

Objective of Timetable Study

The objective of this study is to understand the potential operational viability for the reinstatement of a station to serve the towns of Langport and Somerton on the existing dual track Great Western Line between London Paddington and the South West. This is proposed to be located between the existing Athelney Crossing and Castle Cary on the line from Westbury towards Taunton.

It is aimed to find hourly paths running between Westbury and Taunton, assumed to call at Castle Cary and the new station.

Assumptions

- Passenger and Freight services are based on the May 2020 timetable pre COVID services;
- The new Somerton station is proposed to be located at the existing Somerton Ground Frame location between Athelney Crossing and Castle Cary for the purposes of this study;
- The trains serving the new Somerton station are assumed to be in the form of Class 150s with a maximum speed of 75mph as a worst case stock type;
- Station dwell at Somerton and Castle Cary would be 1 minute throughout the day;
- Trains would not call at Frome and use the Frome Avoiding Line between Clink Road Jn and Blatchbridge Jn;
- Existing planning rules (2022 v3) and performance time in schedules should be maintained;
- SRTs are estimated at this stage pending formal modelling in RailSys as the design evolves.
- Station working and platforming at Westbury or Taunton has not been considered
- Resourcing and interworking of these services have not been considered at this stage

Sectional Running Times

The SRTs for Somerton station were estimated for Class 150 based on previous SRTs between Athelney Crossing and Castle Cary.

The location of the new Somerton station is estimated to be 15.5km east from Athelney Crossing and 15.5km west from Castle Cary, and has 100m long platforms.

Based on the assumptions outlined above and applying allowances for breaking and accelerating where required – matching other similar stations, in the table below are presented the SRTs obtained for Somerton station.

UP DIRECTION			
Origin	Destination	Movement	SRT (minutes)
Athelney Crossing	Somerton	P-S	7.5
Somerton	Castle Cary	S-S	10.5
Athelney Crossing	Somerton	P-P	7
Somerton	Castle Cary	P-S	9
DOWN DIRECTION			
Origin	Destination	Movement	SRT (minutes)
Castle Cary	Somerton	S-S	12
Somerton	Athelney Crossing	S-P	8



Castle Cary	Somerton	S-P	11
Somerton	Athelney Crossing	P-P	7

Table 1 – Assumed Class 150 SRTs for Somerton station

Allowance Times

According to the TPR, allowances are applied to the train runs, as listed in Table 2.

UP DIRECTION		
Location	Type	Allowance Time (minutes)
East Somerset Jn	Adjustment Time	-0.5
Clink Road Jn	Adjustment Time	-0.5
	Engineering Allowance	1
DOWN DIRECTION		
Location	Type	Allowance Time (minutes)
Fairwood Jn	Adjustment Time	-0.5
Blatchbridge Jn	Adjustment Time	-0.5
Athelney Crossing	Engineering Allowance	1
Cogload Jn	Engineering Allowance	1

Table 2 – Allowance Times between Westbury and Taunton

Study Findings – Down Direction

For trains departing Westbury between 0700 and 2300, mostly they need to follow services from London Paddington at minimum headway, with the natural slower speed of these services means the lengthening block sections beyond Castle Cary don't become a constraint. It is possible to run 15 services in the time window without big impacts to the existing services at close to an hourly clockface interval, with the exception of mid to late afternoon.

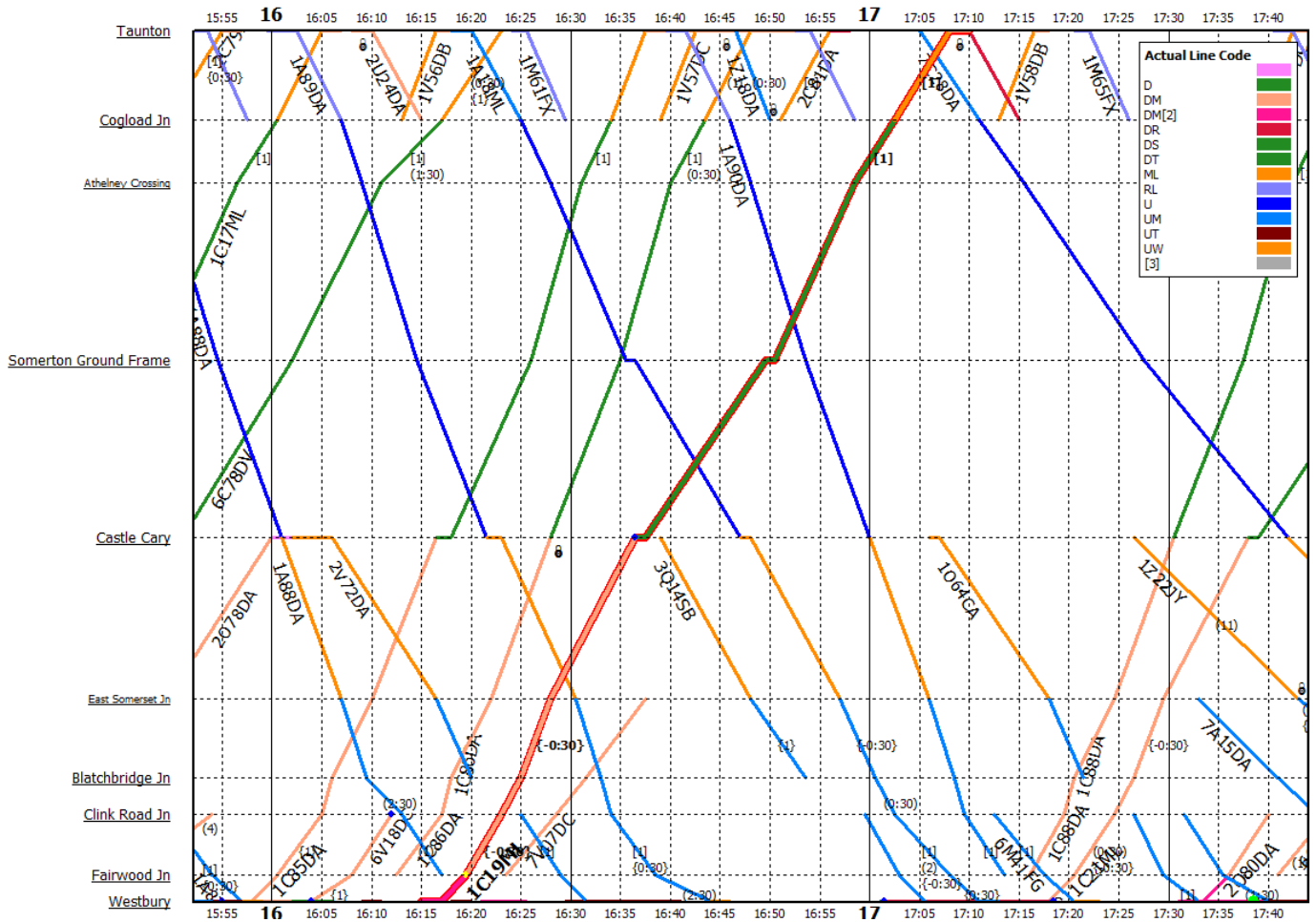
Signal ID		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		1C01ML	1C03ML	1C05ML	1C07ML	1C09ML	1C11ML	1C13ML	1C15ML	1C19ML	1C21ML	1C23ML	1C25ML	1C27ML	1C29ML	1C31ML
Westbury	plt	2	1	1	1	1	1	1	1	2	1	1	1	1	2	2
	dep	07:02	08:00	09:14	10:16	11:16	12:12	13:16	14:31	16:32	17:18	18:38	19:19	20:26	21:03	22:03
Fairwood Jn		07:04½	08:02½	09:16½	10:18½	11:19	12:14½	13:18½	14:33½	16:34½	17:20½	18:41	19:22	20:28½	21:05½	22:06
Clink Road Jn		07:08	08:06	09:20	10:22	11:22½	12:19½	13:22	14:37	16:38	17:24½	18:44½	19:25½	20:32	21:09	22:09½
Blatchbridge Jn		07:10	08:08	09:22	10:24	11:24½	12:21½	13:24	14:44	16:40	17:26½	18:46½	19:27½	20:34	21:11	22:11½
East Somerset Jn		07:13	08:11	09:25	10:27	11:27½	12:24½	13:27	14:48	16:43	17:29½	18:49½	19:30½	20:37	21:14	22:14½
Castle Cary	arr	07:22	08:19½	09:33½	10:35½	11:36	12:33	13:35½	14:56½	16:51½	17:38	18:58	19:39	20:45½	21:22½	22:23
	dep	07:23	08:20½	09:34½	10:36½	11:37	12:34	13:36½	14:57½	16:52½	17:39	18:59	19:40	20:46½	21:23½	22:24
Somerton Ground Frame	arr	07:35	08:32½	09:46½	10:48½	11:49	12:46	13:48½	15:09½	17:04½	17:51	19:11	19:52	20:58½	21:35½	22:36
	dep	07:36	08:33½	09:47½	10:49½	11:50	12:47	13:49½	15:10½	17:05½	17:52	19:12	19:53	20:59½	21:36½	22:37
Athelney Crossing		07:44	08:41½	09:55½	10:57½	11:58	12:55	13:57½	15:18½	17:13½	18:00	19:20	20:01	21:07½	21:44½	22:45
Cogload Jn		07:48	08:45½	09:59½	11:01½	12:02	12:59	14:01½	15:22½	17:17½	18:07	19:24	20:05	21:11½	21:48½	22:49
Taunton	arr	07:54	08:52	10:05	11:07	12:08	13:05	14:07	15:28	17:23	18:13	19:30	20:11	21:17	21:54	22:55
	plt	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

Table 3 – Westbury – Taunton services

Trains running before 0900 and after 2100 can depart Westbury around XX:03, while between 0900 and 2100, the departures are around XX:16, with a few off pattern in the afternoon and evening.

A small number of freight and passenger paths needed minor retiming to accommodate these additional services.

Headcode	Origin	Work Dep	Destination	Work Arr	Days	Amendments
1Q18DA	Reading Triangle Sidings	06:11:00	Paignton	15:29:00	FO	Remove the 2'00 pathing time at Dawlish Warren, add 2'00 pathing time to Cogload Jn



Study Findings – Up Direction

For trains departing Taunton between 0700 and 2300, similar to the down direction mostly they need to follow services towards London Paddington. It is possible to run 15 services in the time window without big impacts to the existing services.

No paths can be found departing Westbury between 0800 and 0900, due to conflicts with existing passenger and freight services.

Signal ID		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
		1A00ML	1A04ML	1A06ML	1A08ML	1A10ML	1A12ML	1A14ML	1A16ML	1A18ML	1A20ML	1A22ML	1A24ML	1A26ML	1A28ML	1A30ML	
Taunton	plt	1	5	5	5	5	5	5	5	4	5	5	5	4	5	5	
	dep	2	07.29	09.12	10.10	11.02	12.14	13.01	14.09	15.02	16.20	17.48	18.31	19.03	20.02	21.00	22.04
Cogload Jn		3	07/34	09/17	10/15	11/07	12/19	13/06	14/14	15/07	16/25	17/53	18/36	19/08	20/07	21/05	22/09
Athelney Crossing		4	07/37	09/20	10/18	11/10	12/22	13/09	14/17	15/10	16/28	17/56	18/39	19/11	20/10	21/08	22/12
Somerton Ground Frame	arr	5	07.44½	09.27½	10.25½	11.17½	12.29½	13.16½	14.24½	15.17½	16.35½	18.03½	18.46½	19.18½	20.17½	21.15½	22.19½
	dep	6	07.45½	09.28½	10.26½	11.18½	12.30½	13.17½	14.25½	15.18½	16.36½	18.04½	18.47½	19.19½	20.18½	21.16½	22.20½
Castle Cary	arr	7	07.56	09.39	10.37	11.29	12.41	13.28	14.36	15.29	16.47	18.15	18.58	19.30	20.29	21.27	22.31
	dep	8	07.57	09.40	10.38	11.30	12.42	13.29	14.37	15.30	16.48	18.16	18.59	19.31	20.30	21.28	22.32
East Somerset Jn		9	08/06	09/49	10/47	11/39	12/51	13/38	14/46	15/39	16/57	18/25	19/08	19/40	20/39	21/37	22/41
Blatchbridge Jn		10	08/09½	09/52½	10/50½	11/42½	12/54½	13/41½	14/49½	15/42½	17/00½	18/28½	19/11½	19/43½	20/42½	21/40½	22/44½
Clink Road Jn		11	08/11	09/54	10/52½	11/44	12/57	13/43	14/51	15/44	17/02½	18/30	19/13	19/45	20/48	21/43	22/46
Fairwood Jn		12	08/15	09/57½	10/56	11/47½	13/00½	13/46½	14/54½	15/49	17/08	18/34½	19/16½	19/48½	20/51½	21/46½	22/50
Westbury	arr	13	08.18	10.00	10.59	11.50	13.03	13.49	14.57	15.52	17.11	18.37	19.19	19.51	20.54	21.49	22.53
	plt	14	2	3	3	3	3	3	3	3	3	3	3	1	2	3	

Table 5 – Taunton – Westbury services



There isn't a clear pattern in the up direction during the day, while services after 1900 have clockface departure from Taunton.

A small number of freight and passenger paths needed minor retiming to accommodate these additional services.

Headcode	Origin	Work Dep	Destination	Work Arr	Days	Amendments
1L51CA	London Waterloo (Main)	16:50:00	Westbury	20:15:00	SX	Add 5'00 pathing at Frome, reduce the 7'30 pathing time at Clink Road Jn to 2'30
7A17DA	Merehead Quarry	10:24:00	Acton T.C.	15:09:00	SX	Add 1'30 pathing at Merehead Quarry Jn, remove the 1'00 pathing at Blatchbridge Jn, reduce the 11'00 dwell at Westbury to 10'30
7C28DA	Exeter Riverside N.Y.	15:42:00	Whatley Quarry	19:41:00	SX	Remove the 4'00 pathing at Fairwood Jn, add 4'00 pathing at Westbury
7F51DF	Whatley Quarry	21:23:00	Westbury Down T.C.	21:58:00	SX	Add 2'00 pathing time at Frome North
6M41FG	Whatley Quarry GBRF	16:43:00	Wellingborough Neilson Sdg	00:01:00	FO	Increase pathing at Frome North from 0'30 to 8'30, reduce dwell at Westbury from 4'30 to 2'30, reduce dwell at 10'00 to 4'00
6M41FG	Whatley Quarry GBRF	16:43:00	Wellingborough Neilson Sdg	00:01:00	FSX	Increase pathing at Frome North from 0'30 to 8'30, reduce dwell at Westbury from 4'30 to 2'30, reduce dwell at 10'00 to 4'00

Table 6 – Amendments to existing services in the up direction

The limiting factors in the up direction are mainly the headway between Cogload Junction and Castle Cary, and the conflicts with the slow running freights as there aren't any freight passing loops between Westbury and Taunton.

In some hours there can be more than one potential path. Table 7 shows some possibilities.

Signal ID			1A04ML	1A10ML	1A12ML
Taunton	plt	1	5	5	4
	dep	2	09.23	12.23	13.16
Cogload Jn		3	<i>09/28</i>	<i>12/28</i>	<i>13/21</i>
Athelney Crossing		4	<i>09/31</i>	<i>12/31</i>	<i>13/24</i>
Somerton Ground Frame	arr	5	09.38½	12.38½	13.31½
	dep	6	09.39½	12.39½	13.32½
Castle Cary	arr	7	09.50	12.50	13.43
	dep	8	09.51	12.51	13.44
East Somerset Jn		9	<i>10/00</i>	<i>13/00</i>	<i>13/53</i>
Blatchbridge Jn		10	<i>10/03½</i>	<i>13/03½</i>	<i>13/56½</i>
Clink Road Jn		11	<i>10/05</i>	<i>13/05</i>	<i>13/58</i>
Fairwood Jn		12	<i>10/08½</i>	<i>13/08½</i>	<i>14/01½</i>
Westbury	arr	13	10.11	13.11	14.04



	plt	14	2	3	3
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Table 7 – Potential paths in the up direction

Conclusions

The proposed station to serve Langport and Somerton is placed at the existing Somerton Ground frame. There is a 3-minute penalty for Somerton calls in both directions.

It is possible to have hourly paths for Class 150 Somerton stoppers throughout the day (0700 to 2300 departures from Westbury/Taunton), with one exemption in each direction. However, it is difficult to achieve a clockface timetable in both directions.

In the down direction, trains running before 0900 and after 2100 can depart Westbury around XX:03, while between 0900 and 2100, the departures are around XX:16, with a few off pattern in the afternoon and evening.

In the up direction towards Westbury, there isn't a clear pattern during the day, while services after 1900 have clockface departure from Taunton.

With further interference to existing freight and even passenger trains, it is possible to achieve a more clockface timetable. There is some capacity available for additional paths in some hours as well.

It is to be noted at this stage the 8tpd Go-op trains haven't been taken into consideration.