



The Times

May 2005

A journal of transport timetable history and analysis

Departures from:
John O' Groats, Bus Stand



Service 77 JOHN O' GROATS - WICK
Monday to Saturday

Service	77	77	77	77	77	77
	14	14	14	14	14	14
John O' Groats, Bus Stand	0745	0805	0855	0955	1045	1050
Carleton	---	0813	0910	---	---	0813
Sile	---	0820	0920	---	---	---
Prescott	0755	0820	0920	0950	1035	1022
Auchtermuir	0800	0825	0925	0955	1050	1025
Ross	0805	0840	0940	1010	1055	1030
Ross, Cross Roads	0810	0850	0950	1020	1115	1040
Wick, Rail Station	0820	0900	1000	1030	1120	1050

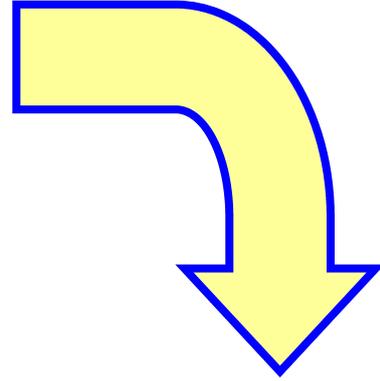
Service 80 JOHN O' GROATS - Dunnet - Castletown - THURSO
Service 280 JOHN O' GROATS - Dunnet - Castletown - Thurso - DOUNREAY
Monday to Saturday

Service	280	80	80	80	80	80
	10	10	10	10	10	10
John O' Groats, Bus Stand	0847	0758	0808	0818	0828	0738
Carleton	0831	0758	0808	0821	0831	0804
Thrs, Post Office	0758	0758	0813	0830	0838	0718
St Andrew's, Baptist Church	0804	0801	0821	0836	0842	0728
Greenock, Cross Roads	0718	0807	0827	0842	0852	0728
Sarnock	---	0812	---	0845	0855	---
Brough	---	0818	0823	0824	0844	---
Dunnet Corner	0713	0812	0827	0838	0846	0721
Castletown	0728	0828	0844	0851	0855	0738
Thurso, St George Street	0728	0842	0858	0917	0927	0738
Dounreay, Bus Station	0743	---	---	---	---	---
Thurso, Rail Station	---	0849	0859	0920	0930	---
Thurso High School	---	0852	---	---	---	---

Notes
AK - Operates via Auchtermuir Village when Ross School is open.
NS - Not Saturdays
S - School days only
1 - Saturday only

NO SUNDAY SERVICES FROM THIS STOP

www.rapsons.co.uk Highland Country
Effective from: 20th June 2003 © 2003 Bus Systems



From
John O'Groats to
Land's End....
How computers are
changing modern bus
timetables everywhere

Departures from:
LAND'S END



1 LANDS END - PENZANCE via Sennen - St Buryan - Ditt

1A LANDS END - PENZANCE via Porthcove - Trean - St Buryan - Shafted - Pord

1B LANDS END - PENZANCE via Sennen - St Buryan - Shafted - Pord

The numbers in the circles indicate approximate timings in minutes from LAND'S END.

Mondays to Saturdays											
Time	Service	Stop	Time	Service	Stop	Time	Service	Stop	Time	Service	Stop
0720	1B	Sch	1058	1A		1458	1A		1942	1B	Sum
0729	1B	SSH	1207	1		1632	1		2042	1B	Sum
0858	1A		1258	1A		1733	1A		2240	1A	Sum
1007	1		1407	1		1842	1B				

Sundays			
Time	Service	Stop	Time
1005	1A		1405
1205	1B		1605

Notes:
SSH - Schoolbuses Only
SSH - Schoolbus and School Holidays only
Sum - This journey runs during the summer: 20th May until 23rd August

traveline public transport info 0870 608 2 608

First transforming travel
Effective from: 20th June 2003 © 2003 Bus Systems Ref: 18

Inside: Modern bus network timetabling
Buffalo Rd buses
Broome by day and by night
Timetable for a 2 billion mile journey

RRP \$2.95
Incl. GST

The Times

Journal of the Australian Association of Time Table Collectors Inc. (A0043673H)

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For... freedom!

I did something today. I spoke out for an oppressed minority. I stood up for a cause. A lost cause, even. I stood up to be counted. I did not flinch. I was determined not to be ashamed of who I am. I did not care what people thought. Yes, that's right. I walked into *WH Smith* on Waterloo Station and openly, without any furtiveness, bought the new National Rail Timetable without offering a lame excuse such as "it's for the office". Sure, people buying such things without a good excuse usually get the same polite-yet-disapproving smile the sales assistant reserve for people buying porn mags (actually, maybe I'd have been less brazen about it if I'd wrapped the timetable in a copy of *Razzle*) but, well, timetables just appeal to me, and the National Rail Timetable is a good one. Sure, it doesn't have the authoritative heft of the Deutsche Bahn Allgemeine Kursbuch, a multi-volume behemoth which comes in a box with a handle, or the perky yellowness of the Nederlandse Spoorwegen Spoorboekje, but it's still 2600 wafer-thin pages of closely spaced numbers and armchair travel. And this being Britain, it comes with a booklet of amendments which have been made before it's even come into force. Oh yes, and I can even use it for planning journeys - I find it easier to use the timetable than the web as with a timetable it's possible to see the bigger picture (how many trains there are, when's the next connection if I miss it, etc) than with the web journey planner, which only presents a number of possible complete journeys and - most importantly - doesn't allow for trains being late and missed connections. Not that such things ever happen in Britain, Oh no.

From: *Not In Production*: Broadcasting on the London station of the Independent Television Authority. May 07, 2004

Contributors Geoff Lambert, Victor Isaacs, Duncan MacAuslan., Jim O'Neil, Jim Stokes, Alf Trumper, Roger Wheaton, Judy Lambert

The Times welcomes articles and letters. Send paper manuscripts or word-processor files on disk or via e-mail to the editor at the address below. Illustrations should be submitted as clean sharp photocopies on white paper or scanned GIF or TIF format images with at least 300 dpi resolution on disk or via e-mail.

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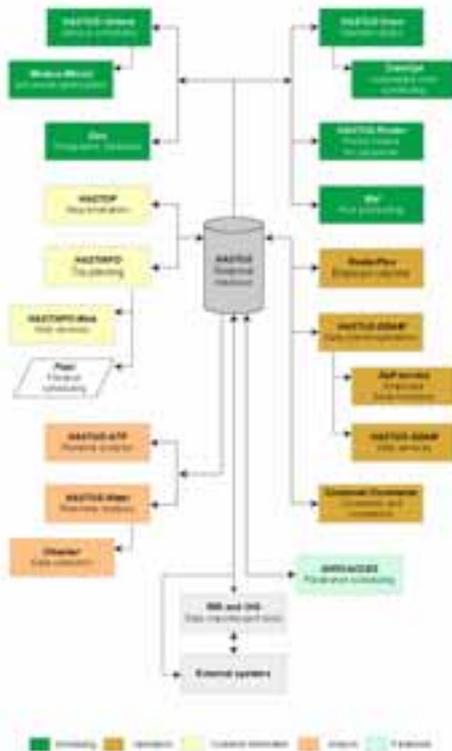
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Celebrating 25 years!

HASTUS

An integrated solution for transit scheduling and operations



Operations

> RosterPlus for employee calendar

RosterPlus is an option that allows you to manage weekly and daily changes to planned rosters. Changes in duty assignments between drivers can be entered, as can be the assignments for replacement drivers. RosterPlus is normally used in conjunction with HASTUS-DDAM, but in some cases it can be used as a stand-alone module, to entered hours worked "after-the-fact" and calculate payroll and other accruals.

> HASTUS-DDAM for daily transit operations

HASTUS-DDAM is an effective tool for the day-to-day management of transit operator assignments. In seconds, it lets the dispatcher enter absences and determine who should fill a vacant piece of work. Quickly and accurately, the system provides up-to-date information on hours worked, vacation, sick leave, reserve lists, and the like, contributing to smooth operations and eliminating sources of unnecessary conflict.

> Self-service for employee kiosk functions

Operators can access certain HASTUS-DDAM functions through a specialized "self-service" screen.

> HASTUS-DDAM for Web Services

HASTUS-DDAM Web Services provides a communication structure and a set of functions for external systems to communicate with HASTUS-DDAM via .net or XML channels.

> Customer Comments for comments and complaints

Customer Service employees can use this module to keep track of customers and register their comments and complaints. Tracking functions formalize follow-ups and allow to classify and analyze the information. Multiple lists facilitate the management of the information and provide a flexible reporting tool.

Customer information

> HASTOP for stop timetables

The HASTOP option is designed to produce schedules suitable for posting at each bus stop. Passing times at each stop are calculated based on vehicle schedules and stop-to-stop distances.

> HASTINFO for trip planning

The HASTINFO trip planning and schedule information system provides schedule and trip planning information to transit customers, through transit call centers, Web sites, and other advanced media.

> HASTINFO-Web for Web Services

The HASTINFO-Web option provides "Web Services" to access schedule and trip planning functions, allowing Web designers to integrate these features into your Web site, or with other media such as WAP, SMS, or IVR (Interactive Voice Response). The use of standard such as SOAP, XML, WSDL, and HTTP ensure interoperability of HASTINFO-Web components with your existing and future Web applications.

> Flex for flexibus scheduling

Flex is used in combination with the HASTINFO trip planning module to suggest itineraries making use of flexible routes servicing a given territory. Flex also allows customer representatives to look trips for customers making use of these routes.



Timetable departures from a stop

from stop: 206911, 206912, 206947 & 206954, Neutral Bay, Military or Watsons (on 15 Apr 2005)

click on a departure time to view the whole trip:

route: 151 - going to GVB, York near Market from 206911	4:27am 4:37am 4:47am 4:57am 5:07am
route: 164 - going to GVB, York near Market from 206911	4:54am 4:59am
route: 248 - going to Worsley Set Down Terminus, York or Margaret from 206911	5:20am
route: 178 - going to Worsley Set Down Terminus, York or Margaret from 206911	5:30am
route: 247 - going to Worsley Set Down Terminus, York or Margaret from 206911	5:50am 6:00am 6:10am 6:20am
route: 144 - going to St Leonards, Royal North Shore Hospital from 206911	6:00am 6:40am 7:00am 7:40am 7:50am 8:00am 8:10am 8:20am 8:30am 8:40am 8:50am 9:00am 9:10am 9:20am 9:30am
route: 164 - going to Worsley Set Down Terminus, York or Margaret from 206911	6:00am 6:05am
route: 143 - going to Chatswood Station Set Down Only from	6:30am 6:40am 7:00am 7:20am 7:30am 7:40am 8:10am
route: 178 - going to Worsley Set Down Terminus, York or Margaret from 206911	6:30am 7:00am
route: 257 - going to Chatswood Interchange Set Down from	6:30am 7:00am 7:20am 7:40am 8:00am 8:10am 8:20am 8:30am
route: 230 - going to Milsons Point, Alfred or Olympic from 206911	6:30am 7:00am

Scheduling (the green units at top-visible in colour in The Times web version; (2) Timetable provision (cream, left middle); *post-hoc* service analysis (orange, lower left); crew functions (lower right, brown) and; miscellaneous including paratransit, which I think means transit for the disabled (bottom boxes). The system interfaces to other computer systems (data import/export, 'Other Systems, bottom grey boxes).

At the bottom of page 4 is a 'bus graph', part of the crew scheduling package that comes with the Omnibus system.. Bus-savvy readers are invited to submit their interpretations of what it represents> Like Hastus, the Omnibus package is centred around a relational database—Omnibase—and the bus graph is part of this. Other components of the Omnibus package include Omintimes (which draws up the timetables); Omnirota (a crew rostering system); Omnistop (a system for preparing various types of 'stop timetables'); Crew Plan (an

automatic crew-scheduling and; Pocket Bus electronic assistant for inspectors, service controllers and other on-road staff. It can display timetables, departure lists and journey detail from OMNITIMES data on a handheld Pocket PC or Personal Digital Assistant.

Omnibus is a UK-based company and its product is (fairly obviously) in wide use all over the U.K.—there are 90 users there plus 2 in Hong Kong. A major use is by the First Group (they also use Hastus), with 26 networks using Omnibus.

Omnibus' particular strength seems to be in its crew scheduling and rostering functions, shown in the two sample "screen-shots" at the top of the next page. Omnibus is also strong on provision of customer information (our cover and the "stem and leaf plot at the bottom of the next page.

Both Omnibus and Hastus have extensive web-sites which advertise their wares. Omnibus' is particularly useful, with many downloadable sample timetables in PDF format. Hastus is at <http://www.giro.ca/> and Omnibus at <http://www.omnibus-systems.co.uk/> The Times editor has

Timetable departures from a stop

from stop: 209579: Manly Wharf, (Stand A) (on 10-Apr-2005)

PM

6:30am	156 - going to Mons Vale, Pittwater nr Waratah from 209579
7:35am	136 - going to Chatswood Interchange Set Down from 209579
7:40am	155 - going to McCarrs Creek Terminus from 209579
8:20am	155 - going to McCarrs Creek Terminus from 209579
8:20am	139 - going to Brookvale Bus Depot, Pittwater Rd. from 209579
8:27am	169 - going to QVB, York near Market from 209579
8:40am	136 - going to Chatswood Interchange Set Down from 209579
8:45am	155 - going to Bayview Garden Village Terminus, Annam Rd. from 209579
8:55am	136 - going to Chatswood Interchange Set Down from 209579
9:22am	156 - going to McCarrs Creek Terminus from 209579
9:25am	136 - going to Chatswood Interchange Set Down from 209579
9:27am	169 - going to QVB, York near Market from 209579
9:42am	155 - going to Bayview Garden Village Terminus, Annam Rd. from 209579
9:42am	139 - going to Warringah Mall Terminus from 209579
9:45am	136 - going to Chatswood Interchange Set Down from 209579
10:12am	156 - going to McCarrs Creek Terminus from 209579
10:15am	136 - going to Chatswood Interchange Set Down from 209579
10:27am	169 - going to QVB, York near Market from 209579
10:42am	155 - going to Bayview Garden Village Terminus, Annam Rd. from 209579
10:42am	139 - going to Warringah Mall Terminus from 209579
10:45am	136 - going to Chatswood Interchange Set Down from 209579
11:12am	156 - going to McCarrs Creek Terminus from 209579
11:15am	136 - going to Chatswood Interchange Set Down from 209579
11:27am	169 - going to QVB, York near Market from 209579
11:42am	155 - going to Bayview Garden Village Terminus, Annam Rd. from 209579
11:42am	139 - going to Warringah Mall Terminus from 209579
11:45am	136 - going to Chatswood Interchange Set Down from 209579

PM

12:07pm	169 - going to Frenchs Forest Cemetery, Hakas Ave. from 209579
12:12pm	156 - going to McCarrs Creek Terminus from 209579
12:15pm	136 - going to Chatswood Interchange Set Down from 209579
12:27pm	169 - going to QVB, York near Market from 209579
12:42pm	155 - going to Bayview Garden Village Terminus, Annam Rd. from 209579
12:42pm	139 - going to Warringah Mall Terminus from 209579
12:45pm	136 - going to Chatswood Interchange Set Down from 209579
1:12pm	156 - going to McCarrs Creek Terminus from 209579
1:15pm	136 - going to Chatswood Interchange Set Down from 209579
1:27pm	169 - going to QVB, York near Market from 209579
1:42pm	155 - going to Bayview Garden Village Terminus, Annam Rd. from 209579
1:42pm	139 - going to Warringah Mall Terminus from 209579
1:45pm	136 - going to Chatswood Interchange Set Down from 209579

Omnibus Systems

Days of Operation: **Mondays to Fridays**
 Time Out: **0643** Ref.No: **001** Commencing Date: **07/06/2001** Depot Code: **NR** Running Board No: **114**

Drivers must NOT depart before the times shown.

Service Number	Dead	7	6	6	33	33	8	8	38	38	7	7	
Stattton, Green Square	..	0729	0730	0910	0918	1104	PARK1	122	1311	1312	1404	1405	1517
St George's Square	..	0722	0738	0903	0926	1056	..	1130	1303	1319	1402	1412	1515
Nottingham Road, Bus Depot	0643	0721	0750	0855	0838	1044	..	1142	1251	1322	1359	1415	1512
Colby, Trough	↓	↑	0803	0842	0951	1031	..	↓	↑	↓	↑	↓	↑
Barston, Bus Station	↓	↑	0812	0833	↓	↑	..	↓	↑	↓	↑	↓	↑
Barston, Bus Station	↓	↑	0814	0830	↓	↑	..	↓	↑	↓	↑	↓	↑
Kingsland Road	↓	↑	0825	↓	↑	..	↓	↑	↓	↑	↓	↑	..
Oscott, New Road	↓	↑	0819	↓	↑	..	↓	↑	↓	↑	↓	↑	..
Southcot, Demesne Drive	↓	↑	0822	0824	1005	1017	..	↓	↑	↓	↑	↓	↑
Suthurst, Green Dragon	↓	0718	..	..	..	..	1150	1243	1327	1354	1420	1507	..
Booth, Fire Station	↓	↑	..	..	..	..	1153	1240	↓	..	..	..	..
Booth Hall, Western Avenue	↓	↑	..	..	..	..	1157	1236	↓	..	..	..	..
Norbury Green, Western Avenue	↓	↑	..	..	..	..	1200	1233	↓	..	..	..	..
Carswood, Mile House	↓	↑	..	..	..	..	1214	1219	↓	..	..	..	..
Hurst Cross	↓	0708	..	..	..	..	..	..	..	..	..	..	..
Turves Green, Shops	↓	↑	..	..	..	..	..	..	1337	13	..	..	..
High Hurst, Rosefield Avenue	↓	0703	..	..	..	..	..	..	..	..	..	..	..
Kilworth, City Boundary	0700	0700	..	..	..	..	..	..	..	..	..	..	..

Service Number	9	9	11	11	8	8	5	5	38	38	
Stattton, Green Square	1518	1645	1645	1758	1759	1936	1943	2048	2050	2129	21
Wellgate Shopping Centre	↓	↑	1647	1756	↓	↑	↓	↑	↓	↑	..
St George's Square	↓	↑	1807	1930	1949	2042	2056	2128	21	..	
Nottingham Road, Bus Depot	↓	↑	↓	↑	1819	1920	1957	2034	2057	2127	21
Wellgate Shopping Centre	1520	1643	↓	↑	↓	↑	↓	↑	↓	↑	..
University, Newton House	1527	1636	1654	1749	↓	↑	↓	↑	↓	↑	..
Grangefield Health Centre	↓	↑	1705	1738	↓	↑	↓	↑	↓	↑	..
York Road, Clock Tower	1530	1633	↓	↑	↓	↑	↓	↑	↓	↑	..
Langley Lane, The Farrier	↓	↑	↓	↑	↓	↑	2000	2031	↓	↑	..
Newchurch, Dukeries Road	↓	↑	↓	↑	↓	↑	2009	2022	↓	↑	..
Silsby, Barston Road	↓	↑	↓	↑	↓	↑	2013	2018	↓	↑	..
Colby, Trough	↓	↑	↓	↑	↓	↑	..	..	2101	2123	..
Barston, Bus Station	↓	↑	↓	↑	↓	↑	..	..	..	..	22
Suthurst, Green Dragon	↓	↑	↓	↑	↓	↑	1827	1914	..	..	..
Booth, Fire Station	1537	1626	↓	↑	↓	↑	1830	1911	↓	↑	..
Booth Hall, Western Avenue	1542	1622	↓	↑	↓	↑	1834	1908	..	..	..
Norbury Green, Western Avenue	1545	1618	↓	↑	↓	↑	1837	1906	..	..	..
Carswood, Mile House	1559	1604	↓	↑	↓	↑	1851	1854	↓	↑	..
Turves Green, Shops	..	..	1714	1729	..	..	..	..	2109	2115	..
Kilworth, City Boundary	..	..	1719	1724	..	..	..	..	..	..	..

Service Number	38
Nottingham Road, Bus Depot	2342
Suthurst, Green Dragon	2338
Turves Green, Shops	2330

CREW DUTY REF

From	To	Ref
0643	NotBu	11
1122	StatGr	15
1512	NR in	15
1920	NR in	15
2342	NotBu	472

downloaded them all and compiled them into two PDF files, which will be available on CD-ROM in the future through the AATTC's Distribution List service.

Has this whetted your appetite A person of greater familiarity with these systems (and others which surely exist) is invited to expand on this topic in a future issue of The Times. There are even software packages for ferry scheduling—now there's a challenge!

Omnibus Systems				Commence: 07/06/2001 Ref: 001		Depot: NR				
Days: MON,TUE,WED,THU				School Holidays						
Crew Value List										
Duty No	Sign On	Sign Off	Meal/Spilt Breaks	Unpaid Break	Actual Break	Duty S/O	Paid Time	Duty Time	Drive Time	Drv/Dty time %
401	0517	1203	0945-1030	0.45	6:46	7:36	6:46	5:17	78.08%	
402	0533	1313	1000-1045	0.45	7:40	7:40	7:40	5:35	72.83%	
403	0538	1147	0835-0920	0.45	6:09	7:36	6:09	4:39	75.61%	
404	0542	1213	1000-1045	0.45	6:31	7:36	6:31	4:54	75.19%	
405	0547	1313	0908-0947	0.38	7:26	7:26	7:26	5:03	67.84%	
406	0553	1314	0800-0845	0.45	7:21	7:36	7:21	5:16	71.66%	
407	0555	1311	0833-1022	0.49	7:16	7:36	7:16	5:27	75.00%	
408	0607	1252	..	..	6:45	7:36	6:45	5:06	76.05%
409	0611	1410	1030-1130	0.49	7:59	7:59	7:59	5:34	69.73%	
410	0613	1324	1012-1119	1.07	7:11	7:36	7:11	5:09	71.69%	
411	0615	1322	0838-0927	0.49	7:07	7:36	7:07	5:31	77.52%	
412	0628	1337	0845-0933	0.48	7:09	7:36	7:09	5:34	77.86%	
413	0633	1433	1119-1150	0.31	8:00	8:00	8:00	6:09	76.88%	
414	0640	1500	0913-0957	0.44	8:20	8:20	8:20	5:12	62.40%	
415	0641	1422	1045-1148	1.03	7:41	7:41	7:41	5:58	77.66%	
416	0643	1339	..	..	6:56	7:36	6:56	5:01	72.36%
417	0644	1437	1049-1131	0.42	7:53	7:53	7:53	5:57	75.48%	
418	0646	1344	0804-0900	0.56	6:58	7:36	6:58	4:45	68.18%	
419	0649	1444	0928-1008	0.40	7:55	7:55	7:55	5:37	70.95%	
420	0700	1451	1120-1200	0.40	7:51	7:51	7:51	6:05	77.49%	
421	0705	1506	1140-1327	1.47	8:01	8:01	8:01	4:53	60.91%	
422	0709	1452	1032-1112	0.40	7:43	7:43	7:43	5:53	76.24%	
423	0711	1511	1125-1222	0.57	8:00	8:00	8:00	6:08	76.67%	
424	0719	1505	1004-1252	0.48	7:46	7:46	7:46	5:58	76.82%	
425	0720	1454	1004-1052	0.48	7:34	7:36	7:34	5:51	77.31%	
426	0728	1555	1149-1227	0.38	8:27	8:27	8:27	5:57	70.41%	
427	0730	1533	1148-1233	0.45	8:03	8:03	8:03	6:13	76.26%	
428	0731	1536	1206-1245	0.45	8:05	8:05	8:05	6:04	75.05%	
429	0744	1137	..	..	3:53	7:36	3:53	2:58	76.39%
430	0900	1135	..	..	2:35	7:36	2:35	2:06	81.29%
431	0755	1535	1250-1322	0.32	7:40	7:40	7:40	5:27	71.09%	
432	0800	1605	..	..	8:05	8:05	8:05	5:51	72.37%
433	0815	1613	1245-1330	0.45	7:58	7:58	7:58	5:48	72.80%	
434	0834	1636	1118-1207	0.49	8:02	8:02	8:02	6:08	76.35%	
435	0840	1618	1019-1257	0.38	7:38	7:38	7:38	5:21	70.09%	
436	1033	1834	1334-1420	0.46	8:01	8:01	8:01	6:09	76.72%	
437	1044	1849	1415-1515	1.00	8:05	8:05	8:05	5:59	74.02%	
438	1047	1821	1514-1602	0.48	7:34	7:36	7:34	5:32	73.13%	
439	1052	1853	1330-1415	0.45	8:01	8:01	8:01	6:06	76.09%	
440	1105	1836	1515-1600	0.45	7:31	7:36	7:31	6:05	80.93%	
441	1112	1916	1434-1520	0.46	8:04	8:04	8:04	6:21	78.72%	
442	1117	1902	1544-1646	1.02	7:45	7:45	7:45	5:26	70.11%	
443	1118	1922	1348-1423	0.34	8:04	8:04	8:04	5:40	70.25%	
444	1142	1855	1504-1552	0.48	7:13	7:36	7:13	5:33	76.91%	
445	1152	1901	1556-1643	0.45	7:09	7:36	7:09	5:26	75.99%	
446	1233	1947	1525-1613	0.48	7:14	7:36	7:14	5:19	73.50%	
447	1252	2030	1513-1603	0.50	7:38	7:38	7:38	5:46	75.55%	
448	1255	1947	1540-1616	0.36	6:52	7:36	6:52	4:14	61.65%	
449	1303	2025	1704-1750	0.46	7:22	7:36	7:22	5:30	74.66%	
450	1305	2006	1611-1653	0.42	7:01	7:36	7:01	5:18	75.53%	

Departures from this stop

Bus Service
21
OVERGROUND

AMROTH
 Castle Square
 You are here

Monday to Friday
Daytime 8 buses per hour

05	15 45
06	15 30 45
07	00 03 07 15 22 30 37 45 52
08	00 07 15 22 30 37 45 52
09	00 07 15 22 30 37 45 52
10	00 07 15 22 30 37 45 52
11	00 07 15 22 30 37 45 52
12	00 07 15 22 30 37 45 52
13	00 07 15 22 30 37 45 52
14	00 07 15 22 30 37 45 52
15	00 07 15 22 30 37 45 52
16	00 07 15 22 30 37 45 52
17	00 07 15 22 30 37 45 52
18	00 07 15 22 30 45

Evening 4 buses per hour

19	00 15 30 45
20	00 15 30 45
21	00 15 30 45
22	00 15 30 45
23	00 15 30

Saturday
Daytime 8 buses per hour

06	00 15 30
07	00 07 15 22 30 37 45 52
08	00 07 15 22 30 37 45 52
09	00 07 15 22 30 37 45 52
10	00 07 15 22 30 37 45 52
11	00 07 15 22 30 37 45 52
12	00 07 15 22 30 37 45 52
13	00 07 15 22 30 37 45 52
14	00 07 15 22 30 37 45 52
15	00 07 15 22 30 37 45 52
16	00 07 15 22 30 37 45 52
17	00 07 15 22 30 37 45 52
18	00 15 30 45

Evening 4 buses per hour

19	00 15 30 45
20	00 15 30 45
21	00 15 30 45

Replicated station names

ROGER WHEATON, JIM STOKES and ALF TRUMPER have all written with further information, corrections and insights into the replication of station names in Australasian timetables. Yet more next month!

From Roger Wheaton

Duplicated names:

Does Victoria Square* qualify? The list shows (Mt) Victoria (Park) (St).

Does Goodwood and Goodwood Road* (both in SA) qualify?

Oaklands Adelaide, NSW

* now closed.

Foreign names in SA;

Abbeville France (Siding at 124 miles on the Gladstone line.)

Clare Ireland

Kilkenny Ireland

Virginia Ireland

Wilmington Although a British name, the town was apparently named after the place in USA.

All except Kilkenny now closed.

Manning's Place Names in South Australia is the authoritative text on the origin of place names in SA. There may be others I have missed.

Regards, Roger Wheaton

From Jim Stokes

The What's in a Name exercise (Times March 2005) should keep us all happy for years, although nobody has yet been brave enough to tackle names found in both Australia and the UK or Eire. However we may need some rules about tolerance of minor variations. For example New Town and Campbell Town have always been two words in Tasmania and in the working timetables Showgrounds was always Elwick Show Ground. Bellevue Racecourse was between Cornelian Bay and New Town.

Jerusalem (later Colebrook) is another Tasmanian name from Palestine. I doubt however whether Lower Jerusalem (later Woodlands) could be found in the Bible.

The following names occur in both Tasmania and at least one other state

or New Zealand:

Abattoir (Abattoirs in NSW, Qld, SA)

Apsley (NSW)

Ascot (Siding) (Qld)

Ashley (NSW, NZ)

Avoca (Vic, NZ)

Ayr (later Telita) (Qld)

Blythe (Blyth in SA)

Botanical Gardens (Vic)

Branxholm (Branxholme in Vic)

Breadalbane (later Relbia) (NSW)

Bridgewater (Vic, SA)

Brighton (Vic, SA)

Burnley (Vic)

Bushy Park (Macquarie Plains) (Vic, Qld)

Cambridge (NZ)

Campbell Town (Campbelltown in NSW)

Claremont (WA)

Clarendon (NSW, Qld, NZ)

Clayton (Vic)

Cleveland (Qld)

Coniston (NSW)

Deep Lead (later Williamsford) (Vic)

Dolomite (Qld)

Don (Qld)

Dundas (NSW)

Dysart (Vic)

Emu (Siding) (Vic)

Epping (NSW, Vic)

Frasers (Qld)

Gawler (later Methanga) (SA)

Glenorchy (Vic)

Griffith (NSW)

Guildford (NSW, Vic, WA)

Hamilton Road (later Hayes) (Hamilton in Qld, NSW, Vic, NZ)

Henty (NSW)

Howard (Siding) (Qld)

Ivanhoe Gates (Ivanhoe in NSW)

Kings (Qld)

Leslie (Qld)

Lilydale (Vic)

Little Hampton (Littlehampton in SA)

Mackays (Mackay in Qld)

Maitland Road (Maitland in NSW)

Mangalore (Vic)

Melton (Vic, SA)

Montrose (Qld)

National Park (NSW, SA, WA, NZ)

Nelsons Creek (Nelson Creek in NZ)

Newstead (Vic)

New Town (Newtown in NSW, Vic)

Perth (WA)

Pinnacles (Pinnacle in Qld)

Ravenswood (Vic)

Richmond Road (Richmond in Vic, Qld)

Riversdale (Vic)

Riverton (SA, NZ)

Ross (NZ)

St Leonards (NSW, SA, NZ)

St Marys (NSW)

Selma Gates (Selma in Qld)

Sheffield (NZ)

Somerset (NSW)

Stanley (Qld)

Stony Creek (later Llewellyn) (Stoney Creek in Qld)

Summit (The Summit in Qld)

Ringwood (Vic)

Waratah (NSW)

Watts Road (Watts in Qld)

William St (Qld)

Wynyard (NSW)

From Alf Trumper

A few more additions to the list.

Goodwood Qld

Inglewood Qld

Stratford Qld

Woodend Qld

Sandgate Qld/Newcastle

Clifton Qld/NSW

Bunda St Qld(Cairns)/Qld(Bundaberg)

Jewell(s) Newcastle/Melbourne

Fassifern Qld/Newcastle

Regards, Alf

Buses in Buffalo Road, Ryde

JIM O'NEIL resumes his series of Sydney's regional bus timetables, with another route feeding the Main Northern railway line

When I was exploring Sydney's private buses in the late fifties, moving outwards from my home near Chatswood, one of the groups which attracted my interest was the Hunter's Hill Bus Co., which not only operated into Chatswood and Crow's Nest, but had quite a few routes in Ryde and Hunter's Hill municipalities. One I discovered, which wasn't operated by the standard 44-seat REO/Syd Wood buses, was Route 126, which carried on its side-boards (all Hunter's Hill buses had sideboards in those days) 'Gladesville to Ryde via Buffalo Road'. I acquired my first timetable for the 126 in 1961, if I remember correctly. It was printed on one side of a sheet of orange-coloured paper. It is dated, but I can no longer recall in what year before 1961 the 3rd of March was on a Friday (1950-Ed).

When we look at the timetable (right) we can see that a single bus can cover the whole timetable. It takes a little under twenty minutes to run between the two terminals - the last run leaves Gladesville at 6.34 and arrives at Ryde at 6.52. There doesn't seem to be a break for the driver to take lunch in the middle of the day, so it seems unlikely that a single driver was on duty from 6.48 a.m. until 6.52 p.m. There was no evening service on the 126, but Saturday mornings are covered, once again requiring a single bus. Apart from the heading 'Buffalo Road' and the names of the two terminals, there is no information on how and where the bus ran. If you needed to catch it, you already knew.

My next timetable (page 9, top left and right) is dated 18th November 1966 and has been typed on a stencil, not printed professionally. There is still basically a single bus, now identified as Shift 14, but there are also several school specials which run partly on the 126 and partly in areas beyond it. How you got back from Ryde High School in the afternoon is not indicated. The regular bus starts a little later, and ends a little earlier than in the 1961 timetable. Most

notably, the off-peak times are more predictable. The bus leaves the two alternative terminals at the precise twenty minute intervals. There is still Saturday service, to be seen on the reverse side, but it no longer runs to Gladesville. Instead it runs in a loop from Top Ryde along Quarry, Aitchandar and Buffalo Roads, back to Top Ryde. Ken Butt has replaced C. Paull as manager, and the timetable has also provided a list of the streets the bus follows. This was the first I learnt that the 126 actually left Buffalo Road and diverted to the north at the Ryde end of the run.

This may be clearer if you look at the map on page 10, which I have copied from a Collin's Sydney Street Directory, also undated but published a little later. The 126 starts at Wharf Road in Gladesville (you can see the number below the terminal, indicated by a flag). For the first third of the route, it follows Victoria Road, just as the 500 (the government bus from the City to Ryde) does. At Monash Road it turns north for two blocks then west into Buffalo Road. For the next third of the route it is not far from the 500 to the south and the 75 to the north, though there are few cross streets on this section, and not many houses, since this area is mostly industrial. It is the last part of the route, where it turns north along Aitchandar road, that the 126 has the most productive territory. It moves away from the 500, but once on Quarry Road it draws near to another Hunter's Hill route, the 205, from Top Ryde to North Ryde. On Woodbine Crescent the 126 is only two short blocks from Lane Cove Road where the 205 runs (the Collin's map shows the 126 against both the Woodbine and Lane Cove routes). This is the area where the Saturday bus made its loop. The 126 was in an older, more developed area of Ryde, with little chance for expansion and too close to other bus routes for a prosperous future.

The next timetable, (see pages 9 and 10, bottom) commenced on Saturday 5th January 1974. There is still a single shift, the 14, operat-

HUNTER'S HILL BUS CO.	
1-3 Monash Road, Gladesville	
C. PAULL, Manager, W.N.1601	
BUFFALO ROAD	
Commencing: Friday, 3rd March	
Route 126	
TIMETABLE	
Mondays to Fridays	
Depart	Depart
GLADESVILLE	RYDE
6.48	7.00
7.32	7.52
8.16	8.36
9.00	9.20
9.44	10.04
10.28	11.12
11.12	12.00
11.56	12.52
12.40	1.40
1.24	2.24
2.08	3.08
2.52	3.52
3.36	4.40
4.20	5.28
5.04	6.16
5.48	6.52
6.34	6.52
	arrive Ryde
Saturdays	
Depart	Depart
GLADESVILLE	RYDE
8.00	8.21
8.44	9.05
9.28	9.49
10.11	10.32
10.54	11.16
11.38	12.00
12.21	12.41
arrive	
Gladesville	
Times Print, Gladesville - W.N.2608	

Route 126, Buffalo Road current 1961

ing on Mondays to Fridays, with one School Special provided by Shift 20, but the off-peak service runs only in the first half of the day. Only alternate runs go to Gladesville in the off-peak, with the others going to the Dress Circle Estate, East Ryde. You won't find it on the map, but Moncrieff Drive can be found north of the Field of Mars Cemetery. As we can see, this was still 'North Ryde' in the late sixties. This area was also served by the route 75 from Gladesville. The 126 operated in opposite directions along Aitchandar Road coming out of Top Ryde, depending on whether it was going to Gladesville or East Ryde. There is still Saturday service, but only to Dress Circle Estate and it is run, not by the route 126's bus, shift 14, but other shifts out of Top Ryde.

My last timetable for the 126 was

Hunters Hill Bus Co. 1 Monash Road, Gladesville		K. A. Best Manager phone 89.1631	
B U S T I M E - T A B L E			
ROUTE NO. 126		ROUTE NO. 126	
GLADESVILLE to RYDE			
via Buffalo & Quarry Rds, Woodbine Cres.			
DEPART GLADES- VILLE	Depart Buffalo & Cressey Roads	ARRIVE R Y D E	DEPART R Y D E
Depart Buffalo & Cressey Roads	ARRIVE R Y D E	DEPART R Y D E	Depart Buffalo & Cressey Roads
ARRIVE R Y D E	DEPART R Y D E	ARRIVE GLADES- VILLE	DEPART R Y D E
TO RYDE		TO GLADESVILLE.	
Mondays to Fridays			
14	a.m. 27.0	a.m. 7.3	a.m. 7.15
14	7.36	7.42	7.52
14	8.15	8.21	8.32
17	Depart Monash & Buffalo Rds 8.25B via Rt.126 to Lane Cove Road thence Quarry Rd, Smalls Rd to Ryde High School, arrive 8.35am		
26	Depart Buffalo & Malvina St 8.25B via Rt.126, Quarry & Lane Cove Road to Ryde, thence to St. Charles Catholic School, arrive 8.42am		
14	9.0	9.6	9.16
14	9.40	9.46	9.56
14	10.20	10.26	10.36
14	11.0	11.6	11.16
14	11.40	11.46	11.56
14	12.20pm	12.26pm	12.36pm
14	1.0	1.6	1.16
14	2.10	2.16	2.26
14	2.50	2.56	3.6
22	Depart St. Charles Catholic School 3.38B via Victoria Rd, Ryde Primary School, arrive 3.50B		
14	3.38B	3.45	3.57
14	4.28	4.34	4.44
14	5.15	5.21	5.31
18	5.55	6.1	6.11
14	a.m. 7.27	a.m. 7.33	a.m. 7.40
14	7.55	8.6	8.12
14	8.40	8.52	8.58
14	9.27	9.32	9.38
14	10.12	10.17	10.23
14	10.52	10.57	11.03
14	11.32	11.37	11.43
14	12.12pm	12.17pm	12.23pm
14	12.52	12.57	1.03
14	1.42	1.47	1.53
14	2.32	2.37	2.43
14	3.10xx	3.26	3.32
14	4.50	5.2	5.8
14	5.34	5.46	5.51
14	6.15	6.27	6.32

Time-table continued...

Depart Ryde.	Depart Woodbine Crescent & Quarry Road	Depart Aitchandar & Buffalo Roads	Arrive Ryde
S A T U R D A Y S			
14	a.m. 8.22	a.m. 8.26	a.m. 8.31
14	8.48	8.52	9.1
14	9.28	9.28	9.31
14	10.18	10.22	10.26
6	From Monash Rd Depot 11.19 11.21 11.26		
14	11.30	11.32	11.38
14	12.5	12.9	12.13
14	12.29	12.29	12.33
14	12.40 via Buffalo Road direct to Monash Road Depot		
NOTE On SATURDAYS Buses operate from Ryde via Lane Cove Rd, Buffalo Rd, Greene Ave, Woodbine Cres, Quarry Road, Gardiners Ave, Bidgee St, Aitchandar Road, Buffalo Road, Lane Cove Road and return to Ryde.			
No service Sundays-Holidays-Good Friday-Christmas Day			
Abbreviations used in this time-table			
B Denotes - Runs on School days only.			
V Denotes - Runs to or from Gladesville School			
Z Denotes - Runs to or from Monash Road, Depot.			
xx Denotes - Runs via Lane Cove Road to Ryde High School, and exits Woodbine Crescent on school days			
ROUTE OF THIS SERVICE			
From GLADESVILLE: via Victoria Road, Monash Road, Buffalo Rd, Aitchandar Road, Bidgee Street, Gardiners Avenue, Quarry Road, Woodbine Crescent, Greene Avenue, Buffalo Road, Lane Cove Road to RYDE.			
This time-table commences on 18th November, 1966			

Above: Route 126, Gladesville to Ryde, 18th November 1966

Below: Route 126; Gladesville to Ryde Saturday 5th January 1974 (page 1)

HUNTERS HILL BUS CO. PTY. LTD. 1 Monash Road, Gladesville, NSW. 2111		B U S T I M E - T A B L E		Telephone 89-1601 ROUTE NO. 126	
RYDE to DRESS CIRCLE ESTATE, EAST RYDE and GLADESVILLE					
R U N No.	DEPART GLADESVILLE (Victoria Road near Jordan St)	DEPART DRESS CIRCLE ESTATE, East Ryde	Depart Aitchandar & Buffalo Roads.	Depart Woodbine Cres & Bambi St.	ARRIVE R Y D E (Devlin St opp Grace Bros.)
					DEPART R Y D E (Devlin St opp Grace Bros.)
					Depart Woodbine & Buffalo Rd. Bambi St.
					ARRIVE DRESS CIRCLE ESTATE East Ryde.
					ARRIVE GLADESVILLE (Victoria Road near Jordan St)
TO RYDE			TO DRESS CIRCLE ESTATE and GLADESVILLE.		
MONDAYS to FRIDAYS					
14	a.m. 7.0	a.m. 7.4	a.m. 7.8	a.m. 7.13	a.m. 7.15
14	7.34	-	7.40	7.44	7.52
14	8.11B	-	8.23B	8.27B	8.37B
14	8.20*	-	8.26*	8.30*	8.40
26	Depart Buffalo & Malvina St. 8.13am via Route 126 to Quarry Road, thence Lane Cove Rd, to Ryde, thence Blaxland Rd, Victoria Road to St. Charles Catholic School, arrive 8.37am				
14	9.7	-	9.13	9.17	9.25
14	-	9.37	9.43	-	9.51W
14	10.8	-	10.14	10.18	10.26
14	-	10.39	10.45	-	10.53
14	11.11W	-	11.17W	11.21	11.29
14	-	11.41	11.46	-	11.53
14	Z 2.59QQ	-	3.20Q	QQ	3.19QQ
14	Z 3.11*	-	3.14*	via Buffalo Rd	3.19*
14	Depart St. Charles Catholic School 3.35pm via Victoria Road, Princess St, Argyle St Blaxland Road.....3.45B				
14	3.40V	-	3.46	3.50	3.56
14	4.30	-	4.36	4.40	4.55
14	5.15	-	5.21	5.25	5.37
					a.m. 7.21
					a.m. 7.25
					a.m. 8.2
					a.m. 8.50
					a.m. 9.31
					a.m. 9.36
					a.m. 10.0W
					a.m. 10.33
					a.m. 10.38
					a.m. 11.3
					a.m. 11.35
					a.m. 11.41
					a.m. 12.3pm
					a.m. 3.32
					a.m. 3.38
					a.m. 3.55B
					a.m. 4.15
					a.m. 4.21
					a.m. 5.5
					a.m. 5.51
					a.m. 5.47
					a.m. 7.32
					a.m. 8.8
					a.m. 8.56
					a.m. 10.6W
					a.m. 11.9
					a.m. 12.9pm
					a.m. 3.38
					a.m. 4.21
					a.m. 5.11
					a.m. 7.50
PLEASE NOTE WHERE EACH JOURNEY STARTS AND FINISHES Abbreviations alongside departure times, indicates that such journeys are CONDITIONAL, OPERATE ON CERTAIN DAYS ONLY, OR DIVERT FROM THE NORMAL ROUTE, for details see General service information.					
THIS TIME-TABLE COMMENCES ON SATURDAY 5TH JANUARY, 1974					

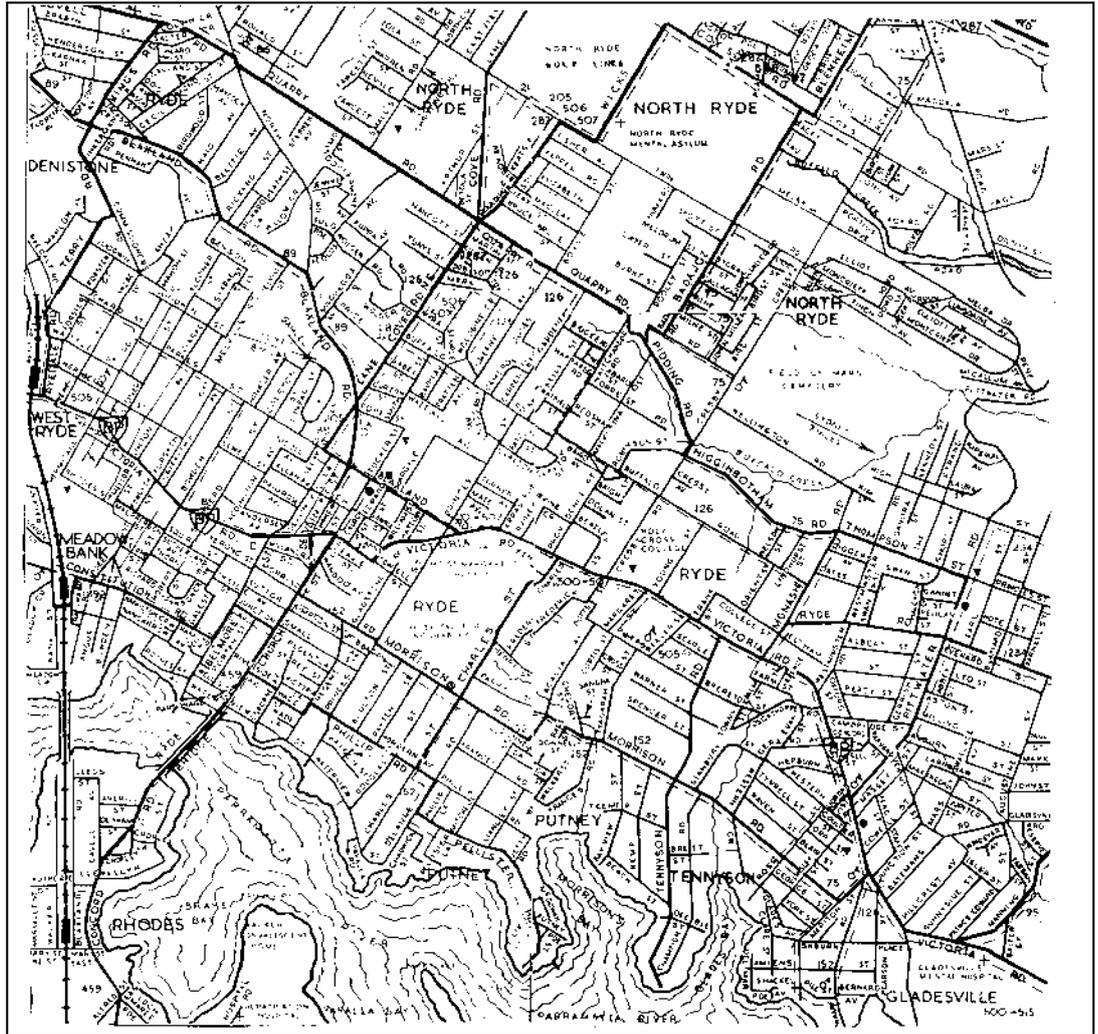
issued on Monday 25th August 1980 (page 11). The service has again been reduced. The Ryde to

Dress Circle Estate has been dropped, and the off-peak service runs only to the Aitchandar loop.

The service in the peak hours are either school specials or buses going to or from West Ryde Station,

Right: The area round Ryde and Gladesville, showing the Route 126 and other bus routes. Collins Sydney Street Directory

Below: Route 126; Gladesville to Ryde Saturday 5th January 1974 (page 2)



ROUTE NO. 126 ----- R Y D E to DRESS CIRCLE ESTATE, EAST RYDE.						
Run No.	DEPART DRESS CIRCLE ESTATE, East Ryde.	Depart Aitchandar & Buffalo Roads.	ARRIVE R Y D E (Devlin St opp. Grace Bros.)	DEPART R Y D E (Devlin St opp. Grace Bros.)	Depart Aitchandar & Buffalo Roads.	ARRIVE DRESS CIRCLE ESTATE, East Ryde.
	TO RYDE →			TO DRESS CIRCLE ESTATE →		
	SATURDAYS					
3	a.m. 9.0	a.m. 9.6	a.m. 9.10	a.m. 9.17	a.m. 9.21	a.m. 9.27
3	9.30	9.35	9.40	10.17	10.21	10.27
3	10.28	10.34	10.38	-	-	-
6	-	-	-	11.30	11.34	11.41
6	11.42	11.48	11.52	-	-	-
4	-	-	-	12.5pm	12.9pm	12.10pm
	NO SERVICE ON RYDE TO GLADESVILLE SECTION OF THIS SERVICE ON SATURDAYS.					
	GENERAL SERVICE INFORMATION					
	Abbreviations used in this time-table					
B	Denotes - Bus runs on school days only					
V	" Bus runs to or from Gladesville Public School					
*	" Bus runs during SCHOOL HOLIDAYS ONLY.					
QQ	" On school days, runs via Route 126 service to Quarry Road, thence Lane Cove Road, Bridge Road, Smalls Road, Quarry Road, Lane Cove Road to Ryde, calling at Malvina & Ryde High Schools.					
Z	" Runs to or from Monash Road, Depot.					
W	" Bus runs via Monash Road, Thompson St, Westminster Road or vice versa.					
BB	" This Bus starts from Ryde P.O. in Blaxland Road					
	ROUTE OF GLADESVILLE SERVICE.			ROUTE OF DRESS CIRCLE SERVICE.		
	From Ryde:- Devlin St, Blaxland Rd, Devlin St, Lane Cove Rd, Buffalo Rd, Greene Ave, Woodbine Cres, Quarry Rd, Gardiners Ave, Bidgee St, Aitchandar Rd, Buffalo Rd, Monash Rd, Victoria Rd to Gladesville.			From Ryde:- Devlin St, Blaxland Rd, Devlin St, Buffalo Rd, Aitchandar Rd, Bidgee St, Gardiners Ave, Quarry Rd, Boyce St, Twin Rd, Mancrieff Drive to Sagar Place.		

NO SERVICE ON SUNDAYS HOLIDAYS GOOD FRIDAY and XMAS DAY

NORTH & WESTERN BUS LINES PTY. LIMITED,
1 MONASH ROAD,
GLADESVILLE, N.S.W. 2111.

ROUTE 126
GLADESVILLE to RYDE.

Telephone: H 6-2622

(Certain journeys extend to West Ryde)
via Buffalo Rd., Quarry Rd., Woodbine Cres.

Bus No.	DEPART GLADESVILLE Victoria Rd near Jordan Street.	Depart Aitchandar & Buffalo Roads.	Depart Boyce St & Quarry Road.	ARRIVE RYDE Devlin St opposite Grace Hosp.	Arrive St. Charles & Holy Cross College.	Arrive West Ryde Station Bus Station West Parade.	Depart West Ryde Station West Parade.	Depart Holy Cross College & St. Charles.	DEPART RYDE Devlin St opposite Grace Hosp.	Depart Boyce St & Quarry Road.	Depart Aitchandar & Buffalo Roads.	ARRIVE GLADESVILLE via Jordan Street.
TO RYDE AND WEST RYDE						TO RYDE AND GLADESVILLE						
	TUESDAYS TO FRIDAYS											
31	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.
3	5.24	5.28 via Buffalo Road	5.31	5.31	5.34	5.34	5.34	5.34	5.34	5.34	5.34	5.34
6	6.30	6.34 via Buffalo Road	6.38	6.38	6.45	6.45	6.45	6.45	6.45	6.45	6.45	6.45
7	7.00	7.04 via Buffalo Road	7.08	7.08	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14
11	7.34	7.40	7.44	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50
13	8.14 Bxx	8.13 G	8.18 B LC	8.28 B	8.37 B	8.37 B	8.37 B	8.37 B	8.37 B	8.37 B	8.37 B	8.37 B
14	8.20 *	8.26 *	8.30 *	8.37 *	8.37 *	8.37 *	8.37 *	8.37 *	8.37 *	8.37 *	8.37 *	8.37 *
15	9.05	9.12	9.16	9.22	9.22	9.22	9.22	9.22	9.22	9.22	9.22	9.22
17	-	9.40 xx	9.44	9.49	9.49	9.49	9.49	9.49	9.49	9.49	9.49	9.49
19	-	10.26 xx	10.29	10.34	10.34	10.34	10.34	10.34	10.34	10.34	10.34	10.34
21	-	11.26 xx	11.29	11.34	11.34	11.34	11.34	11.34	11.34	11.34	11.34	11.34
23	-	12.26 xx	12.29	12.34	12.34	12.34	12.34	12.34	12.34	12.34	12.34	12.34
25	p.m.	p.m.	p.m.	p.m.	p.m.	p.m.	p.m.	p.m.	p.m.	p.m.	p.m.	p.m.
26	-	12.26 xx	12.29	12.34	12.34	12.34	12.34	12.34	12.34	12.34	12.34	12.34
27	-	-	-	-	-	-	-	-	-	-	-	-
28	-	3.05 (H)	3.08 (H)	3.19 (H)	3.19 (H)	3.19 (H)	3.19 (H)	3.19 (H)	3.19 (H)	3.19 (H)	3.19 (H)	3.19 (H)
28	-	3.14* via Buffalo Road	3.19*	3.19*	3.19*	3.19*	3.19*	3.19*	3.19*	3.19*	3.19*	3.19*
28	-	-	-	-	-	-	-	3.35 B	3.45 (H) H	3.52 B	3.55 B	3.55 B
28	-	3.55 via Buffalo Road	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02
17	-	-	-	-	-	4.10	4.10	4.10	4.10	4.10	4.10	4.10
14	-	-	-	-	-	4.04 xx	4.04 xx	4.04 xx	4.04 xx	4.04 xx	4.04 xx	4.04 xx
12	-	-	-	-	-	5.17	5.17	5.17	5.17	5.17	5.17	5.17
27	-	-	-	-	-	5.29 (H) via Buffalo Road	5.29 (H) via Buffalo Road	5.29 (H) via Buffalo Road	5.29 (H) via Buffalo Road	5.29 (H) via Buffalo Road	5.29 (H) via Buffalo Road	5.29 (H) via Buffalo Road
3	-	-	-	-	-	5.36 xx	5.36 xx	5.36 xx	5.36 xx	5.36 xx	5.36 xx	5.36 xx
10	-	-	-	-	-	5.40 (H) via Buffalo Road	5.40 (H) via Buffalo Road	5.40 (H) via Buffalo Road	5.40 (H) via Buffalo Road	5.40 (H) via Buffalo Road	5.40 (H) via Buffalo Road	5.40 (H) via Buffalo Road
10	-	-	-	-	-	6.02 (H) via Buffalo Road	6.02 (H) via Buffalo Road	6.02 (H) via Buffalo Road	6.02 (H) via Buffalo Road	6.02 (H) via Buffalo Road	6.02 (H) via Buffalo Road	6.02 (H) via Buffalo Road
32	-	-	-	-	-	9.30 (H)	9.30 (H)	9.30 (H)	9.30 (H)	9.30 (H)	9.30 (H)	9.30 (H)

This Timetable commences Monday, 25th August, 1980

ABBREVIATIONS USED IN THIS TIME-TABLE:-

- B Denotes - Runs on School days only.
- xx " - Departs from northern side of Victoria Road near Pittwater Road and operates via Pittwater Road, Ryde Road, Park Road, Primus Street, Thompson Street, Monash Road regaining normal route in Monash and Buffalo Roads, calling at Malvina High School.
- LC " - Runs via Lane Cove and Quarry Roads in lieu of Woodbine Crescent and Buffalo Road.
- * " - Bus runs during School holidays only.
- QH " - On School days, bus runs from MALVINA HIGH SCHOOL via Route 126 to Quarry Road, Lane Cove Road, Bridge Road, Swales Road, RYDE HIGH SCHOOL, Quarry Road, Lane Cove Road to Ryde. Picks up as required.
- xx " - Buses run from RYDE via Lane Cove Road, Buffalo Road, Aitchandar Road, Bridge Street, Gardiners Avenue, Quarry Road, returning back to Ryde via Woodbine Cres. and Buffalo Road, Lane Cove Road, with the exception of the 6.04pm and 6.36pm journeys, which extend to MACQUARIE UNIVERSITY and EASTWOOD.
- Ø " - Terminates at Cressy and Buffalo Roads.
- PO " - Bus departs from RYDE POST OFFICE, omits Devlin Street bus stop.
- fl " - Bus runs 10 minutes later on late shopping nights.
- † " - Bus extends to Boronia Park.

ROUTE OF THIS SERVICE:-

From GLADESVILLE... via Victoria Road from Jordan Street, Monash Road, Buffalo Road, Buffalo Road, Aitchandar Road, Bridge Street, Gardiners Avenue, Quarry Road, Woodbine Cres., Greene Avenue, Buffalo Road and Lane Cove Road to RYDE.

Certain journeys extend to WEST RYDE STATION via Victoria Road, Bernallup Road, Herbert Street, Ryedale Road, Marlow Street Overbridge, West Parade to the Bus Station. Also via Victoria Road to St. Charles School and Holy Cross College.

Route 126; Gladesville to Ryde, 25th August 1980

where they operate on other routes as well as the 126, starting from Gladesville rather than the depot in Monash Road, travelling along Buffalo Road and picking up any passengers on offer. The shift 14 has almost disappeared, but if you look closely, you will see it still runs the 8.14 a.m., School Days Only (and the 8.20 in School Holidays) and 9.05 from Gladesville and the 5.04 p.m from Ryde, which goes on to Macquarie University and carries route 85, Top Ryde to Macquarie via Midway.

The 126 disappeared as a bus route thereafter, but it did not van-

ish without any trace. If we look at the 30th June 1986 Timetable for the Route 228, Eastwood to Ryde via Midway (see page 12 of this issue and page 12 of the September 2001 issue of The Times for an earlier 228 timetable), we see against the morning off-peak runs leaving Ryde, and those leaving Quarry and Lane Cove Roads for Ryde, the letters X or XJ. These abbreviations show that these buses diverted via Buffalo, Aitchandar and Quarry Roads. The new service, which started in the 1960's to service new houses in the area between Eastwood and North Ryde, still provides some service

around Aitchandar Road. But even with the greater area from which the 228 can draw, it provided only an hourly service, contrasting with the forty-minutes the route 126 had once managed. And if you were wondering about the buses which run only one way in the off-peak, with different shifts in opposite directions, they operated the 85 form Eastwood to Top Ryde via Macquarie University on the missing legs to provide an hourly service on both routes.

NORTH & WESTERN BUS LINES PTY. LIMITED

1 MONASH ROAD,
GLADESVILLE NSW 2111

TELEPHONE: 816 2622

ROUTE 228

EASTWOOD STATION TO RYDE

VIA MIDWAY - NORTH RD. & BRIDGE RD.

PLEASE NOTE WHERE EACH JOURNEY STARTS AND FINISHES
Abbreviations alongside departure times indicate that such journeys are
CONDITIONAL, OPERATE ON CERTAIN DAYS ONLY, OR DIVERT FROM THE NORMAL ROUTE.

Run No.	DEPART RYDE (Devlin St (Car Park))	Arr/Dep Quarry & Lane Cove Roads	Arr/Dep Threlfall St & North Road	Arr/Dep Midway (Lovell & North Rds)	ARRIVE EASTWOOD STATION (Ethel St)	DEPART EASTWOOD STATION (Ethel St)	Arr/Dep Midway (Lovell & North Rds)	Arr/Dep Threlfall St & North Road	Arr/Dep Quarry & Lane Cove Roads	ARRIVE RYDE (Devlin St (Car Park))	
	→ TO EASTWOOD STATION										
						← TO RYDE					
	MONDAYS TO FRIDAYS										
6	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	
2	-	-	5.41	5.44	5.50	-	6.06 via Watts Road	-	6.12	6.15	
2	-	-	6.09	6.12	6.18	-	-	-	-	-	
10	-	6.36	6.41	6.44	6.50	7.00	7.07	7.10	7.17	7.20	
29	-	7.03	7.10	7.13	7.20	7.23	7.30	7.33	7.40	7.43	
10	7.23	7.28	7.35	7.38	7.46	7.47K	7.56K	7.52K	-	-	
10	-	-	7.52	7.56	8.04	8.06	8.14	8.18RHS	8.28	8.32	
25	from East Ryde	-	-	7.58B	8.04B	8.06B	8.14B	8.18B	to Peter Board High School.	-	
29	7.45	7.52	8.00	8.04	8.12	8.13K	8.22K	8.19K	-	-	
29	-	-	8.19T	8.30T	8.45C	9.04X	9.12K	9.09K	-	-	
10	8.35	8.40	8.48	8.52	9.00	9.02	9.09	9.12	9.19	9.21	
29	-	-	9.10	9.13	9.20	9.22	9.29	9.32	9.39XJ	9.47	
2	9.59X	10.07	10.14	10.17	10.24	-	-	-	-	-	
29	-	-	-	-	-	10.22	10.29	10.32	10.39X	10.47	
2	-	-	-	-	-	-	-	-	-	-	
29	10.59XJ	11.07	11.14	11.17	11.24	11.22	11.29	11.32	11.39X	11.47	
2	-	-	-	-	-	-	-	-	-	-	
29	11.59X	12.07pm	12.14pm	12.17pm	12.24pm	12.22pm	12.29pm	12.32pm	12.39X	12.47pm	
2	-	-	-	-	-	-	-	-	-	-	
29	12.59XJ	1.07	1.14	1.17	1.24	1.22	1.29	1.32	1.39	1.42	
2	-	-	-	-	-	-	-	-	-	-	
29	1.59	2.07	2.14	2.17	2.24	-	2.29	2.32	2.39	2.42	
10	2.26	2.31	2.38	2.41	2.48	2.50	2.57	3.00	3.07	3.10	
10	3.12	3.17RHS	3.25	3.29	3.37	C3.45	3.53	3.56	4.03	4.07	
29	From Peter Board High School at 3.25pm B	-	-	3.50B	3.58B	C3.45B	3.53B	3.57B	-	-	
29	-	-	H3.56	H3.53	4.02	4.06	4.14	4.17	to Small's Rd	-	
29	-	-	-	-	-	4.30	4.37	4.41	4.48	4.52	
10	4.15	4.20	4.27	4.30	4.37	4.51	4.58	5.01	-	-	
10	-	-	H5.01	H4.58	H5.06	5.12	5.19	5.22	5.29	5.32	
29	4.55	5.00	5.07	5.10	5.17	5.35	5.42	5.45	-	-	
29	-	-	H5.45	H5.42	H5.50	5.55	6.02	6.05	6.12	6.15	
10	5.38	5.43	5.50	5.53	6.00	6.10	6.17	6.20	-	-	
10	-	-	H6.20	H6.17	H6.25	6.33	6.40	6.43	6.50	6.53	
29	6.18	6.23 via Watts Road	-	6.28	-	-	-	-	-	-	
	-	-	-	-	-	6.53M	7.00M	7.03M	-	-	
	-	-	-	-	-	7.30M	7.37M	7.40M	-	-	
	-	-	-	-	-	8.30M	8.37M	8.40M	-	-	
	-	-	-	-	-	9.30M	9.37M	9.40M	-	-	
	SATURDAYS AND EASTER SATURDAY										
1	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	
1	7.43	7.47 via Quarry Road	-	7.51 via North Rd.	8.30	8.37	8.40	8.46	8.49	8.49	
2	-	-	-	-	-	8.30	8.37	8.40	8.46	8.49	
1	8.36	8.41	8.46	8.49	8.56	9.30	9.37	9.40	9.46	9.49	
1	9.36	9.41	9.46	9.49	9.56	10.30	10.37	10.40	10.46	10.49	
1	10.36	10.41	10.46	10.49	10.56	11.30	11.37	11.40	11.46	11.49	
2	11.36	11.41	11.46	11.49	11.56	12.30pm	12.37pm	12.40pm	12.46pm	12.49pm	
2	12.36pm	12.41pm	12.46pm	12.49pm	12.56pm	2.00M	2.07M	2.10M	-	-	
3	-	-	M 2.37	M 2.40	M 2.47	3.00M	3.07M	3.10M	-	-	
3	-	-	M 3.37	M 3.40	M 3.47	4.00M	4.07M	4.10M	-	-	
3	-	-	M 4.37	M 4.40	M 4.47	5.00 via Fiveways, North Rd to Midway, Quarry Rd to Depot.	-	-	-	-	

THIS TIME-TABLE EFFECTIVE FROM 12.01am MONDAY 30th JUNE, 1986.

ABBREVIATIONS USED IN THIS TIME-TABLE:-

- K....Denotes runs to or from Eastwood Station via North Road, Fiveways and Balaclava Road.
- C....Denotes runs to or from Eastwood Schools on School Days only.
- B....Denotes operates on School Days only.
- M....Denotes operates via Pickford Ave, Lovell Rd and North Rd joins Route 85 bus and extends to Macquarie Shopping Centre.
- X....Denotes operates via Buffalo Rd, Aitchandar Rd and Quarry Road or vice versa.
- RHS....Denotes diverts via Ryde High School.
- T....Denotes join bus for Eastwood on outward journey, bus returns to Eastwood via Lovell Road, Midway, North Road and Fiveways.
- J....Denotes operates to St Therese School via Bridge Rd, Small's Rd and Lovell Road.

Route 228: Ryde to Eastwood via Midway, Monday 30th June 1986, showing runs via Aitchandar Road.

Indian Railway Atlas

VICTOR ISAACS reviews an interesting new atlas and timetable for India. A timetable page from it appeared in our April edition.

The India Railway Atlas offers an overview of this huge passenger and freight travel system.

The book commences with overview maps of the locations of Indian tourist sites and Indian highways and airways, then a larger overview map of the Indian railway system, showing the headquarters of each of the Railway Zones. Then there are pages about the "Royal Trains", i.e. luxury trains offering all-inclusive travel for tourists, and the "Toy Trains", i.e. the narrow-gauge lines to mountain resorts.

The main part of the volume comprises maps occupying one or two pages for each State or group of States clearly showing the railway lines, plus a description of the States' attractions written in a hyperbolic style, plus a few sentences about transport. These maps are clearly drawn, but are very basic. Unfortunately they miss a great opportunity. They show neither

the Railway Zones, nor whether the railways are electrified or not, nor whether they are duplicated or not, nor even the gauge of the lines.

There are also maps of the Metros in Delhi, Kolkata (Calcutta), and the suburban railways in Chennai (Madras) and Mumbai (Bombay). The two maps of Mumbai are particularly good - the best in the book.

The volume also includes sections devoted to "Indian Railways - Some Fascinating Facts" and "World Railway Facts". These include a good deal of useful and interesting information. From the Indian list, especially, we can glean some quirky facts, such as (taken at random) the first vestibule train, the first air-conditioned train, the first police station on a train, the stations with the shortest (Ib) and longest (not for publication here!) names, the first Indian woman diesel locomotive driver, the world's busiest narrow-gauge junction,

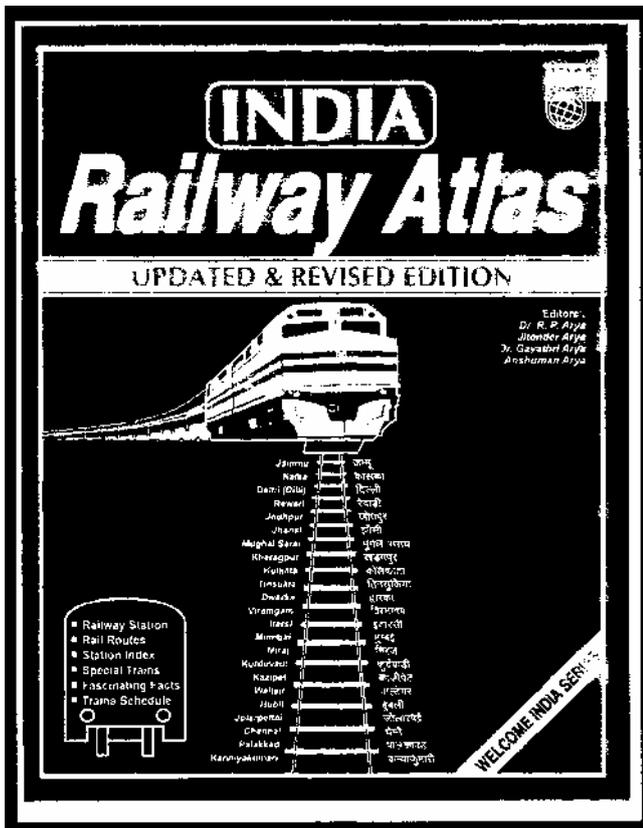
tallest viaduct, longest bridge, and so on.

The book concludes with an index of major names.

Inserted into the middle of this volume is Indian Map Service's "Railway Time Table Sept 2004 to June 2005". This commences with summary timetables of the super-express trains. Most of this timetable is arranged in a peculiar and not particularly helpful fashion. This is arranged by State, then major cities in each State. For each, the express trains are listed in train number order, with summaries of departure time and arrival times in each subsequent city.

Recommended if you are interested in India, or planning travel there, or a railway map enthusiast.

INDIA RAILWAY ATLAS, 52 pages, colour, published by Indian Map Service, \$20, available from Mercury Travel Books, PO Box 192, Botany NSW 1455, mercury-



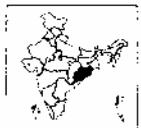
ORISSA 30

Orissa - The "Land of Many Splendours", or can be aptly named as a "Land for All Reasons". The god must have been very lavish in his bounty whilst creating it. Orissa is a simply irresistible destination with historic monuments and architecture, traditions, Hindu, Jain and Buddhist shrines, colourful fairs and festivals, exotic handicrafts and hand woven textiles, mouth watering cuisine, art, dance, music, sporting fairs amidst majestic peaks, shimmering sands and sparkling waves, adventure sports, the enthralling flora and fauna, above all the lush green country side.

Orissa was known as Kalinga in ancient days. Emperor Ashoka (273 - 232 BC) sent a powerful army to subdue Kalinga. He won the war but the carnage which followed, struck Ashoka with remorse and he turned towards Buddhism.

Orissa is a kaleidoscope of past splendours and contemporary expression. The Sun Temple at Konark, north of Puri, is in itself enough for a trip to India. The Lord Jagannath's Temple at Puri is one of the four holiest Hindu pilgrim centres - "Char Dham". The Rath Yatra (Chari Festival) in the month of June / July, is the world famous festival at Puri, with millions of devotees coming from all over the world. The other important festival is the Konark Dance Festival featuring the best of Odissi and other dance forms by renowned artists.

Area	156,707 sq km.
Capital	Bhubaneswar
Population	3,87,06,920 (2001)
Languages	Odia
Literacy	63.61
Density	236
Districts	30
Crops	Rice, Mesta
Minerals	Coal, Iron Ore
Industries	Iron & Steel



TRANSPORTATION

Railways : Orissa had 2000 km. of total rail length by end of 1992 including 1,858 km. broad gauge and 142 km. narrow gauge. A new Railway Division is functioning at Sambalpur from March 1990. Teltcher Angul Railways has been opened for traffic.

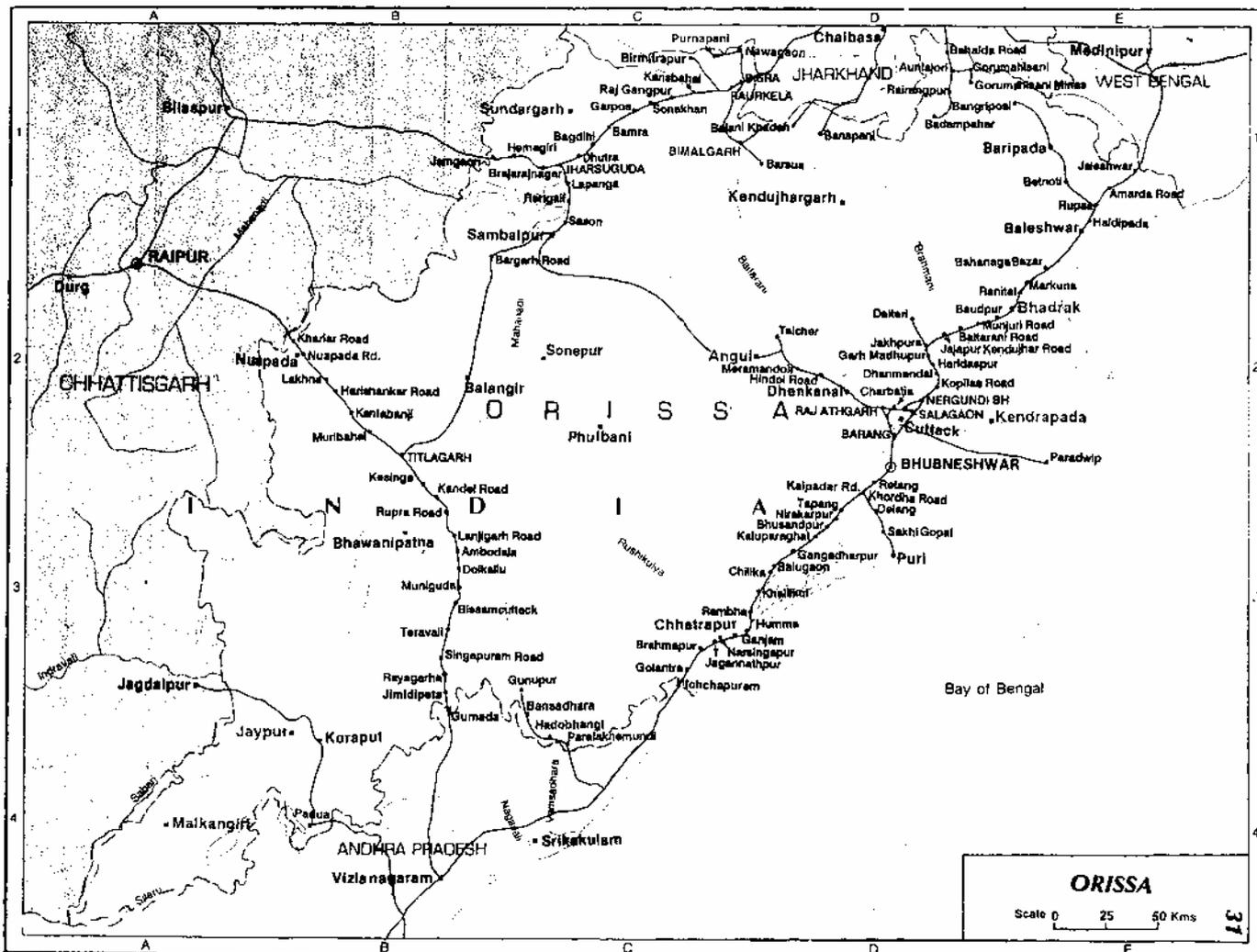
Roadways : Total road length 1,22,246 km.

Airways : The airport at Bhubaneswar connects with regular scheduled services to New Delhi, Varanasi, Calcutta, Nagpur, Hyderabad, Mumbai and Chennai. There are 17 other air - strips and 16 heliports in the state.

Ports : Paradeep was declared major port in 1966. There are minor ports at Gopalpur and Bapatpur.

SOME PLACES OF TOURIST INTEREST & NEAREST RAILHEAD

Place	Distance	Railhead	Famous for
Balangir	---	Balangir	Temples
Berhampur	---	Berhampa	Ancient Forts, Temples, Tribals
Berhampur	---	Berhampur	Handicrafts, Handloom silks
Bhubaneswar	---	Bhubaneswar	Temple City (over 500), Museums
Chika	---	Chika	Island dotted lake, Boating, Fishing, Birdlife
Cuttack	---	Cuttack	Handicrafts, Gateway to tribal territories, Fort, Muslim shrine
Jaypur	---	Jaypur	Old palaces, Antiques, Tribals, Handicrafts
Koraput	---	Koraput	Forests, Tribal villages, Pilgrim centre
Konark	33 km	Puri	13th century Sun temple is a marvel of architecture, Beaches
Paradeep	111 km.	Cuttack	Major Indian Port
Puri	---	Puri	One of the four most holy places of Hindu pilgrimage, Temples, Beaches
Raurkela	---	Raurkela	Steel plant, Askiene dam and Khandadhar Waterfalls are nearby
Sambalpur	---	Sambalpur	Temples, Textiles, Handicrafts
Simlipal	---	Berhampa	National Wildlife Park, Waterfalls, Scenic beauty
Taptapani	48 km.	Berhampur	Hot water springs, Picnic spot



Orissa—The ‘Land of Many Splendours’ and a ‘Land for All Reasons’, is featured on page 31 of the atlas. The map unfortunately doesn’t show it, but there are lines of 2 different gauges here— broad and narrow.

Bus timetables for Broome—by day and night

JIM STOKES and JUDY LAMBERT have each returned home from the tropical far North West, clutching some interesting timetables.

I thought you might be amused by the Broome bus timetable (opposite, top)—not at all a bad effort, really

Not many urban bus routes include a Crocodile Park—in the old days, the relevant Traction Publications book about this one would have been titled “Destination Crocodile Park..”

My favourite was the one-way scenic to Gantheaume Point, with a note on the back extolling the virtues of a 5 km walk back to civilisation (don’t forget your hat and water bottle). They are right about that; it was 41 degrees in Broome and 43 degrees for our 3 days at Fitzroy Crossing.—*Jim Stokes*

Opposite Bottom: Chinatown is where all the after-hours action happens in

Broome during the tourist season, but whether you are a backpacker or a resort guest, Cable Beach is the place to stay. It’s a long walk from one to the other after dark, so even though Broome’s Nightrider bus is not frequent, it is a good option.—*Judy Lambert*

Timetable Oddity #9 – Long Ago & Far Away– but dead on time

DEAD ON TIME: Last January, following a split-second timetable that had been set 7 years before and a billion kilometres away, the European Space Agency's Huygens probe parachuted to a safe landing on Saturn's moon Titan. Were it that public transport could plan and execute its timetables to such precision. Using mathematical techniques that were first developed by Apollo 11's 'back-seat passenger' Michael Collins, NASA/ESA planned an intricate 2 billion mile journey via Venus (twice), the Earth, Jupiter and several of Saturn's own moons to deliver the spaceship on time. That it is possible to make such a timetable– and to make it work– we have to thank the insights of Isaac Newton and Albert Einstein who demonstrated that traffic on the interplanetary transit-lanes is ruled by only one law– that of gravity. The times in the table below are given in terms of Universal Time, California's Pacific Daylight time and the time at the spacecraft. It took just over an hour for the signals to reach the Earth. Like most commuters, Huygen's carried its timetable on-board and referred to it to perform its critical manoeuvres.



Huygens Probe Mission Timeline - 2005					
Colors: blue = geometric events; green = sequencing; red = Probe-related Orbiter UTC = time event takes place at the spacecraft; Ground UTC = time event is seen at Earth, a one-way light time later					
Orbiter UTC	Ground UTC	Pacific Time	Time wrt Entry	Activity	Description
006T11:53	Jan 06 13:00	Thu Jan 06 05:00 AM	Entry-07d21h	S07 background sequence A ends; spacecraft configured for Probe relay	All instruments except MAG are turned off
007T09:00	Jan 07 10:07	Fri Jan 07 02:07 AM	Entry-07d00h	Probe relay critical sequence begins	8 day quiet period of minimal spacecraft activity before relay begins; orbiter on thruster control
014T06:26	Jan 14 07:33	Thu Jan 13 11:33 PM	Entry-02h40m	Set Solid State Recorder pointers for Probe recording	
014T06:38	Jan 14 07:45	Thu Jan 13 11:45 PM	Entry-02h28m	Transition to thruster control for relay	
014T06:48	Jan 14 07:55	Thu Jan 13 11:55 PM	Entry-02h18m	Perform final recorder configuration for relay	
014T06:50	Jan 14 07:57	Thu Jan 13 11:57 PM	Entry-02h16m	Turn on Probe receivers	
014T07:02	Jan 14 08:09	Fri Jan 14 12:09 AM	Entry-02h04m	Turn orbiter to point to Titan	
014T07:14	Jan 14 08:21	Fri Jan 14 12:21 AM	Entry-01h52m	Turn to Titan complete	
014T07:17	Jan 14 08:24	Fri Jan 14 12:24 AM	Entry-01h49m	Disable X band downlink	
014T08:44	Jan 14 09:51	Fri Jan 14 01:51 AM	Entry-00h22m	Probe turns transmitters on	Low power mode
014T09:06	Jan 14 10:13	Fri Jan 14 02:13 AM	Entry+00h00m	Probe reaches interface altitude	Entry altitude = 1270 km
014T09:09	Jan 14 10:16	Fri Jan 14 02:16 AM	Entry+00h03m	Probe feels maximum deceleration	
014T09:10	Jan 14 10:17	Fri Jan 14 02:17 AM	Entry+00h04m	Pilot chute deployed	170-190 km altitude; Mach 1.5; pilot chute is 2.6m in diameter
014T09:10	Jan 14 10:17	Fri Jan 14 02:17 AM	Entry+00h04m	Aft cover released, main parachute deployed	160-180 km; Mach 1.5; 2.5 seconds after pilot chute deployed; main chute is 8.3m in diameter
014T09:11	Jan 14 10:18	Fri Jan 14 02:18 AM	Entry+00h05m	Probe begins transmission to orbiter	
014T09:11	Jan 14 10:18	Fri Jan 14 02:18 AM	Entry+00h05m	Release front shield; transmitters to high power; instruments configured for descent; measurements begin	152-175 km; Mach < 0.6
014T09:25	Jan 14 10:32	Fri Jan 14 02:32 AM	Entry+00h19m	Main parachute separation; deploy stabilizing drogue chute	110-140 km altitude; drogue is 3m in diameter
014T09:42	Jan 14 10:49	Fri Jan 14 02:49 AM	Entry+00h36m	Surface proximity sensor activated	60 km altitude
014T09:49	Jan 14 10:56	Fri Jan 14 02:56 AM	Entry+00h43m	Possible icing effects to Probe	50 km altitude
014T11:12	Jan 14 12:19	Fri Jan 14 04:19 AM	Entry+02h06m	Titan-C orbiter closest approach	Inbound 60,000 km flyby at 5.4 km/s, 93 deg phase
014T11:23	Jan 14 12:30	Fri Jan 14 04:30 AM	Entry+02h17m	Descent imager lamp on	
014T11:24	Jan 14 12:31	Fri Jan 14 04:31 AM	Entry+02h18m	Surface impact, end descent phase	May vary ± 15 min depending on descent time
014T13:37	Jan 14 14:44	Fri Jan 14 06:44 AM	Entry+04h31m	Orbiter stops collecting probe data	Total 4 hours and 36 minutes of data collection
014T13:39	Jan 14 14:46	Fri Jan 14 06:46 AM	Entry+04h33m	Write protect probe data partitions	Partitions A5 and B5 of Solid State Recorder are protected from further data writing
014T13:47	Jan 14 14:54	Fri Jan 14 06:54 AM	Entry+04h41m	Turn orbiter to point to Earth	
014T13:50	Jan 14 14:57	Fri Jan 14 06:57 AM	Entry+04h44m	Turn to Earth complete	
014T13:59	Jan 14 15:06	Fri Jan 14 07:06 AM	Entry+04h53m	Critical sequence ends; S07 background sequence B begins	
014T14:00	Jan 14 15:07	Fri Jan 14 07:07 AM	Entry+04h54m	Post-Probe tracking begins	Canberra 70m station receiving; 10 minutes for DSN lockup allocated
014T14:07	Jan 14 15:14	Fri Jan 14 07:14 AM	Entry+05h01m	First telemetry data sent to Earth	
014T14:10	Jan 14 15:17	Fri Jan 14 07:17 AM	Entry+05h04m	Playback of probe data begins	At Canberra at 66,360 bps
014T16:50	Jan 14 17:57	Fri Jan 14 09:57 AM	Entry+07h44m	End playback of first partition	First copy of probe data received at Earth
014T16:57	Jan 14 18:04	Fri Jan 14 10:04 AM	Entry+07h51m	Ascending ring-plane crossing	Distance = 18.4 Saturn radii
014T17:53	Jan 14 19:00	Fri Jan 14 11:00 AM	Entry+08h47m	Start tracking at Madrid 70m	Data rate upgraded to 142,200 bps
014T21:00	Jan 14 22:07	Fri Jan 14 02:07 PM	Entry+11h54m	End first full playback of all Probe data	Complete set of all copies probe data received at Earth
015T00:22	Jan 15 01:29	Fri Jan 14 05:29 PM	Entry+15h16m	First complete set of Probe data reaches Huygens Operations Center	No later than time listed; likely up to ~3 hours earlier
015T02:28	Jan 15 03:35	Fri Jan 14 07:35 PM	Entry+17h22m	Start tracking at Goldstone 70m	
015T11:00	Jan 15 12:07	Sat Jan 15 04:07 AM	Entry+01d02h	Power on of orbiter instruments	If orbiter is healthy and playback proceeding per plan
015T12:23	Jan 15 13:30	Sat Jan 15 05:30 AM	Entry+01d03h	End nominal playback of Probe data	