

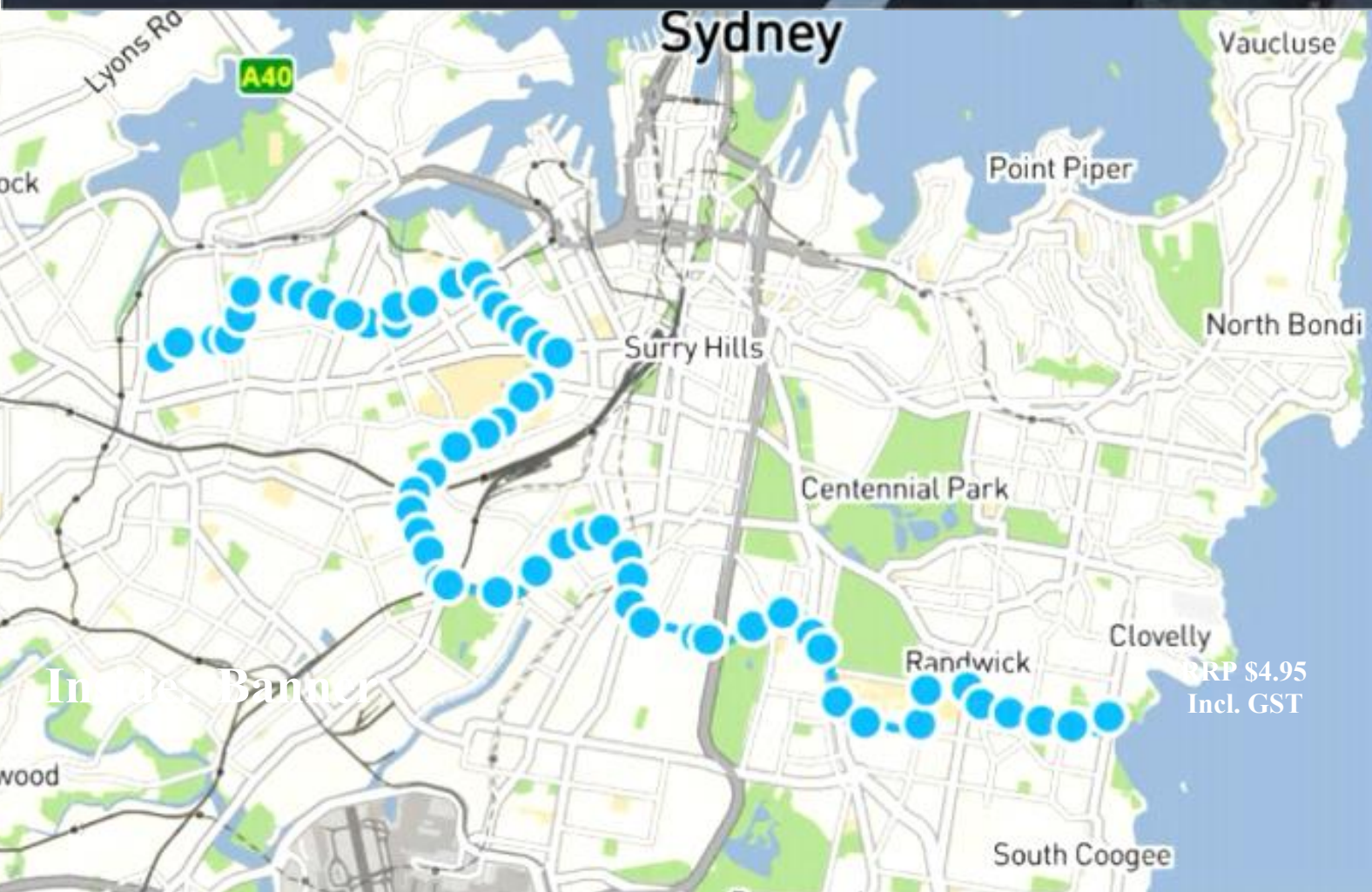
The Times

August 2018

A journal of transport timetable history and analysis



Is the 370 the worst bus in Sydney?



The Times

A journal of the Australian Timetable Association Inc. (A0043673H)

Print Publication No: 349069/00070, ISSN 0813-6327

August 2018

Vol 34 No. 08, Issue No. 414

The Times

welcomes all contributions. Our Authors' Guide is available on our web-site at www.timetable.org.au

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In her story starting on [page 13](#), Katie Bell says: *Here is a picture of three 370 buses together. For a bus that is meant to run every twenty minutes, you shouldn't expect to see this. At least one of them must be twenty minutes late and/or hilariously early.* Katie has set up a website at <https://bus-shaming.com/>, where you can check on the recent daily performance of any bus route in NSW.

Is this the world's most regular timetable?

ALEX SIMS, with comments by GEOFF LAMBERT and SEICHO MATSUMOTO

While watching 'Japan Railway Journal - Enoshima Electric Railway: *A Good Old 10km Ride*' (episode 48 of NHK's "Japan Railway Journal", broadcast on March 2, 2018), I was struck by the noted simplicity of the Enoden line that runs between Fujisawa and Kamakura south of Tokyo. This line is heavily used by tourists and despite its short length, it is a private railway line returning a profit.

This shows regular 12 minute services from the Kamakura end from 6:24 to 9:24pm every day. Likewise the Fujisawa timetable is almost identical, which is no doubt helped by the 34 minute journey time giving 2 minutes to change direction at each end. A typical station platform timetable display is shown at right. Is there a simpler published timetable for a railway with this frequency?

The simplicity comes at a cost because there is often crowding at peak times and the single track gives limited opportunity for adding services. The line issues a 600 yen all day ticket, popular with tourists, that also gives 5-10% discount at attractions along the line.

Recently, I read about all the changes made to the terminal stations to deal with the crush loads on stations and rolling stock on weekends, but no longer have access to this information. In the video, most of the episode deals with strategies to support and maintain the enterprise. This line has experienced growth between 2011 to 2016 from 15 to 18 million journeys annually, of which 13 million are tourists. This line has turned a profit for the last 16 years—this is rare for a small private railway company, particularly with a line of only 10km. The timetable has a simple layout with all relevant passenger information available in Japanese, English, Chinese and Korean to make it easy for passengers. To increase the historic appeal of the line, rolling stock from the 1960s is maintained and used in

regular service.

The line is single track with buildings and houses built right up to the track on both sides, indeed it has the closest proximity of houses of any line in Japan (photo, bottom right on page 6). The line has a single 200m hand dug brick-lined tunnel built in 1906. In one section, when the land was sold to the railway company, it was sold on the

basis that residents (and residents only!) would be able to enter the track to access their homes. There are lights installed by the track to warn residents of approaching trains. Curves are regularly greased to reduce noise in residential areas. Again, due to the residential proximity, railway staff regularly prune residents' gardens back to allow clearance, including an



KAMAKURA

TIMETABLE For Fujisawa

5	47	59			
6	11	24	36	48	
7	0	12	24	36	48
8					

Every 12 minutes in this time period

19					
20	0	12	24	36	48
21	0	12	24	36(E)	48
22	2E	16	41		
23	3	32E	55I		

0

E = For Enoshima G = For Gokurakuji I = For Inamuragasaki

Fares and times from Kamakura Station

KAMAKURA	WADAZUKA	YUJAHAMA	HASE	GOKURAKUJI	INAMURAGASAKI	SHICHIRIGAHAMA	KAMAKURAKOKOMAE	KOSHIGOE	ENOSHIMA	SHONAN-KAIGAN-KOEN	KUGENUJIMA	YANAGIKOJI	ISHIGAMI	FUJISAWA
(min)	34	32	31	29	27	23	19	16	14	10	8	5	3	2
Fares (adult) (yen)	190	190	190	220	220	220	260	260	260	300	300	300	300	300
Fares (children) (yen)	100	100	100	110	110	110	130	130	130	150	150	150	150	150



FUJISAWA

TIMETABLE For Kamakura

5	36				
6	0	12	24	36	48
7	0	12	24	36	48
8					

Every 12 minutes in this time period

19					
20	0	12	24	36	48
21	0	12	24	37	49
22	2	26	52		
23	18	49			

0

Fares and times from Fujisawa Station

FUJISAWA	ISHIGAMI	YANAGIKOJI	KUGENUJIMA	SHONAN-KAIGAN-KOEN	ENOSHIMA	KOSHIGOE	KAMAKURAKOKOMAE	SHICHIRIGAHAMA	INAMURAGASAKI	GOKURAKUJI	HASE	YUJAHAMA	WADAZUKA	KAMAKURA
(min)	2	3	5	8	10	14	16	19	23	27	29	31	32	34
Fares (adult) (yen)	190	190	190	220	220	220	260	260	260	300	300	300	300	300
Fares (children) (yen)	100	100	100	110	110	110	130	130	130	150	150	150	150	150



Enoshima Electric Railway Co., Ltd.

allowance for wind or the weight of snow, several times a year, leaving neatly hedged trees matching the loading gauge.

There is a 500m section where the train runs along the road which was originally reserved track, but later paved over to make a (shared) road to cater for motor vehicle demand. This section includes the sharpest (28m radius S bend) curve on any 1067mm track in Japan (see picture on page 6, lower left). There are 93 curves on the line, necessitating shorter rails and more rail joints. Maintenance staff inspect each joint three times a week, due to the stress on the joints.

One level crossing is extremely popular with Chinese language tourists, following from its popularity with tourists from Taiwan seeking the site of a scene from the opening of a popular TV anime of a high school basketball manga "[Slam Dunk](#)". As a promotional campaign, used day trip tickets from the Enoshima railway can be redeemed for a daytrip on the [Pingxi Line, Taiwan](#) in 2013-2014 (and *vice-versa*).

This spot is part of the seaside section of the line and requires extra inspections of electrical equipment due to the proximity of the sea. The entire overhead is inspected by a tower ladder (no special vehicle), this inspection taking three months. The sea also means the sea-side of rolling stock has to be cleaned more carefully.

Notes by the Editor: The Enoshima line is essentially a tramway, but (probably because of the complexities of 19th century legislation) has always been classified as a railway.

The Enoshima line is famous in Japan for another reason—it played a central role in Seicho [Matsumoto](#)'s (and Japan's first) murder mystery, *Ten to Sen*—known to readers of The Times issue of [December 2009](#), as "*Murder by Timetable Collector*" and a female collector at that!

According to the English language Wikipedia, the Enoshima Electric Railway or Enoden is a private railway in Japan which connects Kamakura Station in Kamakura with Fujisawa Station in Fujisawa, Kanagawa. Stations *en route* include Hase, the

stop closest to Kōtoku-in, the temple with the colossal outdoor statue of Amida Buddha. The railway is fully owned by the Odakyu Group of companies. The original Enoshima Electric Railway opened the line on 1 September 1902. The company subsequently went through a series of ownership changes: Yokohama Electric Railway Co. in 1911, Tokyo Electric Power Co. in 1921, (second) Enoshima Electric Railway Co. in 1926, Tokyu Corporation in 1938, Enoshima Kamakura Tourist Co. in 1949, and Odakyu Electric Railway Co. in 1953. It was during this period (early 1957) that characters in *Ten to Sen* travelled along the line. The (third) Enoshima Electric Railway Co. was formed on 1 September 1981 as a subsidiary of Odakyu.

[KAMAKURA](#)

Kamakura opened on 16 June 1889 as a station at 53.9 km on the Yokosuka Line, a spur line from Ōfuna on the Japanese Government Railways (JGR) Tokaido Main Line. The line was built to serve the Yokosuka Naval Arsenal and related Imperial Japanese Navy facilities at Yokosuka. This line was renamed the Yokosuka Line in October 1909. The terminus of the Enoshima Electric Railway was relocated to Kamakura Station on 1 March 1949. One of the murderers, Yasuda caught the Tokyo to Yokosuka train to Kamakura every Monday, including on the fateful Monday of 14 January, 1957. Detective Mihara made a return journey through this station to Gokuraku-ji on the Enoshima line to interview Yasuda's wife Ryoko (the murderess timetable collector) early on in his investigation.

[GOKURAKU-JI](#)

[Gokuraku-ji](#) Station on the Enoshima Line, opened on 1 April 1904. In 1997, it was selected as one of the "100 Top Stations in the Kantō Region" by a selection committee commissioned by the Japanese Ministry of Transportation. The station has a single side platform serving one track for bi-directional traffic. The station is staffed. This was the station closest to the house of the murderers, where Detective Mihara went during his investigation. The station was unchanged when the *Ten to Sen* TV

movie was made. Many international tourists are said to visit this station because of its association with the novel.

[FUJISAWA](#)

What is now the JR East station opened on 11 July 1887. The adjacent Enoshima Electric Railway station opened on 1 September 1902, and the Odakyu station opened on April 1, 1929. With the dissolution and privatization of JNR on 1 April 1987, the station came under the operational control of JR East.

Timetables in 1957

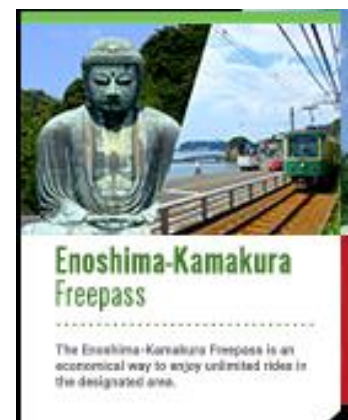
In *Ten to Sen*, detective Mihara caught a [Yokosuka line](#) train out of Tokyo in the early afternoon, arriving at Kamakura an hour later, and changed to a Fujisawa line train (full of rowdy schoolgirls) and arrived at Gokuraku-ji 6 minutes later. After questioning Yasuda's wife (who had TB), he used the train again to visit her doctor at Daibutsu-mae, a 4-minute journey, where he learned that Mrs Yasuda was a timetable collector who studied timetables from her sickbed. Mihara arrived back at Tokyo Central at "about 20:00".

The travel times in the story are pretty much unchanged today. These are essentially unalterable because of the curved nature of the line. However, the company is seeking ways to cater for its prodigious traffic by tinkering with the timetable and/or altering the crossing loops so that more trains can be crammed onto the line.

Timetables [here](#) and [here](#).

Comment on this article – [Letter to Editor](#), [Facebook](#)

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GOKURAKU-JI station as it was at the time of "Ten to Sen" and in a scene from the 2010 video/movie

1/25 (祝日)		平日 片側車券のみありくろく 大人600円 小児300円										3456 - 24 - 2715 http://www.enoden.co.jp [江ノ島電鉄]															
...	1536	600	2124	2137	2149	2202	2226	2252	2318	2349	300	300	524	546	610	622	この間	2159	...	2224	...	2248	2314	2358	...	...
...	1537	601	2125	2138	2150	2203	2227	2253	2319	2350	300	300	522	544	606	620	鎌倉発	2157	...	2222	...	2246	2312	2356	...	...
...	1539	603	2127	2140	2152	2205	2229	2255	2321	2352	1.2	190	300	521	542	606	618	藤沢行	2155	...	2220	...	2244	2311	2354	...	...
...	1541	605	2129	2142	2154	2207	2231	2257	2323	2354	1.9	190	300	519	541	605	617	...	2154	...	2219	...	2243	2309	2353	...	...
...	1544	608	2132	2145	2157	2210	2234	2300	2326	2356	2.7	220	300	516	537	601	613	...	2150	...	2216	...	2240	2306	2350	...	...
510	523	547	611	2135	2148	2201	2213	2238	2304	2329	3.3	220	260	515	536	600	612	559, 611	2150	...	2216	...	2240	2306	2350	...	...
512	525	549	613	2137	2151	2203	2215	2240	2306	2332	3.9	220	260	512	535	600	607	624~	2149	2200	2214	2225	2258	2305	2328	2351	...
514	527	551	615	2139	2153	2205	2217	2243	2308	2334	4.7	260	260	530	554	605	2112の	2144	2156	2203	2220	2233	2258	2322	2353	...	...
517	531	555	619	2143	2156	2209	2221	2246	2311	2337	5.6	260	260	526	550	602	毎時	2140	2152	2204	2216	2229	2255	2319	2347	...	...
522	536	600	624	2148	2202	2215	2228	2254	2318	2343	5.8	260	260	523	547	559	00	2137	2149	2201	2213	2226	2252	2316	2344	005	...
524	536	602	626	2150	2204	2215	2228	2254	2318	2343	7.6	300	300	...	...	...	12	2131	2143	2155	2209	2223	2248	2311	2340	002	...
526	541	605	629	2153	2207	...	2231	2256	2320	2348	8.3	300	300	...	...	...	24	2129	2141	2153	2207	2221	2246	2309	2338	003	...
528	542	606	630	2154	2208	...	2232	2258	2322	2349	8.9	300	300	...	...	...	36	2127	2139	2151	2205	2219	2244	2307	2335	2358	...
529	544	608	632	2156	2210	...	2234	2259	2323	2351	9.2	300	300	...	...	...	48	2126	2138	2150	2204	2218	2243	2305	2334	2357	...
531	546	610	634	2158	2212	...	2236	2301	2325	2353	10.0	300	300	...	...	...	分発	2124	2136	2148	2202	2216	2241	2303	2332	2355	...

The full service, as shown on Table 808A of the JTB "Big Book" public timetable of March 2017



The great timetable fiasco: *how the media & Govia saw it*

Britain is still part of the European Union, despite the Brexit vote, and must therefore continue to adhere to the agreements and [legislation](#) of the European Parliament. One of these is that every member country must issue a full set of Working Timetables in mid-December of each year after a year's worth of consultation between member states. Britain adheres to this, but also goes one better by issuing a [full set](#) of WTTs in May of each year. This is a very old tradition predating the European Union by many decades.

This year there was untold trouble. Network Rail, which compiles the timetable began to have forebodings early in 2018.

[The Independent](#) sent up the first red distress rocket on 23 February —the day that advance booking for trains would normally open.

Timetable delays to jeopardise journeys from May onwards

Rail passengers who like to plan and book train journeys well ahead face unwelcome surprises for the remainder of the year: they may pay more than they need, or discover that their scheduled service is cancelled.

Network Rail normally publishes its schedules for engineering work more than 12 weeks ahead, allowing train operators to finalise their timetables and start selling Advance tickets. Passengers who book early normally get the lowest fares. Some train operators aim to sell tickets up to 24 weeks in advance [see July 2018 *The Times*].

But for six months from 20 May, the infrastructure provider is reducing the amount of notice it gives to train operators, meaning timetables will be published later than normal. While Network Rail aims to give six weeks' warning, some schedules, particularly for weekends, may only be known less than four weeks ahead.

Disruption is particularly prevalent in north-west England, where electrification work between Manchester and Preston is behind schedule. The project is over a year

late, with delays blamed on uncharted mine workings.

New [Thameslink](#) train services on the East Coast main line from Peterborough and Cambridge via central London are also being slotted into one of the busiest routes in Europe.

Timetables change in May and December each year, usually with a modest number of amendments. But the May 2018 timetable change is said to be “the largest in living memory”, with four million services rescheduled – seven times the usual number of alterations.

Jo Kaye, managing director of System Operator for [Network Rail](#), said: “This decision hasn't been taken lightly, but there is significant change required in the timetable resulting from unprecedented investment, combined with short-term changes to projects and plans, meaning that our timetable planning resource is at more than full capacity.”

Train tickets for 20 May onwards would normally go on sale from Sunday 25 February, and many will be available as usual. The usual window for Advance tickets on some routes will be reduced, meaning travellers could pay more than they expect. Alternatively, they could find that a train they book in good faith is either not running or disrupted, with a rail replacement bus service operating.

The announcement is likely to benefit coach operators such as Megabus, National Express and Sn-Ap.

The [Rail Delivery Group](#) (RDG), representing Network Rail and the train operators, said: “While most timetables and tickets will still be available at the usual 12 weeks before travel, these will not be absolutely confirmed until closer to the date – usually six weeks beforehand – so may be subject to more short notice changes than normal.”

The RDG said only two per cent of passengers will be affected; the remainder use season tickets, walk-on fares or book less than six weeks before travel.

But it concedes “some passengers will be affected and the industry is working together to ensure that nobody loses out”. In cases where the normal 12-week booking horizon cannot be met, train operators have agreed to offer the same range of discounted tickets – starting at the usual lowest fares. If trains are cancelled, passengers who decide not to travel will be given a full refund. Travellers who find that they have overpaid, because cheaper Advance tickets later go on sale, are being told to re-book at the lower fare and then request a fee-free refund on their original ticket.

The regulator, the [Office for Rail and Road \(ORR\)](#), said it was “concerned about the impact” on passengers and freight customers. The ORR's chief executive, Joanna Whittington, said: “We have already called in Network Rail to explain the arrangements it has put in place to minimise the impact on passengers and freight customers. We will monitor its progress against the proposed recovery plan.

“We will want to ensure that any lessons learned from this are properly addressed for the future.”

Anthony Smith, chief executive of the independent transport watchdog, Transport Focus, said: “Passengers have been badly let down and will be deeply frustrated that they can't make plans with certainty. They are also at risk of paying more.”

The organisation wants train operators to warn prospective passengers that the timetable may still change, and contact those who have bought in advance to let them know if train times change.

On 25 April, Tom Edwards reported on the [BBC](#). **Biggest timetable change ever—Expect teething problems.**

On 20 May a transport earthquake will

rumble through the South East, affecting half a million commuters.

Every train time on the Great Northern, Southern, Thameslink and Gatwick Express is being changed. [see box—>]. There will also be a knock-on effect on Southeastern services. Existing timetables are being shredded and redrawn. The reason? More frequent services and space for 40,000 more passengers as part of the Thameslink programme. If you don't understand how big a deal this is for commuters, you don't understand how entwined commuters' lives are with train times.

Govia Thameslink (GTR) are on a management contract by the Department for Transport (DfT) to implement the new timetable. It will mean big changes from Cambridge and Peterborough to Brighton and Southampton, but also changes to most trains in south London. The challenge is that train times are deeply embedded into commuters' routines and lives and so even a slight change can have a knock-on effect. Even moving a train by a few minutes means childcare might have to be moved or office start times shifted.

It is no surprise there has already been backlash from towns like Harpenden, which has lost services between 07:30 and 08:30. The operator has already warned there may be teething problems in the first few weeks.

Commuters from further afield have also discovered much-cherished direct services will now stop elsewhere, so they face longer journeys.

GTR admits there will be winners and losers, but in the main most commuters will have a better service.

What they have also tried to do is improve the spacing on services, so you will see more regular gaps between trains.

The problem is transport is very subjective and if you've lost your regular service - which your life revolves around - you are going to need some serious convincing.

It happened, as reported by Miles Brignall of the Guardian on the first Monday of the new timetable.

Outcry over mass train

“Every train time on the Great Northern, Southern, Thameslink and Gatwick Express is being changed”. These services are all franchises run by Govia, of which Wikipedia says: Govia is a transport company based in the United Kingdom. It was formed in November 1996 as a joint venture between Go-Ahead Group (65%) and Keolis (35%) to bid for rail franchises during the privatisation of British Rail. Established in 1986, the Go-Ahead Group has its roots in North East England where it was formed as Go-Ahead Northern during the de-regulation of the bus industry. Keolis is the biggest private operator of public transport in France and a major worldwide operator of transport services. As part of the privatisation of British Rail, the Thames Trains franchise was awarded to Victory Rail Holdings, a company owned by Go-Ahead (65%) and some ex British Rail managers (35%), with operations commencing on 13 October 1996. Go-Ahead bought the remaining shares it did not own in June 1998. Go-Ahead formed a joint venture with Keolis and were awarded the Thameslink franchise with operations commencing on 2 March 1997. Upon being retendered, the franchise passed to First Capital Connect on 1 April 2006. Govia also unsuccessfully bid for the Regional Railways North West and ScotRail franchises. In August 2001, Govia commenced operating the South Central franchise adopting the name Southern. In April 2006, Govia commenced operating the Southeastern franchise. In November 2007, Govia commenced operating the London Midland franchise and in May 2014, the Govia Thameslink Railway franchise. Govia unsuccessfully bid for the Northern franchise in 2015. Govia currently operate two franchises:

1. **Govia Thameslink Railway** operating the **Thameslink, Southern and Great Northern** franchise under the Southern, Gatwick Express and Thameslink and Great Northern brands from East and West Sussex, Surrey and parts of Kent and Hampshire, along with lines from Bedford, Peterborough and Kings Lynn (via Cambridge) to London (expires September 2021).
2. **Southeastern** from Kent and East Sussex to London (expires December 2018).

cancellations as new Thameslink timetable begins

Rail passengers trying to use the upgraded £7bn Thameslink service on Sunday were met with mass train cancellations and no information about why services were not running.

A huge publicity drive backed Sunday's biggest ever timetable change but, despite the big build-up, passengers trying to get into and around London found few of the promised new services were actually running. For more than a year, Govia Trains has been working on an ambitious plan to merge its Thameslink, Southern and Great Northern train operations and introduce a raft of promised improvements.

South-east London was particularly badly hit in the morning, with passengers facing mass cancellations and long waits. Throughout the day, between half and a third of timetabled trains across the new enlarged network were being cancelled.

While the train company had warned the changes would result in disruption, passengers were taken aback at the level of cancellations and were furious at the lack of information.

“It takes a very special rail company to

screw up its new timetable as soon as it starts. Trains cancelled and a reduced service already announced for tomorrow. Well done the @TLRailUK buffoons,” was one sentiment on Twitter. Others described it as a “farce”. Sunday's disruption does not bode well for Monday, when commuters would really put the new system to the test, commenters warned.

The biggest change to the London commuting network ever seen allows trains to run from Cambridge and Peterborough through London to Gatwick Airport and on to Brighton for the first time, along with a number of other services. The new Govia operation accounts for around a quarter of all UK rail services.

Charles Horton, Govia Trains' chief executive, said last week: “The introduction of the new timetables is a major milestone in the delivery of RailPlan 20/20, our programme to modernise rail services, taking advantage of the new infrastructure and trains provided by the government's £7bn Thameslink programme.” He said passengers would see huge benefits from changes that provide for an extra 50,000 passengers in the capital's morning peak, with Govia running 400 more

trains a day.

However, the new timetable has been criticised for adding to journey times for many. In some towns, rail users' groups have described the new schedules as a disaster, as their service has been hugely downgraded, particularly during the off-peak.

The company said: "We apologise to customers for any inconvenience caused during the initial stages of the timetable change."

After years of engineering upgrades, the stage was set for a vastly improved service: instead, two franchises are crippled.

A fortnight later, Gwyn Topham of [The Guardian](#) had this to say:

For hundreds of thousands of commuters, a rail timetable change will never seem innocuous again. Before the schedules were switched three weeks ago, plenty of people had predicted teething troubles: train companies had spoken of the logistical challenge ahead, and commuters were told to expect some initial disruption.

At the time, Govia Thameslink Railway (GTR), a key commuter franchise that runs a sprawling array of routes from Brighton through London to Luton and beyond, seemed to have put recent problems behind it. There had been warning signs on Northern, which covers cities including Manchester, Liverpool and Newcastle. But still, the sheer scale of cancellations, delays, confusion and misinformation that arrived with the new timetable came as a shock.

One rail grandee had predicted problems. But [Sir Michael Holden](#), a former boss of East Coast [right], said the chaos had surprised him. "Never in my worst nightmares did I imagine it could conceivably be anything like as bad as it is," he said. Nigel Harris, editor of trade magazine Rail, said it was "the most chaotic, fundamental and humiliating failure it has been my misfortune to witness in 40 years as a rail journalist". Chris Grayling claimed he was assured by GTR that the new timetable would work.

What had been billed as a boost to services instead saw thousands cancelled: plummeting punctuality

statistics for GTR and Northern masked even greater local problems. In some peak periods on the Manchester-Preston line, or on Thameslink mainline trains, two in three trains were failing to run at all. Instead of a few days of hiccups, it swiftly became clear weeks of convulsions were ahead, with emergency timetables being introduced to slash services and stem the chaos.

Around 8,000 services on GTR have so far been cancelled or severely delayed, while some 5,000 Northern trains have suffered the same fate since 20 May – excluding two days of strikes when 2,000 trains were pulled in advance. As the cumulative fury of commuters swells into a political crisis, how did this self-inflicted disaster come about?

Why was the timetable changed so radically?

This blow to the reputation of England's railways came, ironically, at what should have been a moment of triumph. Instead of the usual twice-yearly tweaks, the national timetable was to undergo wholesale revisions to take advantage of new technology, new trains and years of engineering work. The Great North Rail project, which included electrification and the construction of a new piece of track, the Ordsall Chord, was designed to allow more trains to travel through Manchester, speed up journeys and make new direct links possible.

In the south, commuters were set to reap the fruits of a project so long in the gestation it was once called Thameslink 2000: a £7bn overhaul that included rebuilding London Bridge station, adding modern signalling and buying new trains so that dozens of services could pass per hour with automated, Tube-style frequency. Every single train timing was redrawn on GTR's franchise in an attempt to harvest the benefits of that work, add extra services and – laughable though it sounds now – increase reliability.

Why did it go wrong?

The fundamental problem was the lack of drivers. Both GTR and the company that operates Northern's franchise,



Arriva Rail North, claim to be employing more than enough drivers to run the expanded services the May timetable was due to provide. However, what is needed on every train is a driver who has been trained both on the exact model of train and the full route they are to operate. That takes time and resources: new drivers are trained by qualified drivers, taking them out of the action too and compounding the shortage.

That, of course, is foreseeable – which is why services have to be planned many months in advance. Normally, the process of setting timetables starts 16 months ahead, to be thrashed out by train companies and approved by Network Rail – the state-owned operator of Britain's rail infrastructure – with three to six months to spare. This time, it was a matter of weeks.

Why were the timetables drawn up so late?

There is no single answer, though there are interconnecting issues from north to south. For Northern, Network Rail accepts a large part of the blame for a long-delayed infrastructure upgrade – the electrification of the line past Bolton. Work that should have been long finished has dragged on: a first contractor was replaced by Carillion – but then Carillion imploded. And Carillion's replacement has had to grapple with ground scarred by old mines, taking weeks to put up power lines that would normally go in overnight.

But Northern has also struggled with industrial relations: goodwill, which

has often buoyed up an industry reliant on overtime and rest-day working, has evaporated in parts. All retraining has had to take place on working days, leading to an acute shortage of trained drivers even before the May changeover.

GTR, meanwhile, had been through well-documented problems of its own, with strikes by guards and drivers heaping on commuter despair. The Southern part of the franchise has been a byword for rail failure since 2015 (although right now, almost unnoticed, it is thriving since the timetable change). A set of interrelated problems, on track and trains, had been identified by Chris Gibb, the senior railwayman brought in by transport secretary Chris Grayling to help restore some quality to GTR in December 2016. He warned that a phased introduction of new services would be vital to make Thameslink work.

That view was shared by Network Rail and GTR: but delaying new services needed the Department for Transport's approval – which came long after Network Rail planners needed to start drawing up the timetable. When the DfT belatedly decided phasing was a good idea, the planners' work was scrapped and the process started again, four months late already. And yet more issues arose: GTR's planning team, shorn of numerous experienced staff, requested thousands of changes months later.

What questions remain?

Two inquiries lie ahead: one commissioned by Grayling from Professor Stephen Glaister, chair of the Office of Rail and Road regulator; and an investigation by the Transport Select Committee.

The latter may yet bring the axe hovering closer over Grayling's head. The transport secretary has angered Network Rail by immediately blaming them. Then in his statement to the Commons, he claimed he had been "personally assured" by GTR that the service would work, and risked alienating allies such as Gibb, who chaired the Thameslink readiness board, by joking about trusting experts.

Grayling's claim of receiving



assurances could yet be called into question by GTR executives. Conversely, should GTR prove to have not informed the readiness board that they did not have sufficient drivers, it calls into question the competence of a company supposedly intensely monitored by the DfT. And Network Rail, as a publicly owned company, reports to the transport secretary – the one accountable person, as Labour points out, in a fragmented industry.

Would nationalisation or a single owner have averted it?

Possibly, yes: even leaving aside questions of state versus private, a single accountable body with proper oversight might have acted sooner. In Scotland, where track and train come under joint supervision, the late delivery of Hitachi trains prompted Scotrail to defer its own new timetable. This was a course of action that England's fragmented system was apparently unable to take.

A senior industry source said: "It's a system issue – you've got to get all the elements right. We've bitten off more than we could chew. We knew that it was going to be the biggest timetable change ever, and the industry didn't spend enough time checking it would work – until it was too late."

Govia labored mightily to plug the dyke. To its credit it admitted its own failings and attempt to explain to passengers what went wrong and what it was trying to do to fix the problems:

• Stabilising and improving rail services

New timetables are being gradually introduced. Please check journey times

daily. We are acutely aware that the current level of service experienced by our Great Northern and Thameslink passengers falls far below what either you or we expect.

We anticipated some degree of disruption to services while we made the huge changes in operational processes that the new timetable required and had planned for it with the gradual introduction of services on some routes. However, the impact of the late delivery of the timetable and engineering work plan by Network Rail has been much more disruptive than we expected. On behalf of Network Rail, ourselves and the rail industry we apologise unreservedly for this.

We still believe that the new timetable will bring huge benefits to our customers when it is fully introduced, but there is still work to do to make this happen. Rest assured we are doing all we can to bring this about as swiftly as possible and to limit the disruption to your service while we do this.

• Stabilising the service

We know that passengers want as much consistency as possible. From Monday 4 June, we have removed specific services from our timetable in the short-term. We will then publish daily timetables each evening on next day on-line journey planners and on live departure boards. This will reduce late-notice cancellations and allow us to better implement alternatives to fill in any gaps in service such as arranging ticket acceptance on other transport operators and organising replacement buses or taxis.

- **Improving the service further**

With the interim service now in place, we will continue to make improvements to best match the available resources with customer demand; to reduce any gaps in service and make late notice alterations to a minimum. We hope you will see a steady improvement in service as the weeks progress and expect to be able to advertise the day's service reliably in advance.

- **Publishing the interim timetable**

Once we have completed the work to fine-tune the service, we will publish a revised timetable, on-line initially – with printed timetables expected to follow as soon as possible after. This revised timetable will be in place until we are able to introduce the full timetable delivering additional capacity, more frequent trains and new routes across the network.

If your journey was delayed by 15 minutes or more, we encourage you to claim for compensation through the Delay Repay scheme.

Once again, we are very sorry for any disruption to your journeys.

- **How do I plan my journey?**

Travelling on Mondays to

Fridays: Online journey planners will be updated by 20:00 on the Sunday of each week to show the short term amended timetable operating on the following Monday to Friday. Services shown are expected to run, but there may be some additional alterations, so please check your journey as close to your time of departure as possible.

On some routes where there are extended gaps between trains, Thameslink and Great Northern will be supplementing the train service with additional buses.

It is vital that you recheck your train as close to the time of your journey as possible using journey planner or live departures.

Travelling on Saturdays and Sundays:

Revised timetables showing the services Thameslink and Great Northern intend to run are available [on the website]; however, these timetables do not include any

alterations due to Network Rail improvement work. A list of planned engineering work is also shown there. On affected routes, journeys may be extended by up to 60 minutes compared with journey planners. It is expected that journey planners will be updated by 20:00 the day before travel, but there may be other on-the-day alterations. It is therefore vital that you recheck your train as close to the time of your journey using journey planner or live departures.

- **Where can I download the original May 2018 Monday to Friday timetables?**

These can still be downloaded from our website, but please note the requirement to re-check your journey as close to your time of travel as possible.

Mondays to Fridays timetables - please check before you travel for on-the-day alterations. These timetables show the full service, but there may be alterations on a daily basis to Thameslink and Great Northern services. We will advise you of these alterations as early as possible by updating journey planners. It is vital that you visit nationalrail.co.uk and recheck your journey as close to your time of travel as possible.

- **Where can I download the revised weekend timetable?**

The revised weekend timetables for Great Northern and Thameslink are also available for download. These timetables do include alterations that allow us to operate this timetable reliably. They do not include any alterations that may be required to allow Network Rail engineering work to take place. On affected routes, journeys may be extended by up to 60 minutes compared with journey planners.

For details of Gatwick Express and Southern services please visit nationalrail.co.uk and plan your journey using the journey planner. It is important that you re-check your journey close to your time of travel.

Sunday Timetables

For details of Gatwick Express and Southern services please visit

nationalrail.co.uk and plan your journey using the journey planner. It is also important that you re-check your journey immediately before you travel.

- **What alternative routes are available?**

We are working closely with other rail and bus operators to arrange ticket acceptance. Replacement buses will also operate to fill gaps in service where possible. Please check nationalrail.co.uk for information on the current arrangements.

- **What is happening?**

Demand for rail services have doubled in just 16 years on the Govia Thameslink Railway network and 12 years on Southern routes into London. While this has been very welcome, it has also brought its challenges and some of our busiest routes are operating at capacity, particularly during peak times. To facilitate the extra services to satisfy the huge growth in demand, the railway is undergoing its biggest modernisation since the Victorian era. And the new timetable, introduced on Sunday 20 May, was planned to be the most ambitious in recent railway history, providing additional capacity for 50,000 more peak-time commuters into London.

In order to make space on the network for hundreds of extra services, the timing of all GTR services had to be changed. All of these new journeys needed to be individually approved by Network Rail to ensure the national rail network runs safely and smoothly. Unfortunately, as a result of the sheer number of changes required and the late running of some engineering improvements, the process took longer than anticipated, approvals for service changes were delayed and some timetable requests were changed.

This meant that Govia Thameslink Railway (GTR) had much less time to prepare for the new timetable which required trains and drivers to run on different routes. The differences between the timetables submitted and those approved created a requirement for training

that had not been anticipated. This meant that the necessary specialist training was not able to be completed in time for drivers to learn new routes and for GTR to address all the logistical challenges.

- **Why didn't you delay the changes?**

The new timetable had to be implemented because it is an integral part of a UK-wide rail plan, dovetailing with other train operators' timetables as well as future engineering schedules.

- **What are you doing to put this right?**

We fully understand that passengers want more certainty and we are working very hard to make changes that this week should bring greater consistency to the timetable with fewer unplanned cancellations. This will minimise service gaps wherever possible and allow passengers to arrange their journeys with greater confidence. This means passengers will be able to plan journeys ahead of time although they are still advised to check for any alterations that have to be made on the day of travel.

We will also be working with industry colleagues to establish a new temporary timetable that will progressively deliver improvements.

- **Have you got enough drivers?**

We have enough drivers. The significant delay in Network Rail agreeing to the timetable has directly impacted our ability to re-work train crew schedules, work locations and some new route training.

- **Why did you continue to promote the new timetable and not advise of the issues before the 20 May?**

The implications of having only just over two weeks to prepare a plan rather than three months meant that the full impact of the timetable was not known until it was introduced. We had to implement the new timetable because it dovetails with other train operators across the country and future engineering work.

- **Why aren't you showing cancelled trains on station information screens and journey**

- planners?**

As we work to bring greater consistency to the timetable, the need to give accurate information continues to be vital. The decision to take trains out of the timetable rather than show them as cancelled means that the systems only show what is running.

- **Why are there last minute cancellations?**

We are continuing to align our resources to the new routes in preparation for a new timetable that will progressively deliver improvement. In addition, everyday service issues may also mean we need to cancel trains.

- **Why can't you introduce an amended timetable?**

In addition to the immediate priority to have a more stable service, we are also working with industry colleagues to establish a timetable that will progressively deliver improvement.

- **When are things going to get better and how long is this going to last?**

Our absolute and immediate priority is to bring greater consistency to the train service; to provide our passengers with certainty about their service and reliable information with which to plan. The improvements will be gradual. In particular, we are working to;

Create a consistent revised weekend service which will be published; Introduce, in the coming days, a weekday plan that, again, will bring greater consistency to the timetable, giving passengers a better level of service, allowing them to plan their journeys with greater confidence. Passengers will have a better level of service than they have today, avoiding service gaps wherever possible.

- **What compensation are you providing? How to claim compensation**

If your journey is delayed by 15 minutes or more, you can claim compensation. Whilst we work with our industry partners to reduce short notice cancellations, our passengers

travelling on Great Northern or Thameslink services can claim against either the original May 2018 timetable shown above or the train service in place on the day you travelled.

- Applying for compensation**

We've made claiming compensation a straightforward process and it only takes few minutes to claim. The quickest way to do this is by using our online form. We need a few details from you including the times of the train you would have caught along with pictures of your tickets. Please note that you cannot claim for compensation in advance.

- **Enhanced compensation for season ticket holders**

The Delay Repay scheme compensates you for any journey delayed by 15 minutes or more. If there are persistent delays on a route, season ticket holders are also sometimes entitled to enhanced compensation.

Enhanced compensation is payable when you experience delays to your journey of 30 minutes or more on any 12 days in the same four-week 'reporting period'. Please see our websites for more information and to claim.

- **Are you continuing to support passengers who require assistance?**

Passengers travelling with accessibility requirements can still expect the same level of assistance and support from our staff as before. Our travel policies have not changed - we would ask that customers contact us the day before travel if they are pre-booking their assistance. We appreciate that all passengers are impacted by cancellations as we work with industry partners to introduce new timetables. We continue to support all passengers to complete their journeys, including those who may need assistance support on their journeys.

Passengers can continue to travel without booking assistance or can pre-book their assistance, it is their choice. Passengers can also contact our Assisted Travel team if they simply want advice before they travel. On

some routes trains will be busier at peak times and all passengers, if you their have flexibility in when you travel, you may want to consider when they travel. We recommend that all passengers continue to check before they travel. More detail is available on the assisted travel pages.

By early July, the Govia “ship” had regained an even keel, but lots of water still had to be pumped out of the bilges.

- **Interim timetable from Sunday 15 July**

We have now completed work to produce an interim timetable. It will be in place from Sunday 15 July, and can

be downloaded on our timetables page now. Printed copies will be available at stations in the coming weeks. This timetable is intended to deliver a consistent and more reliable service. This revised timetable will be in place until we introduce the full timetable, delivering additional capacity, more frequent trains and new routes across the network.

Eventually, perhaps, a new “permanent” timetable will surface and, perhaps, Network Rail will issue a revised WTT.

There are plenty of precedents around the world for this kind of “fiasco”. Here in Australia, the biggest have

been in Sydney (1975) and Brisbane (2017). Lack of drivers is, most often, the principal trigger, although the 1975 “Timetable Disaster” had many causes (The Times October 2002). In 2002, Sydney narrowly averted another such fiasco when the lack of drivers was brought to the attention of timetablers in the nick of time.

Some of our experienced ATA members will soon be addressing the issue of coordination of crew and rolling-stock rosters with the timetable in a future issue– won’t you boys?

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What Katie did next

How KATIE BELL figured out which was “the worst bus route in Sydney”

Katie Bell (“katharosada”) is, in her own words, a computer code “developer, SRE, code archaeologist, educator, bus enthusiast (the large kind, not the computer kind).”

When she was attending UTS as an undergraduate, Ms Bell usually caught the 370 bus from her home in the Eastern Suburbs to UTS and, like everyone else complained about its unreliability. The service was so unreliable that it spawned its own Facebook page [The Universe Would Cease to Exist if the 370 Bus Arrived on Time](#), which she joined. The “About” page of the Facebook page says: *It's mid-morning by the Coogee Beach bus terminal and you're jostling for space amidst a sea of exchange students, wondering if you'll be on time for your tutorial today...oh where is the 370? It's the end of another long day on campus, and you're crawling out of a cycling class at the UniGym, spurred on by thoughts of air-conditioned public-transport bliss and 2-for-1 cocktails in Newtown...but where is the 370? If you, too, dream of*

a world where the Newtown-USyd-UNSW-Coogee bus would run to schedule...don't, because honestly we'd all be in trouble.

The Facebook page asserted that the Route 370 was the worst bus route in Sydney, but Ms Bell wanted to discover whether this was really true. She therefore developed a software solution to examine this proposition. In January 2018, she gave a talk at Linux.conf.au 2018 (LCA2018) which was held on 22-26 January 2018 in Sydney Australia. linux.conf.au is a conference about the Linux operating system [Linux is a computer operating system, a competitor to Windows], and all aspects of the thriving ecosystem of Free and Open Source Software that has grown up around it. Run since 1999, in a different Australian or New Zealand city each year, by a team of local volunteers, LCA invites more than 500 people to learn from the people who shape the future of Open Source computer language [Open Source languages are computer languages which are not trade secrets and are

shared. Below is some text from the [video](#) of Ms Bell’s 45-minute presentation and from the website that Ms Bell set up subsequently.

Is the 370 the worst bus route in Sydney?

In Switzerland, people will be surprised at a bus that’s 2min late. In Sydney, people will only consider it noteworthy if a bus is more than 30min late, and this varies greatly between routes and providers. So, how do Sydney buses (and third-party bus providers) stack up against each other and the world? To answer these questions we need data... lots of data.

Hooray for open government data! Transport for NSW (TfNSW) publishes real-time information on the location and lateness of all public transport. Unfortunately it’s ephemeral - there is no public log of historical lateness for us to analyse. To gather the data I needed I had to fetch, log and aggregate ephemeral real-time data that was never intended to be used this way. There are random gaps

and spontaneous route or timetable changes for special events, roadworks or holidays. Even with inconsistent data, the patterns start to emerge across months.

Public transport networks of the world export timetable and real-time data in a (reasonably) consistent format so this process can be applied across cities and countries. Let's see how Sydney stacks up against other cities or how Australia stacks up against the world! Perhaps 40min late buses are not an inevitable fact of life.

What Katie did back then

Katie gave the following paper [edited and paraphrased transcript by Geoff Lambert]:

“This is the 370 bus [picture cover, top] which runs from Coogee to Leichhardt [map on cover] and which passes the University that I attended. It is said to be the worst bus route in Sydney. By 'worst' I mean that it's most frequently late and unreliable. There have been multiple news articles about it, there's a Facebook community around it. [On page 2] is a picture of three 370 buses together. For a bus that is meant to run every twenty minutes, you shouldn't expect to see this. At least one of them must be twenty minutes late and/or hilariously early. It has been said that, with bus privatisation in the Eastern Suburbs, the situation will improve. Will it ... and is the 370 really the worst bus in Sydney—are they all that bad?

I rather quickly found that TfNSW provided both planned and actual real-time timetables through the [General Transit Feed Specification](#), abbreviated as GTFS. I discovered that TfNSW provides a large amount of data on both planned and actual running of transport services in NSW through its “[Open Data](#)” site. The planned data is always available, but the real-time data doesn't seem to be saved for posterity – or at least TfNSW

won't admit it. They didn't answer my plea on the Open Data users' pages. [see Fig 1]. It is, however, available for a short period and the app developers such as GroSoft who sell TripView make it available to customers.

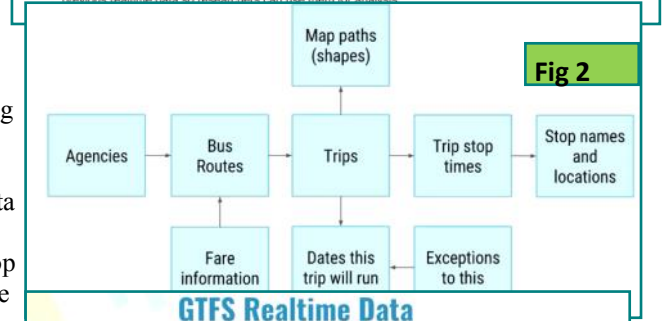
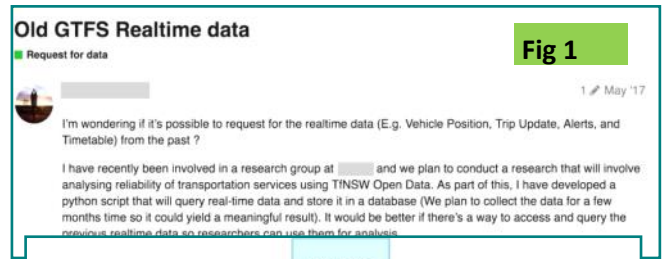
GTFS files are very simple text files containing everything you need to know about a planned trip, summarised in Fig 2. The real time GTFS data is a bit more tricky and Fig 3 shows the data for a single stop on a single trip of the 370. The salient feature of this is the lateness figure, which is 125 seconds. By subtracting this from the actual time, we can figure out what the scheduled time was. This means that we do not have to consult the planned timetable— which might not be relevant for this particular trip. This is not as easy as it sounds because the real-time GTFS can have heaps of glitches.

So, I set my computer running for 4 months to download as much data as I could. At any one moment there can be 7,000 trips on the go and at this time point about 2,000 of those have lodged real-time data on the system.

Over the 4 months period of data capture, I had to download 557 Gigabytes of real-time data (Fig 4) and process it faster than it came in. This took a bit of doing. Fig 5 shows how I got better and faster as it as time went on during the second week of January.

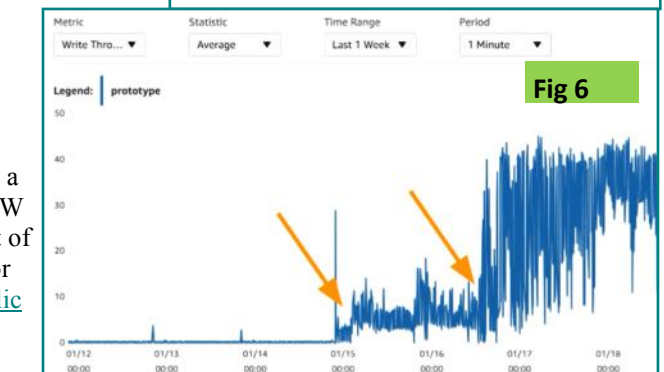
Out of this came squillions of delay figures—but when does a “delay” become “late”? TfNSW has a much more generous set of [key performance indicators](#) for this (Fig 6) than does the [Public Transport Corporation in Victoria](#) (PTV, Fig 7).

So, I decided to analyse the data by the average delay, but also by the lateness figures, considering that 20 minutes late (that is to say, a delay of 26 minutes was “unacceptably late”). My criteria are summarised in Fig 8.



GTFS Static	GTFS Realtime
4 Months	4 Months
29 Separate timetable feeds	1 realtime feed (combined NSW)
786 Timetable dumps	186,628 collections (every 1min)
3.5 GB	557GB

-



The results are summarised in Fig 9 and shown in greater detail on page 16. The 370 is but the seventh worst bus in NSW, but probably the worst in Sydney (or maybe the route 227 is worse).

Ms Bell also presented data on the best routes in NSW. A goodly number of these were Nightrider buses, which travel on traffic-free streets. The best of these was the “Stockton Ferry” route, with a 97% on time record. This was probably not the ferry itself, but the Nightrider bus for it, according to ATA’s Paul Brown.

What Katie did next

Ms Bell has subsequently created a web-site to answer the eternal question: Is the 370 bus really the worst bus in Sydney? The home page of her [web-site](#) says: *This site is a work in progress, but the ultimate goal is to publish statistics collected from Transport for NSW and aggregated over time. Once the stats. come in, we'll be able to answer not only if there is a bus worse than the 370 but also if third-party agencies provided better or worse service than the government owned bus services. If you're interested in helping out with this project, check it out on GitHub. Web design skills are lacking (as you can see) and data science skills would be a huge bonus.*

A screen shot from this website, showing the July 2018 performance of the Route 370 appears in the box below. As one contributor to this Facebook Group noted



“things have not got any better.”

Katie wants to do the same for train, tram and ferry. Can you help?

Comment on this article –[Letter to Editor](#), [Facebook](#)

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Bus route 370, **Leichhardt Marketplace to Coogee**
 Sydney Buses Network
 Last two weeks:
 2018-07-05 - 6.7% of trips were on-time
 2018-07-06 - 7.9% of trips were on-time
 2018-07-07 - 6.5% of trips were on-time
 2018-07-08 - 15.0% of trips were on-time
 2018-07-09 - 8.6% of trips were on-time
 2018-07-10 - 7.3% of trips were on-time
 2018-07-11 - 9.3% of trips were on-time
 2018-07-12 - 16.0% of trips were on-time
 7-13 - 8.6% of trips were on-time

Trip On Time means, for Published Timetable Trips, a Contract Bus departing a Transit Stop no more than 1 minute 59 seconds early and no more than 5 minutes 59 seconds late compared to Timetable and for Headway Trips means commencing each Headway Trip within 5 minutes 59 seconds of published Headway. Where Contract Buses link with train services in the Timetable, time is measured from when passengers arrive at the Transit Stop.

Fig 7

KPI	<ul style="list-style-type: none"> (i) At least 95% of Published Timetable Trips and Headway Trips commence each Trip On Time (ii) At least 95% of Published Timetable Trips and Headway Trips leave the mid-point Transit Stop on each Trip On Time (iii) <5% of Published Timetable Trips arrive at the last Transit Stop of each Trip Late
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Metropolitan and regional buses

Fig 8

Operators of regular passenger services in Melbourne and regional areas are required to ensure that:

- no timetabled bus services operate early at any point on their routes
- no more than five per cent of all services provided on any day or 10 per cent of services provided on any route of any day will operate more than five minutes late at any point on the timetable
- 99 per cent of all scheduled services on any day operate and are completed.

Early	More than 2min early
On time	2 min early - 5 min late (inclusive)
Late	More than 5min late
Very late	More than 20min late

Fig 9

Results

Fig 10

Recorded bus trips: 3,726,226

On time: 1,180,774 (31.69%)

More than 20min late: 106,535 (2.86%)

Conclusions

- » Bus privatisation - could go either way ~_(\ツ)_/~
- » The 370 is the worst bus route in Sydney. (or maybe it's 277 - Castle Cove to Chatswood)

Worst Routes (by % > 20min late)

	# of trips	% on time	% >20min late	Route	Route Name
1	1104	20.29	34.69	7	Wollongong to Bellambi (Loop Service)
2	1638	23.99	30.40	8	Wollongong to Bellambi via Balgownie (Loop Service)
3	1660	23.61	25.42	3	Wollongong to Bellambi via Towradgi (Loop Service)
4	1592	48.43	24.81	10	Wollongong to West Wollongong (Loop Service)
5	1605	24.61	24.74	277	Castle Cove to Chatswood
6	14190	8.79	23.45	370	Leichhardt Marketplace to Coogee
7	1616	20.85	22.77	11	Wollongong to Wollongong University (Loop Service)
8	1230	29.67	22.68	24	Wollongong to Figtree via Mangerton (Loop Service)
9	2499	16.49	22.45	281	Davidson to Chatswood
10	1200	22.50	21.92	571	Turrumurra to South Turrumurra (Loop Service)

Worst Routes (by % on time)

	# of trips	% on time	Route	Route Name
1	542	2.77	160	Cessnock to Newcastle
2	1056	3.22	622	Dural to Milsons Point via Cherrybrook
3	699	3.29	L70	Terrey Hills to City QVB (Limited Stops)
4	2442	3.64	627	Castle Hill to Chatswood
5	1876	3.68	628	Norwest to Chatswood
6	1360	4.19	740	Macquarie Park to Plumpton via Stanhope Gardens
7	1280	4.38	594H	Hornsby to City QVB
8	880	5.00	803	Liverpool to Miller (Loop Service)
9	4862	5.78	841	Narellan to Leppington via Gregory Hills
10	2771	5.92	896	Campbelltown to Oran Park via Gregory Hills (Loop Service)

Worst Agencies (by on-time %)

	# of trips	% on time	% >20min late	Route
1	312840	21.05	1.69	Hillsbus
2	11297	21.09	3.49	Rover Coaches
3	155130	23.26	1.17	Transit Systems
4	67066	24.87	6.05	Forest Coach Lines
5	1724152	28.34	3.36	State Transit Sydney
6	344292	30.66	3.24	Transdev NSW
7	119277	33.17	3.14	Newcastle Transport
8	97363	33.34	4.31	Busabout
9	29297	36.47	4.13	Blue Mountains Transit
10	82005	37.99	6.28	Premier Illawarra



www.premierillawarra.com.au