Circuit (Avenue in the timeta-

WORONORA BUS COMPANY

521 6773 FOR CHARTER SERVICES

TIMETABLE

Monday to Friday Depart P.E. Depart P.E. Depart P.E. Depart P.E. Depart Prices Depart P.E. Park BREAK IN SERVICE BREAK IN SERVICE Saturday a.m. a.m. a.m. a.m. a.m. A.m.		VARD PARK RLAND	PRINCE EDV SUTHE			AVENUE RLAND
Depart P.E. Park Depart Sutherland Depart Park Park Depart Park Park Depart Park Park Depart Park Depart Park Park Depart Park Park Depart Park Depart Park Park Park Park Park <td>Monday</td> <td>to Friday</td> <td>Satu</td> <td>rdav</td> <td>Monday</td> <td>to Friday</td>	Monday	to Friday	Satu	rdav	Monday	to Friday
Park Sutherland Park Sutherland Ave. Sutherland a.m. a.m. a.m. a.m. a.m. a.m. a.m. 6.15 6.35 8.30 8.45 via 6.45 P.E. Park — 6.50 7.15 7.55 S 7.22 7.45 9.30 9.45 9.45 9.35 7.50 8.30 10.15 Prices Ave. & p.m. p.m. p.m. 8.30 S 9.35 ★ P.E. Park 12.15 ★ 12.15 ★ 9.00 Prices Ave. 11.15 10.30 P.E. Park & Pices Ave. 9.55 P.E. Park 11.30 ★ 11.00 10.15 11.30 ★ 11.35 11.20 p.m. p.m. 5.55 via 5.30 P.E p.m. p.m. 12.15 12.35 P.E. Park BREAK IN SERVICE BREAK IN SERVICE Saturday a.m. a.m. 10.00 9.45 3.15 3.30 SS MENAI-SUTHERLAND Prices Ave. & P.E	-	•		•	•	•
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6.15 6.35 8.30 8.45 via 6.45 P.E. Park — 6.50 7.15 7.55 S 7.22 7.45 9.30 9.45 9.45 9.35 7.50 8.30 10.15 Prices Ave. & p.m. p.m. 8.30 S 9.35 ★ P.E. Park 9.00 Prices Ave. 11.15 10.30 P.E. Park & 12.15 ★ 9.55 P.E. Park 11.35 11.20 p.m. p.m. 5.55 via 5.30 P.E. p.m. p.m. 12.15 12.35 12.15 ★ P.E. Park BREAK IN SERVICE BREAK IN SERVICE Saturday 2.35 3.00 T.2.15 P.E. Park BREAK IN SERVICE BREAK IN SERVICE Saturday 4.00 4.35 Depart Menai Sutherland 5.15 5.35 Depart Menai Sutherland 5.15 5.35 a.m. p.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.
6.50 7.15 7.22 7.45 9.30 9.45 9.45 9.35 7.50 8.30 10.15 Prices Ave. & p.m. p.m. 8.30 S 9.35 ★ P.E. Park 9.00 Prices Ave. 11.15 10.30 P.E. Park & 12.15 ★ 9.55 Prices Ave. 11.30 Prices Ave. 11.00 10.15 11.30 Prices Ave. 11.35 11.20 P.M. P.M. 5.55 via 5.30 P.E p.m. p.m. 12.15 12.35 P.E. Park BREAK IN SERVICE BREAK IN SERVICE Saturday 2.35 3.00 P.E. Park BREAK IN SERVICE BREAK IN SERVICE Saturday 3.M. a.m. 10.00 9.45 3.15 3.30 SS MENAI-SUTHERLAND Prices Ave. &						
7.22 7.45 9.30 9.45 9.45 9.35 7.50 8.30 10.15 Prices Ave. & p.m. p.m. 8.30 S 9.35 ★ P.E. Park 9.00 Prices Ave. 11.15 10.30 P.E. Park & 12.15 ★ 9.55 Prices Ave. 11.30 Prices Ave. & Prices Ave. & Prices Ave. ↑ 11.35 11.20 p.m. p.m. 5.55 via 5.30 P.E p.m. p.m. 12.15 12.35 P.E. Park BREAK IN SERVICE BREAK IN SERVICE Saturday 2.35 3.00 P.E. Park BREAK IN SERVICE BREAK IN SERVICE Saturday 3.m. a.m. 10.00 9.45 3.15 3.30 SS MENAI-SUTHERLAND Prices Ave. & P.E. Park 4.45 5.05 Depart Menai Sutherland 5.15 5.35 a.m. p.m.			8.30	8.45	via 6.45 P.E.	Park —
7.50 8.30 10.15 Prices Ave. & p.m. p.m. 8.30 S 9.35 ★ P.E. Park 9.00 Prices Ave. 11.15 10.30 P.E. Park & 12.15 ★ 9.55 Prices Ave. 11.00 10.15 11.30 ★ 11.35 11.20 p.m. p.m. 5.55 via 5.30 P.E. p.m. p.m. 12.15 12.35 12.15 ★ P.E. Park BREAK IN SERVICE BREAK IN SERVICE Saturday 2.35 3.00 T. 0.00 9.45 3.15 3.30 SS MENAI-SUTHERLAND Prices Ave. & P.E. Park 4.45 5.05 Depart Menai Sutherland 5.15 5.35 a.m. p.m.	6.50	7.15			7.55 S	
8.30 S 9.35 ★ P.E. Park 9.00 Prices Ave. 11.15 10.30 P.E. Park & 12.15 ★ 9.05 Prices Ave. 11.15 10.30 P.E. Park & Prices Ave. 11.00 10.15 11.30 ★ 11.35 11.20 p.m. p.m. 5.55 via 5.30 P.E p.m. p.m. 12.15 12.35 12.15 ★ P.E. Park BREAK IN SERVICE BREAK IN SERVICE Saturday 2.35 3.00 3.00 10.00 9.45 3.15 3.30 SS MENAI-SUTHERLAND Prices Ave. & 4.00 4.35 Depart Menai Sutherland 5.15 5.35 a.m. p.m.	7.22	7.45	9.30	9.45	9.45	9.35
9.00	7.50	8.30	10.15	Prices Ave. &	p.m.	p.m.
9.55 11.00 10.15 11.30 11.35 11.20 p.m. p.m. 12.15 12.35 12.15 ★ BREAK IN SERVICE 3.00 3.15 3.30 SS MENAI-SUTHERLAND 4.00 4.35 Depart 4.45 5.05 Depart Menai Sutherland 5.15 5.35 3.m. p.m.	8.30 S	9.35 ★		P.E. Park		12.15 ★
11.00 10.15 11.30 ★ 11.35 11.20 p.m. p.m. 5.55 via 5.30 P.E. p.m. p.m. 12.15 12.35 12.15 ★ P.E. Park BREAK IN SERVICE BREAK IN SERVICE Saturday a.m. a.m. 2.35 3.00 10.00 9.45 3.15 3.30 SS MENAI-SUTHERLAND Prices Ave. & 4.00 4.35 Depart Menai Sutherland 5.15 5.35 a.m. p.m.	9.00	Prices Ave.	11.15	10.30		P.E. Park &
11.35	9.55					Prices Ave.
p.m. p.m. 12.15 12.35 12.15 ★ P.E. Park BREAK IN SERVICE BREAK IN SERVICE Saturday a.m. a.m. 10.00 9.45 3.15 3.30 SS MENAI-SUTHERLAND 4.00 4.35 Depart Depart P.E. Park 4.45 5.05 Depart Menai Sutherland 5.15 5.35 a.m. p.m.	11.00	10.15		11.30		*
12.15★ P.E. Park BREAK IN SERVICE BREAK IN SERVICE Saturday a.m. a.m. 2.35 3.00 10.00 9.45 3.15 3.30 SS MENAI-SUTHERLAND Prices Ave. & 4.00 4.35 Depart P.E. Park 4.45 5.05 Depart Menai Sutherland 5.15 5.35 a.m. p.m.	11.35	11.20	p.m.	p.m.	5.55	via 5.30 P.E.
BREAK IN SERVICE BREAK IN SERVICE 3.00 3.15 3.30 SS MENAI-SUTHERLAND 4.00 4.35 Depart 4.45 5.05 Depart Menai Sutherland 5.15 5.35 3.m. p.m.	p.m.	p.m.	12.15	12.35		
2.35 3.00 a.m. a.m. 2.35 3.30 SS MENAI-SUTHERLAND Prices Ave. & 4.00 4.35 Depart P.E. Park 4.45 5.05 Depart Menai Sutherland 5.15 5.35 a.m. p.m.		12.15 ★		P.E. Park		
2.35 3.00 a.m. 10.00 9.45 3.15 3.30 SS MENAI-SUTHERLAND Prices Ave. & 4.00 4.35 Depart P.E. Park 4.45 5.05 Depart Menai Sutherland 5.15 5.35 a.m. p.m.	BREAK IN	SERVICE	BREAK IN	SERVICE	Sati	urday
2.35 3.00 10.00 9.45 3.15 3.30 SS MENAI-SUTHERLAND Prices Ave. & 4.00 4.35 Depart P.E. Park 4.45 5.05 Depart Menai Sutherland 5.15 5.35 a.m. p.m.						-
3.15 3.30 SS MENAI-SUTHERLAND Prices Ave. & 4.00 4.35 Depart P.E. Park 4.45 5.05 Depart Menai Sutherland 5.15 5.35 a.m. p.m.	2.35	3.00				•
4.00 4.35 Depart P.E. Park 4.45 5.05 Depart Menai Sutherland 5.15 5.35 a.m. p.m.	3.15	3.30 SS	MENAI-SU	THERLAND	10.00	
4.45 5.05 Depart Menai Sutherland 5.15 5.35 a.m. p.m.	4.00	4.35		Depart		
5.15 5.35 a.m. p.m.	4.45	5.05	Depart Menai	•		1.13.1 W/K
R. Carrier	5.15	5.35	-			
				-		
And ONLY School Days		-/				

NO SERVICE SUNDAYS AND PUBLIC HOLIDAYS

EXPLANATION OF SYMBOLS USED IN THE TIMETABLE:

S denotes omnibus operates on school days only

SS denotes omnibus operates as school special

* denotes omnibus operates to Prices Ave. on Tuesdays, Thursdays and Fridays only

PADSTOW TO SUTHERLAND

	DEP							ARR
DIRECTS	PADSTOW	BIGNELL ST	JERVIS DR	BRADMAN DR	YALA RD	PRI CRT	PEP RD	SUTHERLAND
>				5.30am	5.33am		5.40am	5.46am
•				6.00am	6.03am			6.15am
>	6.20am		6.30am	6.32am	6.34am		6.45am	6.55am
▶	6.50am		7.00am	7.02am	7.05am			7.15am
>	7.30am		7.40am	7.42am	7.45am			7.55am
>				7.20am	7.23am	7.40am	7.5 <u>0</u> am	8.00am
>			•				8. 🍰 m	8.20am
>		8.40am	8.46am	8.48am	8.50am		9.00	9.00am 9.4
>	9.45am		9.51am	9.55am	9.59am	10.05am	10.15am	10.25am
>	11.05am		11.21am	11.23am	11.27am		11.33am	11.40am
>	12.15pm	12.25pm	12.31pm	12.33pm	12.36pm			12.56pm
•				1.30pm	1.33pm		1.45pm	2.00pm
>				2.30pm	2.47pm			3.00prn
•	2.25pm	2.37pm	2.43pm	2.45pm	2.50pm			
>							3.15pm	3.30pm
>	4.00pm	4.10pm	4.16pm	4.18pm	4.20pm			4.35pm
>	4.27pm	4.37pm	4.43pm	4.45pm	4.48pm			5.00pm
>	4.37pm		4.5 ≎ pm	4 5 1pm	45 4pm		5:080M	5.13pm
>	5.00pm	5.10pm	5.16pm	5.18pm .	5.21pm		•	5.33pm
>	5.25pm		5.35pm	5.37pm	5.40pm			5.50pm
>	5.43pm	5.55pm	6.01pm	6.03pm	6.06pm			6.18pm
>	6.05pm	6.17pm	6.23pm	6.25pm	DEPOT			·
>	6.25pm	·	6.41pm	6.45pm	DEPOT			

SATURDAY ILLAWONG TO SUTHERLAND

			ILLATIO	10 0011	FILEVIAN		
IRECTS	DEP AUSTIN ST	JERVIS DR	BRADMAN RD	YALA RD	PRI CRT	PEP RD	ARR
	8.00am				rni uni		SUTHERLAND
	o.uuam	8.03am	8.05am	8.08am		8.20am	8.30am
	9.00am	9.03am	9.05am	9.08am		9.20am	9.30am
* ~	10.00am	10.03an:	10.05am	10.08am	10.13am	10.20am	10.30am
>	11.00am	11.03am	11.05am	11.08am		11.20am	11.30am
>	12.00pm	12.03pm	12.05pm	12.08pm			12.30pm

Menai Bus Service, May 1986. Padstow to Sutherland.

ble) along the west bank of the river, were combined with some of the Prince Edward Park runs, starting at Price's Circuit in the mornings, but going there after P.E. Park at other times. Off-peak services ran there only three days of the week, but there was also a single Saturday service. You could not get from Price's Circuit to anywhere on a Saturday and get back by bus.

There was also a schooldays only service from Menai, not apparently diverting to either Price's Circuit or Prince Edward Park, and placed at the foot of the Saturday services to Prince Edward Park. It ran once a day in each direction.

By May 1986 (see above) the ser-

vices were primarily in the Menai area, and had been extended north across Alford's Point Bridge to Padstow Station. There was no longer an early afternoon gap in the services from Menai to Sutherland. Quite a few buses divert to PEP RD (Prince Edward Park Rd) and two to Price's Circuit. Saturday service is still mornings only with one bus to Price's Circuit (but now you can get back on the 12.30 bus from Sutherland).

In Southtrans' timetable of 8 November 1989 (p 11) there are more services, the front cover proclaiming 50% more services, and Saturday afternoon and Sunday services are provided (not shown here). Off-

peak services have been extended to Bankstown for shoppers. Southtrans had bought route 88 from Peakhurst, which ran from Bankstown through Padstow to Hurstville. Quite a few services run to Prince Edward Park Road, including two starting there, at 7.44 and 8.22. Price's Circuit has one service, starting at Bignell St in Menai at 8.37 and marked P.

By 15 March 1999, the services through Menai had become numerous enough to be put in two separate timetables, both extended from Sutherland to Miranda Westfield, and set out in vertical columns. One is for the 962/3, Padstow to Miranda (see p 12), for which the morning services alone take up a full page. The ser-

Rese s 961, 962: BANKSTOWN and PADSTOW to SUTHERLAND via Illawong, Menai and Bangor

T .	BANKS- TOWN		PADS	TOW	ALFORDS POINT			LLAWONG	·	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	МЕ	NAI	LUCAS HEIGHTS	BANGOR	WORO- NORA	SUTHE	RLAND	
Route Number	Bankstown Station	Train departs Town Hall	Train arrives Padstow	Padstow Station	Brushwood Drive	Old Illawarra Road Roundabout	Illawong Village Shops	Bignell Street	Illawong Village Shops	Moreton Road	Bradman Road & Old Illawarra Road	Hall Drive Loop	David Road	Bangor Shops	Prince Edward Park Road	Sutherland Station	Train departs Sutherland	Train arrives Town Hall
								WI	EEKDA	(<u>Ş</u>								
962	l l							///	ORNINC 	••	5.17	5.21		5.27	5.34	5.42	5.48	6.24
961						5.33	5.37		5.37	5.40	5.44		5.48	5.58		6.08	6.14	6.46
962									 6.07	6.10	5.54	5.59		6.07	6.14	6.23	6.29	7.01
961		••	••			6.03	6.07	••		6.10	6.14 6.24	 6.29	6.18	6.28 6.37	 6.44	6.38 6.53	6.44 6.59	7.16 7.31
962 961		••	••			 6.31	6.35		6.35	6.38	6.44		 6.48	6.58	0.44	7.08	7.14	7.46
962	::	 5.55	6.36	6.41		6.48			#		6.54	6.59		7.07	7.14	7.23	7.29	8.01
961	1 1					6.59	7.03	7.07	7.11	7.14	7.20			7.26		7.38	7.44	8.16
961													7.16	7.26		7.38	7.44	8.16
962				_"					7.10	7.00	7.00	7.00		~	7.44	7.53	7.59	8.31
962		6.25	7.06	7.10	••	7.15	7.19	7 220	7.19 7.36C	7.22	7.28	7.33	••	7.41	••	7.53	7.59	8.31
961		 6.25	 7.06	7.22	7.33	7.37	 7.41	7.32C	7.360	 7.44	7.50	••	••	7.56	••	8.08	8.14	 8.46
962 961	.	6.54	7.35	S7.40		S7.48			#		S7.53		 S8.00	7.30	••		0.14	6,40
961		6.54	7.35	7.55		8.03			#		8.09			8.15		 Z		
962	"														8.22	8.40	8.44	9.16
962					8.26	8.30			#		8.34	8.40		8.52	8.59	9.07	9.11	9.49
961						••	••					••	8.44B	8.55B	::			••
961							0.10	8.37	8.42 9.13	8.45	8.50	9.24	••	8.58	P	9.12	9.28	9.59
962	0.27	8.10	8.51	8.55 9.40	9.06	9.09 9.47	9.13 9.51	 9.55	9.13	9.16 10.01	9.20 10.05		 10.10	9.30 10.20	9.37	9.46 10.31	9.53 10.41	10.197 11.19
961 962	9.27	8.54 9.40	9.36 10.21	10.25	10.36	10.39	10.43		10.43	10.46	10.50	 10.54		11.00	 11.07	11.16	11.23	11.497
061	10.12	10.25	11.06	11.10		11.17	11.21	11.25	11.28	11.31	11.35		11.40	11.50		12.01	12.23	12.497
	10.07	10.20		1					TERNOC						••		, 2,20	12.101
982	11.42	11.10	11.51	11.55	12.06	12.09	12.13		12.13	12.16	12.20	12.24		12.30	12.37	12.46	12.58	1.29
961	12.27	11.55	12.36	12.40		12.47	12.51	12.55	12.58	1.01	1.05		1.10	1.20		1.31	1.58	2.30
962	1.12	12.40	1.21	1.25	1.36	1.39	1.43		1.43	1.46	1.50	1.54		2.00	2.07	2.16	2.23	2.497
961	1.57	1.25	2.06	2.10		2.17 S2.39	2.21 S2.43	2.25	2.28 S2.43	2.31 S2.46	2.35 S2.50	 S2.54	2.40	2.50		3.01	3.10	3.35T
962		1.40 2.10	2.21 2.51	S2.25 2.56	S2.36	3.03			32.43 #		3.08	3.29		 3.11	••	(••	
962 962	V2.48	2.10	2.51	V2.59	V3.10	V3.13	 V3.17		V3.17	 V3.20	V3.24	V3.28	 	V3.34		V3.44	3.48	 4.21
962	V2.46	2.10	2.51	V2.55	3.10	3.13			#		3.17			3.30Y		3.54	3.59	4.31
961		2.37	3.11	3.18	3.29	3.31	3.34	3.38	3.43	3.46	3.49		3.53	4.01		4.11	4.18	4.56
962		3.10	3.52	3.58	4.09	4.12	4.16		4.16	4.19	4.23	4.27		4.34		4.44	4.48	5.26
961		3.37	4.12	4.18		4.25	4.29	4.33	4.37	4.40	4.44			4.48		4.58	5.03	5.41
962	H4.17	3.40	4.22	4.28	4.39	4.42	4.46	 E 02	4.46	4.49	4.53	4.57		5.04	••	5.14	5.18	5.56
961		4.07	4.43	4.48	 E 00	4.55 5.12	4.59 5.16	5.03	5.07 5.16	5.10 5.19	5.14 5.23	 5.27	5.18	 5.34	••	 E 44	 F.F.O	
962 062		4.10 4.37	4.52 5.12	4.58 5.18	5.09 5.29	5.12	5.36		5.37	5.19	5.23 5.44			5.48	,	5.44 5.58	5.58 6.03	6.29 6.39
961		5.07	5.42	5.48		5.55	5.59	6.03	6.07	6.10	6.14			6.18		6.28	6.33	7.09
962		5.10	5.52	5.58	6.09	6.12	6.16		6.16	6.19	6.23	6.27R		6.34		6.44	6.57	7.29
	<u> </u>	1 5		1 2.20	3								4			لكنت		

Southtrans Routes 961-962. 8 November 1989. Bankstown to Miranda, Mon to Fri.

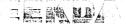
vices marked G are buses running on Route 960 Barden Ridge (and Lucas Heights) to Miranda. On this timetable they are marked E to indicate that they divert via Prince Edward Park Road. We need to inspect the separate 960 timetable (p 12) to find the times from the original terminus of the 237. But Price's Circuit seems to have vanished altogether. The yellow heading WEEKDAYS on the 960 timetable is not reproduced in

the photocopy, it is in the same style as the barely visible orange one in the 962/3 timetable. Recent Southtrans timetables have been colour coded.

There are now short runs from the Bankstown end of the 962/3, as well as the Sutherland end. Note the departures at 9.45, 10.45 and 11.45, all terminating somewhere in Menai. There are also short runs which do not connect with the rail-

way at either end: 8.28 from Bradman Rd and 8.25 and 9.06 from Alford's Point Loop. The growth of the area has been phenomenal and Lucas Heights, where the nuclear reactor was once sited well out in the country, has now become part of built-up suburbia, to the dismay of its new neighbours.

10 MIRANDA



PADSTOW - ILLAWONG - MENAI - SUTHERLAND - MIRANDA POUTE 962: MOUTE 963: PADSTOW - MENAI - SUTHERLAND - MIRANDA (Not via Illawong)

Showing Route Number	963 am H	963 am H	960 am	963 am	960 am	962 am H	960 a m	962 am H	962 am	960 am	962 a m	962 am HL	960 am	962 a m	960 am	962 a m	963 a m S	963 am S	962 am S
PANKSTOWN Station 19	St								6.38X					7.03X		7.45X			
PADSTOW City Train Arrives								6.25	6.55					7.17		7.47			8.01
PADSTOW Station								6.43	7.01					7.26		7.58			8.08
ALFORDS POINT Loop														7.36				8.25	
Old Illawarra Rd Roundabout						6.22		6.50	7.09					7.40		8.06		8.30	8.24
ILLAWONG Shops						6.26		6.54	7.13					7.44		8.10		**	8.29
Bianell St						P6.21		P6.49	P7.03			7.19							P8.20
ILI.AWONG Shops	l					6.26		6.54	7.13			7.25		7.44		8.10		**	8.29
Monai High School						6.30		6.58	7.18			7.30		7.49		8.15		**	8.34
Bradman Rd & Old Illawarra Rd	5.07	5.33		6.04		6.33		7.01	7.21			7.34		7.53		8.18	8.28	8.40	8.38
Hall Drive Loop	5.11	5.37		6.10		6.39		7.05				7.39					8.36	Υ	
MENAI Marketplace	M5.16	M5.42		M6.15		M6.44		M7.10	M7.24		7.30U			M7.56		M8.21	Υ		M8.41
MENAI Community Health Centre	5.17	5.43	G	6.16	G	6.45	G	7.13	7.27	G	7.38	G	G	7.59	G	8.23			8.43
BANGOR Shops	5.19	5.45	5.50	6.18	6.24	6.48	7.03	7.17	7.31	7.33	7.42	7.49	7.47	8.02	8.17	8.27			8.52
V!ORONORA Caravan Park	5.23E	5.49	5.54E		6.28E		7.07	7.21	7.35	7.37	7.46	7.53	7.51	8.06	8.21	8.31	**		8.5€
SUTHERLAND Interchange	5.33	5.54	6.06	6.27	6.42	6.57	7.12	7.26	7.41	7.43	7.52	7.59	7.57	8.13	8.27	8.38			9.03
SUTHERLAND City Train Departs	5.40	6.00	6.13	6.34	6.49	7.04	7.19	7.34	7.48	7.48	8.04	8.04	8.04	8.24	8.34	8.52			9.22
GYMEA TAFE	Ŷ				R6.54		R7.24						R8.11	**		8.45		**	9.09
1.1FRANDA Westfield					R6.58		R7.28						R8.18		R9.00	8.53		- 44	9.15

Owing Route Number		962	960	963	962	960	962	960	962	962	962	960	963	962	962	960	962	962	962
•		am	am	am	am	am	am	am	am	am	am	am	am	am	am	am	am	am	pm
		٧		AH					AL				AH				AL		
BANKSTOWN Station	0				8.34X		9.15X		9.45X	9.45X	10.15X		10.45X	10.45X					X 12.15X
FADSTOW City Train Arrives	i.	8.01			8.51		9.21	-	9.51	9.51	10.21		10.51	10.51	11.21		11.51	11.51	12.21
FADSTOW Station	įi.	8.10		-	9.00		9.30	~	9.56	10.00	10.30		10.56	11.00	11.30		11.56	12.00	12.30
ALFORDS POINT Loop	ì	8.20		9.06				-	10.06				11.06				12.06		
O'd Illawarra Rd Roundabout	1	8.24		9.10	9.07		9.37	-	10.10	10.07	10.37		11.10	11.07	11.37		12.10	12.07	12.37
ILLAWONG Shops		8.29			9.11		9.41		10.14	10.11	10.41			11.11	11.41		12.14	12.11	12.41
Bionell St	li .	P8.24			P8.58				10.18		P10.30	_				-	12.18	-	P12.30
II. LAWONG Shops		8.29			9.11	_	9.41			10.11	10.41	_		11.11	11.41	-		12.11	12.41
Menai High School	li.	8.34			9.16		9.46			10.16	10.46			11.16	11.46			12.16	12.46
Eradman Rd & Old Illawarra Rd	1	8.38		9.13	9.19		9.49			10.19	10.49		11.13	11.19	11.49			12.19	12.49
Hall Drive Loop		8.42		9.17									11.17						
LIENAI Marketplace	1	M8.47	8.53	9.22	9.22	9.29	9.52	9.48	**	10.22	10.52	10.48	11.22	11.22	11.52	11.48		12.22	12.52
1.1ENAI Community Health Centre		8.49	G		9.24	G	9.54	G		10.24	10.54	G		11.24	11.54	G		12.24	12.54
BANGOR Shops		8.52	8.58		9.27	9.33	9.57	9.52		10.27	10.57	10.52		11.27	11.57	11.52		12.27	12.57
WORONORA Caravan Park		8.56	9.02		9.31	9.37	10.01	9.56E		10.31	11.01	10.56E		11.31	12.01	11.56E		12.31	1.01
SUTHERLAND Interchange	1	9.03	9.08		9.36	9.42	10.06	10.08		10.36	11.06	11.08		11.36	12.06	12.08		12.36	
SUTHERLAND City Train Departs	1	9.22	9.22		9.52	9.52	10.22	10.22		10.52	11.22	11.22		11.52	12.22	12.22		12.52	1.22
G-/MEA TAFE	i	9.09	R9.28		9.41		10.11	R10.28		10.41	11.11	R11.28		11.41	12.11			12.41	1.11
USRANDA Westfield	,	9.15	R9.34		9.47		10.17	R10.34		10.47	11.17	R11.34		11.47	12.17	R12.34		12.47	1.17

EXPLANATIONS

Journey operates via Alfords Point
Journey arrives at Sutherland east side (Flora St).
Journey diverts via Prince Edward Park Rd.
Journey divers not operate via Allison Cres. Join bus at Menai Park
overbridge in Menai Rd.

Journey operates via Hall Drive Loop. Journey operates via Bignell St. Join bus in Allison Cres outside of Menai Marketplace. Bus does not pick up at Shopping Centre Bus Bay.

Southrans Routes 962-963. 15 March 1999. Bankstown to Miranda, Mon to Fri.



ROTITE 960: BARDEN RIDGE - SUTHERLAND - MIRANDA

Showing Route Number	963	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960
	am	am	am	am	am	am	am	am	am	am	am	am V	am	am	am	am	am	, am
BARDEN RIDGE David Bd mr		5.37	6.11		6.48	S	7.18		7.31	S	8.00	8.00		8.40	9.17	9.36	10.36	11.36
LUCAS HEIGHTS School		5.42	6.16		6.53		7.23		7.36	-	8.05	8.05		8.45	9.22	9.41	10.41	
Bishep Rd & Carter Rd		5.45	6.19		6.57		7.27		7.40		8.09	8.09		8.49	9.25	9.44		
MENAI Marketplace			0.10	•								0.00		8.53	9.29	9.48		
Menai Park Overbridge		5.48	6.22		7.00		7.30		7.44		 8.14	8.14		8.55	9.31	9.50		
BANGOR Shops	5.19	5.50	6.24	 В	7.02	C	7.33	 D	7.47		8.17	8.17		8.58	9.33	9.52		
WOR NORA Caravan Park	5.23	5.54	6.28	6.57	7.07	7.11	7.37	7.30	7.51	8.19	8.21	8.21		9.02	9.37	9.56		
Prince Edward Park Rd	5.26	5.57	6.32	7.02	7.07	7.16		7.35		8.22	0.2.		R8.56	0.02	0.01	9.59	10.59	11.59
SUTHERLAND Interchange Arr.	5.33	6.06	6.42	7.12	7 12	7.27	7.43	7.47	7.57	A8.40	8.27	8.34	9.06	9.08	9.42	10.08		12.08
SUTHERLAND City Train Dep.	5.40	6.13	6.49	7.17	7.17	7.34	7.50	7.54	8.04	8.52	8.34	8.42	9.22	9.22	9.52	10.22		
SUTHERLAND City Train Arr.			6.34		7.04				7.49	0.02	8.21	8.31	0.22	9.04	0.02	10.01	11.01	12.0
SUTHERLAND Interchange Dep.			6.46		7.16				8.00	•				9.12		10.12		
SUTHERLAND Flora St											0.00=	0.00						12.12
Thomas Holt Village											8.41	8.41	••	9.18		10.18	11.18	
Bath Rd & Waratah Rd	; "		6.51		7.21				8.07		Н	Н		9.24			11.24	
GYMEA Station (North St)			6.54		7.24				8.11		н	н		9.28		10.28		12.28
MID C IDA Westfield			6.58		7.28				8.18		9.00	9.00		9.34			11.34	

Shoming Route Number	960 pm	960 pm	960 pm	960 pm	960 pm	960 pm	960 pm	960 pm	960 pm	960 pm	960 pm	960 pm	960 pm	960 pm
BAPT EN RIDGE David Rd	т 12.36	1.36		2.34		3.53	4.17	4.54		5.22	5.52		7.00	
LUC/ 3 HEIGHTS School	12.41	1.41		2.43		3.58	4.22	4.59		5.27	5.57		7.05	
Bishino Rd & Carter Rd	12.44	1.44		2.46		4.01	4.25	5.01		5.29	5.59		7.07	
MEN/ Marketplace	12.48	1.48				4.05	4.28	5.04		5.32	6.02		X7.14	
Menai Park Overbridge	12.50	1.50		2.49		4.07	4.30	5.06		5.34	6.04			
BANGOR Shops	12.52	1.52		2.51		4.09	4.32	5.08		5.36	6.06		7.17	
WORONORA Caravan Park	12.56	1.56		2.55		4.13	4.36	5.12		5.40	6.10		7.21	
Prince Edward Park Rd	12.59	1.59	2.48						5.29					
SUTHERLAND Interchange Arr.	1.08	2.08	2.57	3.00		4.18	4.41	5.17	5.38	5.45	6.15		7.25	
SUTHERLAND City Train Dep.	12.59 1.08 1.22 1.01 1.09	2.22	3.22	3.22		4.31	4.46	5.33	5.44	5.59	6.22		7.52	
SUTHERLAND City Train Arr.	1.01	2.01			4.01		4.41	5.15	5.46			6.23	7.24	8.24
SUTHERLAND Interchange Dep.	1.09	2.09			4.07		4.45	5.21	5.50			6.27	7.28	8.30
SUTHERLAND Flora St	1.12	2.12												
Thomas Holt Village	1.18	2.18			4.13				5.55					
Bath Pd & Waratah Rd	1.24	2.24			4.18		4.51	5.27	6.00			6.33	7.34	8.36
GYMEA Station (North St)	1.28	2.28			4.22		4.57	5.31				6.37	7.38	8.40
MIR/ 11DA Westfield	1.34	2.34			4.28		5.03	5.37				6.43	7.44	8.46

Oalthood Street Services
Buse depart Oakwood Street,

depart Oakwood Street, Sutherland on weekdays at 9.04am, 10.04am and 1.04pm, operating to Sutherland Interchange and Westfield Miranda.

Southrans Route 960. 15 March 1999 Barden Ridge to Miranda, Mon to Fri.



Go Great Western!

JOHN WILLIAMS writes, concerning material in the recent articles, on the GWR's Service Time Tables.

Letter

Dear Albert

May I make a few observations on Geoff Lambert's article Go Great Western! (2) in The Times, No. 204

I've not seen pictorial evidence that steam railmotors worked the Stourbridge Town line (page 15), possibly because of the steep gradients of 1 in 67. From 1915 they were progressively rebuilt as Auto Trailers (removing the engine room), as from that year the line closed until 1919 as a War Time measure, so photographs, if they did, would be rare. Steam Auto trains took over upon reopening of the line, until the end of the 1950s, when ex-GWR diesel rail-cars were first used in 1956. Worcester shed, 23 miles away, had about 8 of these, the largest allocation, I believe.

Page 13: Eardsley should be

Eardisley and, page 12 Llanntidod Wells should presumably be Llandridodd Wells. Moat Lane always had Junction suffixed, and Sully was a station miles away in South Wales, on the TVR's Cardiff to Cadoxton line, not far from the seaside. [The train mentioned was, in fact, a sea-side service that ran in summer— Ed]

Trains, Timetables and Tribulations

VICTOR ISAACS offers words of consolation to Mark Girdler and his timetable experiences in France

I sympathise with Mark Girdler's plight of trying to decipher French railway timetables which he described in the March Times ("Trains, Timetables and Tribulations" p.3).

French railway timetables have been notorious for years, nay dec-

ades, as complicated - often unnecessarily so. They continually confuse hordes of travellers, and sometimes the operators as well. The SNCF is thus Exhibit A in the guilty catalogue of running an organisation to suit the convenience of the operator rather than

the customers. It is sad that a railway which is so technically excellent is so neglectful of elementary customer relations. It is an engineers' led railway.

Automatic timetable change notification

MARTIN WALLS has managed to convince the powers that be that they should provide you with automatic notification of State Transit's timetable changes.



Letter

Dear Fellow Transport Enthusiasts,

I am pleased to announce that a suggestion I made through State Transit's Employee Hotline will be adopted, after a few attempts.

It simply involves customers registering their email address with 131500.com.au (NSW transport info line) to receive automatic email notification of any timetable changes to services they have nominated.

Initially this was dismissed as not

possible due "privacy and probity" concerns, but the person in charge of the websites for State Transit saw the suggestion and is going to have the 131500.com.au site modified accordingly.

Unfortunately the site is down, so I don't know if it's operational yet, but please let your friends know this facility has been promised.



Notes for LNER passengers

Letter Does size matter? ANDREW McLean writes with comment on the power of locomotives, the speeds of trains and the management and timetabling policies in Victoria and the United Kingdom.

otes for LNER Passengers (The Times Oct 2000) gives a fascinating insight into the re-

Table 1 shows the running times for the principal expresses from London on weekdays for September 1938:

lationship between loco. perform-

ance and the timetable.

Just before this particular LNER timetable was produced, Victoria introduced its most famous express, the Spirit of Progress. Table 2 compares the original Spirit running times, not with contemporary expresses (there weren't any) but with subsequent expresses up to the present day (There is an element of cheating here- I've deducted the Locksley cross (for the up S.O.P) for the broad gauge Daylight, and the Benalla and Wangaratta stops for the XPT, and I've also had to estimate the broad gauge passing times for standard gauge services. The half minutes for the SOP are genuine- the XPT halves are mine!)

I suggest that we can learn something from these two tables - that two conditions have to be met for trains to run anywhere near as fast as they might. First, that the locos rostered onto trains have to be powerful enough and, second, there must be enough management willpower.

If we look at LNER services, it is clear that there are three levels of performance and, surprisingly perhaps, an express as famous as Flying Scotsman is only second rank. Since, all of the expresses in Table 1 would have been hauled by A3 (e.g. 4472) or A4 (Mallard) types

(both 4-6-2s), it seems from this distance that if the LNER had had much more powerful locos, the larger expresses and the overnight trains could have been much faster (Gresley apparently thought so too, because he proposed a 4-8-2, but he died suddenly in 1941).

Jumping back to Victoria, one can see that the steam Sprit was very slow, with only 91 km/h required on virtually level track from Seymour to Wodonga. Presumably this was the best a coalfired S could do on the normal load of ten vehicles, as the WTT states that the load "may be increased to 11 vehicles when traffic requirements warrant, but the existing schedules may not be maintained with this load" (One may compare the steam S hauling its tender and 10 axle-generating cars with the diesel S on 14 easyrolling Aurora cars. It is also interesting to note that when the steam Ss were displaced by the Bs, running times remained unchanged, despite the claims of steam buffs that the Bs were less powerful).

Looking next at the broad and standard gauge Daylights, the broad is 9 minutes slower for (to me, anyway) no reason, and even the standard gauge Daylight, the fastest pre-XPT train, managed no better than 103 km/h on the flat

The XPT is significantly for two reasons: it is always doubleheaded, and thus has enough power, but even more importantly, it is the only the train in Table 2 that this is expected to cruise at is maximum allowable speed- in this case, 130 km/h.

The XPT averages 90% of its limit through the hills to Seymour, and 95% on the flat to Wodonga. Why couldn't pre-XPT trains, both steam and diesel, do the same? The simple answer is that they could have, if only management had wanted them to.

The steam S, and the LNER locos suffered from being hand fired, as the power output of the loco was effectively determined by the stamina of the fireman. One useful possibility would have been a stokerfired 4-8-4, but not as big as H220, and able to run at 70 mph on Victorian track. But an even better option would have been a high speed passenger Garratt, which could easily have been about twice as powerful as an S or A4, while lighter on the track as well. Something with the same power as H220 (equal to about 2½ XPs) hauling 10 cars in 1937 could have averaged 90% of 70 mph Broadmeadows -Seymour (48½ minutes) and 95% Seymour - Wodonga (113½ minutes) for a Melbourne - Albury timing 37 minutes faster, or 3 hours 13 minutes, which makes an interesting comparison with the best (up) ICD timing of 3:32 and today's best (up) XPT timing of 3:03

One can only wonder:

(a) why such locos weren't built. The VR made a bad error in building H220, which had the power for fast passenger service, but was too heavy. This was compounded by building 70 Rs, which were just right for short expresses on mail lines, but not much use for anything else.

(b) how such locos might have affected dieselisation- they would have been roughly equal to double-headed Rs or Ss on passenger-sized trains, and completely outper-

formed all first generation diesels and,

(c) what effect such locos would have had on timetabling. Might the combination of high power and low axle load encouraged yesterday's timetable planners in exactly the same way that today's Sprinters and XPTs have? Could we, for example, had had Adelaide and Sydney Daylights over 60 years ago?

Table 1

	Km	FS	QoS	Cor	YP	SJ	Ab	N Sc	
King's Cross to									
Hatfield	29	24	24	19	25	191/2	27	28	
Hitchin	23	14	13	11	13	11	15	15	
Huntingdon Nth	43	21	21	19	22	19	27	36	
Peterborough Nth	28	17	17	15	18	15	19	20	
Grantham	47	34S	31	24	31	241/2	36s	42s	(S = stop)
Newark	23	15	12	111/2	12	12	17	18	
Retford	30	18	17	15	18	15	21	21	
Doncaster	28	16	17	17	17S	141/2	19	22	
Total	251	159	152	1281/2	156	1301/2	181	194	
Average speed (km/h)									
Hatfield – Huntingdon North	113	116	132	11	132	94	92		

Table 2

		SOP 27-Sep-1937	Daylight 21Jun-58	ICD 4-May-64	Aurora 4-May-64	XPT 7-Sep-97
Broadmeadows to	km					
Heathcote Junction	37	34	30	29	36	19
Seymour	45	32	28	26	30	23
Euroa	52	35	33	30	32	241/2
Benalla	44	27	26	26	26	21
Wangaratta	39	25½	24	24	25	20
Chiltern	37	241/2	23	20	23	171/2
Wodonga	30	21	17	17	18	14
Broadmeadows – Seymour (minutes)		66	58	55	66	42
Average speed (km/h)		75	85	89	75	117
Seymour – Wodonga (minutes)		133	123	117	124	97
Average speed)km/h)		91	98	103	97	124

Graphic Insight #66 BY CHRIS BROWNBILL

his month, we spread our wings and take a global view. Thomas Cook has for many years published compiled transport timetables for Europe and for the remainder of the world. We pay tribute by looking at the November-December 2000 edition of the Thomas Cook "Overseas Timetable" and analysing the amount of coverage given to services in various countries around the world.

Our graph below illustrates the number of pages of this book dedicated to services in each particular nation. The countries are listed in the sequence in which they appear in the book itself. Nations whose entire coverage is included on one page are not included in this graph. Whilst it is tempting to use this measure as a surrogate for the quantity or intensity of rail services provided in each country, it should be remembered that whilst the heritage of Thomas Cook is rail, and that is certainly the focus of this book, bus and ferry services are covered in addition to rail. The Overseas Timetable also includes a range of summary tables of metropolitan services as well as maps and other general travel information. Further complicating the analysis is that in some countries straddling the Europe/Asia boundary, Turkey and Russia in particular, only services in the Asian part of the country are detailed - the remainder presumably appearing in the European timetable.

The USA gets more coverage than any other country, followed by India, then Canada and Japan then Australia. It appears that the amount of coverage depends not only on the number and intensity of services, but also the population and the size of the tourist market. USA, Canada and Australia would be significant tourist destinations for European and English speaking travellers, whilst other countries with large coverage such as India, Japan, Brazil, China and Russia would appear to be there because of their large population and magnitude of their rail and bus networks. From an Australian point of view it is interesting that Australia gets significantly greater coverage than countries such as Russia and China. We can conclude that the amount of coverage given to each country is therefore probably more indicative of the size of the tourism market than of the size of the transport networks in that country. This is supported by the fact that this particular edition includes a special Australia and New Zealand Feature covering sixteen additional pages not included in the above totals.

