

# SYDNEY ELECTRIC TRAIN SOCIETY INC.



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## CHOPPER TO THE SUMMIT (CHOPPER SET FAREWELL) TOUR

**SATURDAY 6<sup>TH</sup> MARCH 2021**

On behalf of the committee of Sydney Electric Train Society Inc, We would like to welcome you aboard the *Chopper To The Summit Tour*, for what may be the final tour to farewell the small but iconic Chopper C-set fleet of suburban carriages.

This tour has been in the works for quite some time, with widespread knowledge of TfNSW's plans to withdraw the C-set train fleet before the earlier, larger K-set camshaft fleet. The only unknown issue was the final timeframe for the retirement of the C-set fleet. Originally this trip was planned to be the first of two farewell trips for the C-sets.

We would like to sincerely thank those who have made this tour possible, especially Garry Massoud and Kevin Ellison from Sydney Trains' Special Events Unit for arranging the train and its timetabling,

### COVID19 PRECAUTIONS

To minimise the risk of acquiring or transmitting COVID19 all passengers need to:-

- 1) Sit in the carriages in the seats indicated by the green dots. Family groups are the only exception and are able to sit all together as a group.
- 2) Wear the SETS supplied Australian-made P2 mask at all times while on the train. Masks need to be correctly worn to cover the nose and mouth. Every passenger over 12 years old must wear a mask on the train. The only exception is when you are actually eating or drinking, when they may be temporarily removed. Masks must particularly be worn if you leave your seat for any reason (to visit SETS shop or photostops).
- 3) Use the hand sanitiser located in the carriage vestibules.

*Given we have an 8-car train for around 250 passengers; we encourage everyone to spread out throughout the train to enable social distancing.*

The P2/N95 masks are considered best-practice for protecting against the more virulent COVID-19 strains (e.g. from UK). Our C-set train presents a higher risk for air-borne transmission of the virus, due to the lack of openable windows and the air-conditioning units recirculating the air within each carriage.

Remember that half those infected with the virus typically show no symptoms, but can still transmit the virus to others. Generally people from 50 years old and up have the highest health risks if they acquire the virus but we caution that people in any age group can face serious illness from a COVID19 infection.

So please have a safe day, and think of your own and others safety, in terms of mask wearing and maintaining social distancing.

## SETS SHOP

The onboard shop will be located near the centre of the train. It will have a range of Chips, Chocolates, Muffins, Drinks, and a selection of Sandwiches. We all also have a small range of merchandise available to purchase.

We highly recommend that you use cash, including plenty of change and small notes in the SETS onboard shop, as our change supplies will be limited. We will have EFTPOS available but its use will incur a 2.2% surcharge (what we are charged for each transaction).

We are also running a raffle for the day. Tickets are available at the SETS shop.

## PHOTO STOPS

Photo stops have been arranged that will allow members and guests to record the tour at various locations throughout the day and these will be announced throughout the day over the PA System onboard.

*At the photo stops station toilet facilities are expected to be open. Note being a suburban train there are no toilets on board this train.*

Photo stops are arranged for the following locations:

**West bound:** St Marys (5 minutes), Glenbrook (5 minutes), Springwood (5 minutes), Woodford (5 minutes), Katoomba (5 minutes) and Mount Victoria 26 minutes).

**East bound:** Medlow Bath (5 minutes), Wentworth Falls (5 minutes), Woodford (5 minutes), Valley Heights (5 minutes), Lapstone (5 minutes) Westmead (5 minutes), Fairfield (7 minutes).

**North bound:** Strathfield (6 minutes), Hawkesbury River (6 minutes).

- You **MUST** follow all instructions given by Sydney Trains' Train Manager and staff, as well as SETS Tour Officials.
- You **MUST NOT** trespass beyond the areas designated for passengers on Rail Corp/Sydney Trains property. This means keeping wholly within the yellow line, as well as staying on the platform side of the fences at the ends of station platforms.

We would like to see everybody enjoying themselves on the day. Please be mindful not to get in the way of another photographer, also to keep noise and chatter to a minimum for those who are recording audio and video footage.

## A FEW RULES TO KEEP IN MIND:

Please wear the supplied mask and observe social distancing.

Please respect and follow all instructions from Sydney Trains Train Crew and Train Manager, as well as SETS Tour Officials at all times throughout the day. They will be able to assist you where needed on the tour.

**UNDER NO CIRCUMSTANCES** are patrons to tamper or otherwise interfere with any equipment on the train that may affect the safe operation of the train – **regardless of whether you are Sydney Trains or NSW TrainLink employee or not. Only rostered on Sydney Train Crew will be permitted to travel without fare on the train and travel in the crew compartments.**

**SMOKING IS NOT PERMITTED** anywhere aboard the train, including in the vestibules, or passenger saloons at any time throughout the journey.

You **MUST NOT** stand between the carriages for any reason, throughout the course of the day. These walkways are a thoroughfare only.

We ask you all to **BE CIVIL AND SHOW RESPECT** for each other throughout the day. Bullying, intimidation, harassment and causing general discomfort to other passengers on our tour will not be tolerated.

Please do not leave your rubbish on the train. There will be rubbish bins available to dispose of any unwanted material on the various stations throughout the day.

As noted above, **TOILETS** have been requested to be open at most of our photo stops for your comfort. Due to the limited timing of each photo stop, we ask passengers to either take photos or use the toilet on the station as required but not both.

We thank you for choosing to travel with us today and trust that you have a great day out with SETS. We look forward to seeing you again on another SETS tour.

*The SETS Committee,  
Sydney Electric Train Society Inc.  
Website: [www.sets.org.au](http://www.sets.org.au)*

## **HISTORICAL NOTES ON CHOPPER C SETS**

Chopper sets originally entered service as K sets from July 1986 until September 1987. They were an extension to the contract for 100 suburban K set cars and initially numbered just forty carriages, with a further sixteen carriages added to the contract in 1986. They were targeted as sets K 40 – K 54 and the K prefix was changed to “C” in 1989, with the set number retained (C 40 – C 54) before being re numbered C 1 onwards a year or two later.

These cars were the forerunner to Tangara and saw a major shift in technological change with in New South Wales Railways, whose engineers were often seen as conservative. Development began in early 1984 of a new technologically advanced “Chopper Control” train that would see the replacement of the red single deck suburban trains, some of which were in their sixth decade of operation.

To assist NSW railway engineers to familiarize themselves with the operation and maintenance of Chopper equipment, an extension to the K set order was issued for these additional 40 cars to be manufactured with the more advanced equipment. At the time of this extension being issued, New South Wales Railways were still ordering trains with older Camshaft technology on special order, which had been otherwise discontinued by the railway electrical equipment manufacturers.

Chopper control introduces a maintenance free solid-state stepless control of acceleration, greater co-adhesion of wheels, lower power consumption through a return of power back into the system using an improved regenerative brake, quicker response and higher reliability of traction equipment whilst providing a smooth and comfortable travelling experience.

Railway manufacturer A Goninan & Co in Broadmeadow, Newcastle put together a team of their best engineers to develop a conceptual design for new carriages to be proposed to State Rail Authority of NSW. Two carriages were built to be used specifically as mock ups to demonstrate various styles and options and these were inspected by SRA management and discussed in great detail at a number of

meetings. One was numbered C 3561 (C set mock up) and the other was numbered C 3581 (Tangara mock up). Both of these cars were scrapped in 1990.

As a part of the development of a new train, State Rail Authority of NSW were also investigating the latest international best practice in vandal proof upholstery for its train seats. The new upholstery was specifically designed to resist cutting by sharp instruments such as knives and razors and if a cut is made, it featured a self-healing character where the cut would be hard to see. The material used was also fire resistant, withstanding cigarette burns and is designed to be easy to clean. These seats were made by ETS Compin SA in France and were installed into both prototype cars for evaluation and were later adopted into the C set Chopper fleet.

A Goninan & Co engineers did a complete makeover of the carriage interior and passenger interface systems on these cars, which became firsts for the State Rail Authority of NSW. These included including full air conditioning, passenger actuated doors, resulting in doors only opening when required, door chimes for the visually impaired, flashing red arrows above the interior and exterior of the carriage platform doors to indicate the door direction of travel, fixed vandal resistant seating, an off white interior livery which is vastly brighter than the C set fleet's predecessors and glass partitions in the vestibule to improve safety and visibility, removing hiding spots where anti-social behaviour could occur.

As part of the design make over, the end carriages were also fitted with a large moulded fibreglass front to make them look similar to the Double Deck Interurban V sets that were entering service at the same time. These cars were painted in the State Rail Authority livery of that era, featuring white, red and orange stripes and were the first suburban carriages with fixed one-piece tinted glass windows.

To improve efficiency in the operation and maintenance of trains, these cars were the first to have fault recording equipment on them. A fault monitor board was installed in the Drivers' Compartment which display any faults in the performance of the key components on the carriages. At the press of a button, the Driver can record the fault onto a microprocessor which can then be downloaded and acted upon by maintenance staff. Having these fault monitoring boards accelerated fault finding and rectification and this resulted in the reduction of further equipment damage and the benefit of greater utilisation of these carriages with less maintenance down-time.

The C set fleet represents the beginning of a shift in policy where the responsibility for train design was developed by private industry instead of internally by State Rail Authority's Mechanical Branch. Although both Mechanical Branch and Goninan engineers worked together on developing this train, State Rail Authority demonstrated more openness to trying new concepts with this train, which would increase passenger comfort, provide value for money with increased operational efficiencies and enhance in-service reliability.

The 56 carriage fleet enabled Mechanical Branch staff and maintenance employees to gain familiarity with how microprocessor controlled trains work. These cars were used to iron the bugs out and make improvements in the lead up to the acquisition of Tangara fleet. They were also a valuable educational tool for train crew in how to operate trains with this technology.

On 23<sup>rd</sup> December 1987, the last Chopper car delivered (which turned out to be the last fluted stainless steel suburban carriage built) C 3608, lead the official opening train for the duplication of the rail line from Riverwood to East Hills, the new East Hills station and the extension of the rail line from East Hills to Glenfield, which featured a new railways station at Holsworthy with Premier Barry Unsworth leading the celebration event.

In 1989, one power car, C 3596, was repainted to have thick blue and yellow bands across the lower front and a new logo in the top right corner of the fibreglass front for the launch of the City Rail brand which

came into being from October of that year.

In 1991, the sets were reconfigured into six car trains and the original seat fabric was covered over with blue vinyl by contractors and this work was done out in the open at Eveleigh Carriage Works, with the set protected by a security guard for the full week that it took to work on each set.

In 1995, a major mid – life refurbishment of all of Sydney’s Double Deck Suburban and Interurban fleet was carried out in preparation for the 2000 Olympics. The C sets were included in the third stage of the contract which was conducted by A Goninan & Co. As the Chopper sets were a little over ten years old at the time, they did not receive the full scope of works that S set and K set carriages received. Windows and seats were only replaced where they have been damaged or etched. It was in this in this refurbishment in which the flashing door arrows were removed and the area where they were mounted was plated over. The cars were externally repainted from their original Candy to Marigold and Grey with large L7 logos at the number one ends of the cars and blue external car numbers. Destination indicators were also fitted to the fronts of the power cars and the headlights were relocated to a higher position as a part of this work.

In 2000, each set progressively returned to A Goninan & Co to receive new locking door motor equipment as well as new Public Address system upgrades. In 2002, a new facility opened at Maintrain where carriages could be fully refurbished or aesthetically improved as a part of their Major Overhauls. The first Chopper set to be treated also received the fully painted yellow doors – a safety initiative to give contrasting colour for passengers with visual impairment. It was at Maintrain that the livery on the fibreglass front was slightly altered to have a darker shade of grey and sunflower yellow applied. Door Open Traction Interlock, External Door Open Indicator Lights, digitized door warning devices, a data logger, a small data logger window and vigilance control have all been added since 2004. There have been some modifications to the braking on the trailer cars done as well.

The four cars on set C 2 were specially modified with new additional equipment in 2017 to trial Automatic Train Protection, which is to be rolled out on the newer car fleets and across the electrified network. The set saw very little use and was stripped of parts in 2020.

In February 2020, C 3589 on set C 4 was damaged in a fire in an electrical cabinet in the crew compartment and the carriage and T 4260 were retired from service. A week later C 3594 on set C 10 experienced a seized axle at Central Station and it too was retired upon return to Flemington MC. C 3594 and T 4255 were eventually coupled with T 4260 and C 3589 and set number C 4 abolished. The two good halves of C 4 and C 10 were amalgamated and targeted as C 10. These were later replaced by brand new sets B 25 and B 26 in late 2020.

After 35 years of operation, the Chopper sets are now being replaced by brand new Series 2 Waratah B sets with sets C 12 and 13 retired on 23<sup>rd</sup> December 2020. After having air conditioning modules swapped with those on K sets throughout early February at Mortdale Maintenance Centre, the remainder of the fleet was retired in late February 2021 with the last four sets operating their last revenue services on the evening of Friday 26<sup>th</sup> February 2021. C 1 and C 5 operated on 27 run that evening and at 9:25pm, sets C 7 and C 10 were replaced by set A 57 after terminating on run number 90 – W at Liverpool station. This last eight car set operated empty cars to Flemington MC and was then stabled into storage.

Almost all of the Chopper sets are being stripped for parts at Flemington MC and Maintrain. SETS has previously made a written submission to retain one set of four cars for preservation, but at this late stage we have not yet received any confirmation that a set of Chopper cars will be preserved for heritage purposes by SETS, as requested. One eight car set is being held on standby until mid to late April 2021, until more new B sets are delivered and deployed to service.

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MMcG&HB

# Special Train Notice 0982-2021



SATURDAY MARCH 06, 2021

TRAK2 Identification Number/s: ST075540

Train Planning

Phone: 21766 / 20641

Email: [Service Planning STN Feedback](#)

Author: SL / SA

Date of issue: 22/02/2021

## TIMETABLE FOR BLUE MOUNTAINS C SET CHARTER TRAIN FMC – MOUNT VICTORIA – FAIRFIELD – HAWKESBURY RIVER

TO BE READ IN CONJUNCTION WITH STN 0384-2021

### TRAIN ARRANGEMENTS

SATURDAY, MARCH 06

#### TIMETABLE FOR EMPTY CARS

**880A** (.....S) (8C) (Additional Empty cars) will Start and depart Flemington Car Sidings 0745 hours, **DEPT**, pass Flemington Car Sidings Junction 0747, **XM**, Homebush 0750, Strathfield 0752, Ashfield 0756, Macdonaldtown 0801, Illawarra Junction 0802, Redfern 0803, Wells Street 0804, arrive Sydney Terminal 0806 hours, forms **880B** 1052 hours.

**880B** (.....S) (8C) (Additional Empty cars) will depart Sydney Terminal 1052 hours, pass Wells Street 1054 **M**, Redfern 1056, Illawarra Junction 1057, Macdonaldtown 1058, Ashfield 1103, arrive Strathfield 1107 hours, forms **880C** 1112 hours.

#### TIMETABLE FOR CHARTER TRAIN STRATHFIELD – MT VICTORIA – FAIRFIELD – STRATHFIELD – HAWKESBURY RIVER - STRATHFIELD

**880C** (.....S) (8C) (Special train) will depart Strathfield 1112 hours, pass Homebush 1113 **XS**, Flemington Car Sidings Junction 1116, Rookwood 1117, Lidcombe 1119, Auburn East Junction 1121, Auburn 1122, Clyde 1125, Granville 1126 **WM**, Granville Junction 1127, **M**, Parramatta 1131, Parramatta West Turnback 1132 **XS**, Westmead 1133, Seven Hills 1138, Blacktown Junction 1139, Blacktown 1140, Blacktown West 1141, St Marys arrive 1148, depart 1153, pass Penrith 1158, Penrith Turnback 1159, Emu Plains 1201, Glenbrook arrive 1211, depart 1216, pass Valley Heights 1226, Springwood arrive 1229, depart 1234, Woodford arrive 1246, depart 1250, pass Lawson 1256, Wentworth Falls 1303, Katoomba arrive 1312, depart 1317, pass Katoomba Down Turnback 1317, **XUM**, arrive Mount Victoria 1334 hours, forms **880D** 1400 hours.

**880D** (.....S) (8C) (Special train) will depart **UM** Mount Victoria 1400 hours, Medlow Bath arrive 1411, depart 1416, pass Katoomba 1421, Katoomba Up Turnback 1423, Wentworth Falls arrive 1430, depart 1435, pass Lawson 1441, Lawson East Turnback 1441, Woodford arrive 1447, depart 1452, pass Springwood 1503, Valley Heights arrive 1505, depart 1510, pass Glenbrook 1519, Lapstone arrive 1523, depart 1528, pass Emu Plains 1533, Penrith 1535, Penrith Up Turnback 1536, **S**, St Marys 1541, Blacktown West 1548, Blacktown 1549, Blacktown Junction 1549, Seven Hills 1550, Westmead arrive 1555, depart 1600 **XM**, pass Parramatta West Turnback 1602, Parramatta 1602 **WM**, Parramatta East Turnback 1602, **YL**, Y-link 1605 **S**, Merrylands 1607, arrive Fairfield 1613 hours, forms **880E** 1620 hours.

**880E** (.....S) (8C) (Special train) will depart Fairfield 1620 hours, pass Merrylands 1625, Granville Junction 1627 **S**, Granville 1628, Clyde 1629, Auburn 1631, Auburn East Junction 1632, Lidcombe 1634, Rookwood 1635, Flemington Car Sidings Junction 1636, **XM**, Homebush 1639, arrive Strathfield 1640 hours, forms **880F** 1646 hours.

**880F** (.....S) (8C) (Special train) will depart **M** Strathfield 1646 hours, **NM**, pass North Strathfield Junction 1648, Concord West 1650, Concord West Junction 1650, Rhodes 1652, West Ryde 1655 **M**, Eastwood 1658, Epping 1700, Epping North Turnback 1701, Cheltenham South Turnback 1702, Thornleigh South 1707, Thornleigh 1708, **R**, Hornsby 1712, Hornsby Junction 1712, Hornsby Down Yard 1713, Hornsby Car Sidings Junction 1713, Hornsby 2 Down Turnback 1714 **XDM**, **R**, Berowra 1722 **XM**, Cowan arrive 1727, depart 1730, pass Boronia 1733, Hawkesbury Crossovers South 1737 **XUM**, arrive Hawkesbury River 1739 hours, forms **880G** 1745 hours.

**880G** (.....S) (8C) (Special train) will depart **UM** Hawkesbury River 1745 hours, pass Hawkesbury Crossovers South 1747, Boronia 1752, Cowan 1756, Berowra 1800, Berowra South Turnback 1800, Hornsby Car Sidings Junction 1809, Hornsby Down Yard 1810, Hornsby Junction 1810, Hornsby arrive 1811, depart 1815, **R**, Thornleigh arrive 1820, depart 1827, pass Pennant Hills North 1828 **M**, Epping North Turnback 1833, Epping 1835 **S**, Eastwood 1837, West Ryde 1839, Rhodes 1842, Rhodes South Turnback 1842, Concord West Junction 1843, Concord West 1844, North Strathfield Junction 1846 **NM**, **M**, arrive Strathfield 1849 hours, forms **880H** 1857 hours.

#### TIMETABLE FOR EMPTY CARS STRATHFIELD – CLYDE – FMC

**880H** (.....S) (8C) (Additional Empty cars) will depart **M** Strathfield 1857 hours, pass Homebush 1858 **XS**, Flemington Car Sidings Junction 1902, Rookwood 1903, Lidcombe depart 1904 **L**, **XM**, pass Auburn East Junction 1907, Auburn 1908, Clyde East Junction 1909, arrive Clyde 1909 hours, forms **880J** 1915 hours.

**880J** (.....S) (8C) (Additional Empty cars) will depart **M** Clyde 1915 hours, pass Clyde East Junction 1915 **UM**, Clyde Up Yard TB 1917, Auburn 1917, Auburn East Junction 1918, Lidcombe arrive 1919, depart 1920 **L**, pass Rookwood 1921, **NECK**, arrive Flemington Car Sidings Junction 1923 hours, forms **880K** 1930 hours.

**880K** (.....S) (8C) (Additional Empty cars) will depart **NECK** Flemington Car Sidings Junction 1930 hours, arrive Flemington Car Sidings 1932 hours, **stable**.