

LEES

MELBOURNE AND METROPOLITAN TRAMWAYS BOARD

ENGINEERING DEPARTMENT

PLANNING BRANCH

SECTION TO SECTION TRIPS COMPILED FROM INFORMATION
OBTAINED BY THE MELBOURNE METROPOLITAN TRANSPORTA-
TION STUDY 1964 CARD SURVEY FOR TRAM AND BUS ROUTES
BASED ON THE CENTRAL BUSINESS AREA OF MELBOURNE.

SECTION TO SECTION TRIPS
1964

March, 1967.

Source of Information.

These tables were prepared from computer sheets made available by the Melbourne Metropolitan Transportation Study (OFF) SECTION

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It is understood that the data was obtained by expanding the results of a survey cards issued to passengers on tramway trips only and for which the return factor was approximately 25% thus giving an expansion factor for travel in both directions of the order of 8.

The procedure for some of the bus routes was varied to suit special conditions.

SECTION TO SECTION TRIPS COMPILED FROM INFORMATION OBTAINED BY THE MELBOURNE METROPOLITAN TRANSPORTATION STUDY 1964 CARD SURVEY FOR TRAM AND BUS ROUTES BASED ON THE CENTRAL BUSINESS AREA OF MELBOURNE.

The purpose of this exercise is to present in tabular form information which would indicate the origin (or destination) of passenger trips by tram or bus which terminate (or commence) within the central business area of Melbourne and thereby indicate for a 16 hour period on a typical weekday the extent of passenger trips portion of which would be along proposed underground tram routes and also to indicate the likely benefit to surrounding suburbs.

For completeness all tram routes and the Board's local Footscray bus routes have also been included, and all tables have been extended to include all section to section trips along each route.

These values have also been included on the tables to give an indication of the order of accuracy of the card survey expansion.

1. Source of Information.

These tables were prepared from computer sheets made available by the Melbourne Metropolitan Transportation Study and referred to as Survey Table 2 "ON (or OFF) SECTION by OFF (or ON) SECTION (Inbound and Outbound Trips - 16 hr. period)".

It is understood that this data was obtained by expanding the results obtained by survey cards issued to passengers on inbound trips only and for which the return of cards was approximately 25% thus giving an expansion factor for travel in both directions of the order of 8.

The procedure for some of the bus routes was varied to suit special conditions.

Sections referred to and their numerical designations are those selected for the Melbourne Metropolitan Transport Study.

2. Presentation of Information.

The data is presented in tabular form as essentially triangular charts, which have been converted to rectangular charts by the duplication of data so that the number of trips between a particular section and each other section along the route may be read in one continuous line either "horizontally" or "vertically".

A passenger who makes a return trip is regarded as making two trips.

For example, the number of trips in either direction between any section on the East Preston or East Brunswick routes and the section in Bourke Street from Queen Street to Spencer Street inclusive may be read from the table for Bourke Street Routes along either the line or down the column designated 301.

Lines and columns for trips that commence or terminate within the central business area are coloured green.

3. Test of Accuracy of "Expanded" Results of Card Survey.

For a terminal section the number of trips should be equal to the sum of the number of passengers "ON" in that section for trips in a direction away from it plus the number of passengers "OFF" in that section for trips in a direction towards it, as determined by actual passenger counts.

For an intermediate section the number of trips should be equal to the sum of the passengers "ON" plus the number of passengers "OFF" for both directions of travel minus the number of passengers whose trips were entirely within the section, each number being determined by actual passenger counts. (Note that each trip within a section would be counted as both a passenger "ON" and "OFF", whereas all other trips would be counted as either a passenger "ON" or "OFF").

These values have also been included on the tables to give an indication of the order of accuracy of the card survey expansion.

However, as passenger counts for trips entirely within a section are not available, it has been necessary to substitute the number of such trips obtained from the survey cards to arrive at the total number of trips as determined by passenger counts for intermediate sections on the assumption that because the trips within a section are such a small proportion of the total, the error would not be significant.

It is evident that the accuracy of expanded results of the survey cards is generally of the order of $\pm 10\%$ which would of course be adequate for planning purposes.

As an example, consider the last two sections on the Elizabeth Street Route.

Terminal section 288 Bourke Street to Flinders Street inclusive

Number of trips from survey cards		<u>51,755</u>
Passenger counts	ON outbound	24,728
"	" OFF inbound	<u>21,502</u>
		<u>46,230</u>

error is +12%.

Intermediate section 287 Victoria Street to Lonsdale Street inclusive

Number of trips from survey cards		<u>20,803</u>
Passenger counts	ON outbound	4,623
"	" OFF "	6,313
"	" ON inbound	7,141
"	" OFF "	<u>6,998</u>
		25,075
less section trips from survey cards		<u>302</u>
		<u>24,773</u>

error is -16%.

Combining sections 288 and 287

Number of trips from survey cards		72,558
" " " " counts		71,003

error is +2%.? *NO, this is not correct. 11/2/54*

There is evidence of passengers' actual journeys being shorter than the journey as stated on the survey card.

An outstanding example is section number 231 Batman Avenue to City Road inclusive

Number of trips from survey cards		<u>1,978</u>
Passenger counts	ON northbound	432
"	" OFF "	915
"	" ON southbound	4,758
"	" OFF "	<u>1,025</u>
		<u>7,130</u>

Section trips from survey cards nil.

This is however, probably the most abnormal case.

4. Trip Purpose.

Computer sheets are also available for the following trip purposes

- work
- business
- school
- shopping
- entertainment and recreation
- personal
- unknown.

Tables however have been included for the following only

St.Kilda Beach-Kew Cotham Road Route - Trips for school purposes -

School traffic on this route is particularly heavy.

Bourke Street Routes - Trips for work purposes
 " " shopping purposes.
 " " school purposes.

This is considered to be a normal route with perhaps shopping traffic heavier than average.

Elizabeth Street Routes - Trips for work purposes.
 " " shopping purposes.
 " " school purposes.

This is considered to be a normal route apart from the heavy school traffic to the University.

5. Derived Information.

The purpose of this report is to present the basic trip end information in tabular form so that further processing of data may be carried out as required.

D. W. Lees
30/3/67

LIST OF MAPS AND TABLES.

Maps -

1. Tram routes showing passenger densities.
2. Private bus routes showing passenger densities.

Tables showing section to section trips -

3. City-Elsternwick private bus route.
4. Footscray-East Melbourne private bus route.
5. Swanston Street private bus routes.
6. West Heidelberg bus route.
7. Footscray local bus routes.
8. Fishermens Bend bus routes.
9. Bulleen-Garden City bus route.
10. Queen Street bus routes.
11. St.Kilda Beach-Kew Cotham Road tram routes.
12. St.Kilda Beach-Kew Cotham Road tram routes -
school purposes only.
13. Moonee Ponds-Footscray tram route.
14. Bourke Street tram routes.
15. Bourke Street tram routes -
work, shopping and school purposes
16. Collins Street and LaTrobe Street tram routes.
17. Flinders Street tram routes.
18. Batman Avenue tram routes.
19. William Street tram routes.
20. Elizabeth Street tram routes.
21. Elizabeth Street tram routes -
work, shopping and school purposes
22. Swanston Street tram routes.

ST. KILDA BEACH - KEW COTHAM RD. ROUTE

SECTION TO SECTION TRIPS

16 HOUR SURVEY PERIOD - PASSENGERS INBOUND PLUS OUTBOUND
 M.M.T.S. SURVEY CARDS 1964

TOTAL ALL PURPOSES	BETWEEN	THE ESPLANADE to MITCHELL STREET	BRIGHTON ROAD to ST. KILDA TOWN HALL	CHAPEL STREET to ALLAN ROAD	ORRONG ROAD to SEBASTOPOL STREET	BALACLAVA ROAD to ARTHUR STREET	ALMA ROAD to MALVERN RLY. STA.	WATTLETREE RD. to COLDBLO ROAD	HIGH STREET to MAYFIELD AVENUE	TOORAK ROAD to BURWOOD ROAD	GLENFERRIE RLY. STA. to COTHAM ROAD	TOTAL
		342	343	364	365	220	366	367 ⁸	369	370	371	
342 THE ESPLANADE to MITCHELL STREET			69	688	230	47	93	46	167	163	70	1573
343 BRIGHTON ROAD to ST. KILDA T. HALL	69			94	102	32	32	48	63	40	47	527
364 CHAPEL STREET to ALLAN ROAD	688	94	188	520	170	48	169	232	180	256	2545	
365 ORRONG ROAD to SEBASTOPOL STREET	230	102	520	21	125	66	224	215	271	109	1883	
220 BALACLAVA RD. to ARTHUR STREET.	47	32	170	125		71	196	395	285	228	1549	
366 ALMA ROAD to MALVERN RLY. STA.	93	32	48	66	71		78	336	548	443	1715	
367 ⁸ WATTLETREE RD. to COLDBLO ROAD	46	48	169	224	196	78	11	312	608	284	1976	
369 HIGH STREET to MAYFIELD AVENUE	167	63	232	215	395	336	312	108	1468	939	4235	
370 TOORAK ROAD to BURWOOD ROAD	163	40	180	271	285	548	608	1468	1131	3507	8201	
371 GLENFERRIE RLY. STA. to COTHAM ROAD	70	47	256	109	228	443	284	939	3507	2958	8841	
TOTAL	1573	527	2545	1883	1549	1715	1976	4235	8201	8841	33045	
c.f. PASSENGER COUNTS "ON'S" PLUS "OFF'S"	2225 [†]	751 [†]	2930	1870	3192 [*]	1892	2065	4501	8996	8698		

† Includes St. Kilda Beach - North Richmond Passengers

* Includes East Brighton - City Passengers

TOTAL NUMBER OF TRIP: 10,134

J. Chau. 11.11.1966.

Handwritten initials

BATMAN AVENUE ROUTES

SECTION TO SECTION TRIPS

16 HOUR SURVEY PERIOD - PASSENGERS INBOUND PLUS OUTBOUND

M.M.T.S. SURVEY CARDS 1964

ROUTE	PRAHRAN				ST. KILDA BEACH		NORTH RICHMOND		WATTLE PARK			BURWOOD							TOTAL					
	RIGHTON ROAD to CKENS STREET	ARLISLE STREET CINTRA AVENUE	ANDENONG ROAD to ARTHUR STREET	DORAK ROAD to RICHMOND RLY. STA.	THE ESPLANADE to MITCHELL STREET	RIGHTON ROAD to T. KILDA T. HALL	WAN STREET to WALTHAM PLACE	BRIDGE ROAD to VICTORIA STREET	LGAR ROAD to WLENDALE STREET	VARRIGAL RD. to HIGHFIELD ROAD	ITTLE VALLEY RD. to BERMANAGH RD.	VARRIGAL ROAD to CAMBERWELL ROAD	MITH ROAD to CHRISTOWELL ROAD	LOWEN STREET to OUTLER STREET	CAMBERWELL JUNCTION	CAMBERWELL DPT. to VALLEY STREET	LENFERRIE RD. to POWER STREET	VANTHORN DPT. to MARY STREET			CHURCH STREET to GREEN STREET	ENNOX STREET to OLYMPIC POOL	STOP 4 to STOP 2	BATMAN AVENUE TERMINUS
MARY STREET.									46	46	48	62	30	20	48	165	130	649	32	201	83	1380	4564	
360 CHURCH ST. to GREEN STREET	38	75	499	237					46	46	48	62	30	20	48	165	130	649	32	201	83	1380	3789	
361 LENNOX STREET to OLYMPIC POOL	7	52	384	265					46	36	42	85	13	25	36	119	120	841	201	21	123	2526	4942	
362 STOP 4 to STOP 2		59	108	58					3	4		8			4			19	83	123		474	943	
363 BATMAN AVENUE TERMINUS	55	336	428	1255					686	850	659	2068	509	418	981	2478	1186	2027	1380	2526	474		18316	
TOTAL	984	3380	2491	6972	827	140	2667	5361	1756	2315	2742	4713	1317	810	5456	4716	3828	4364	3789	4942	943	18316	90029	
c.f. PASSENGER COUNTS "ON'S" PLUS "OFF'S"	957	3665	1078	6900			2838	5311	1888	2662	3184	5189	1371	1207	6037	5481	4320	4739	4305	5264	680	15642	22438	

TOTAL NUMBER OF TRIPS : 46,665

JWS