

# Clockface Timetable Elements

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# Overview



- What is Clockface timetabling?
  - Reliability on Single lines
- Infrastructure to match
  - Capacity of line
  - Setting the interval
  - Reliability
- European practice
  - Connectivity
  - Information



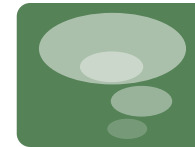
# What is Clockface timetabling?



- Same time each hour
  - For suburban network trains depart at equal intervals on an hourly cycle
    - From Macaulay 3 train cycle gives train departing xx:08, xx:28 and xx:48 each hour
    - From Glen Waverley 4 train cycle gives trains departing at xx:02, xx:17, xx:32, xx:47
    - Easy to work out next train
  - For regional network 1 and 2 train patterns are also common
    - Connectivity is key
  - Not always exact same interval between trains



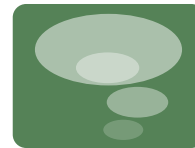
# Reliability of Single lines



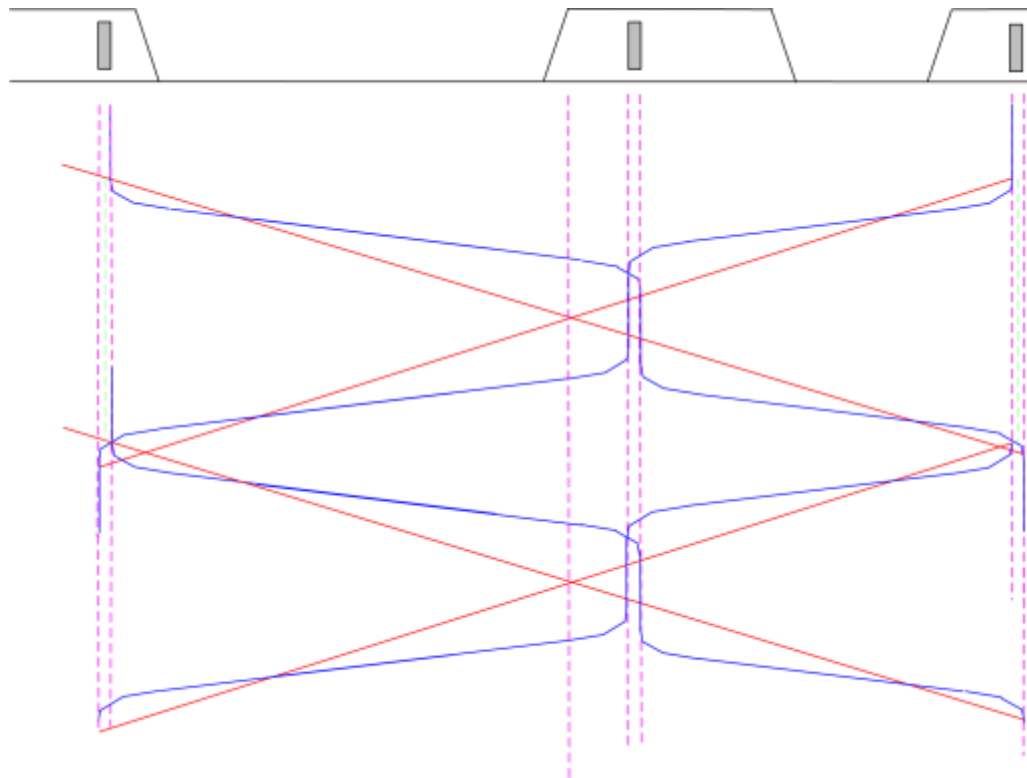
- Swiss experience
  - Last year Swiss Railway performance:
    - 89% reliability
    - To 3 minutes
  - Single line infrastructure common in Alps
  - Alba tunnels remains single line after upgrade
    - Provides target capacity
    - Supports reliability



# Single line capacity basics



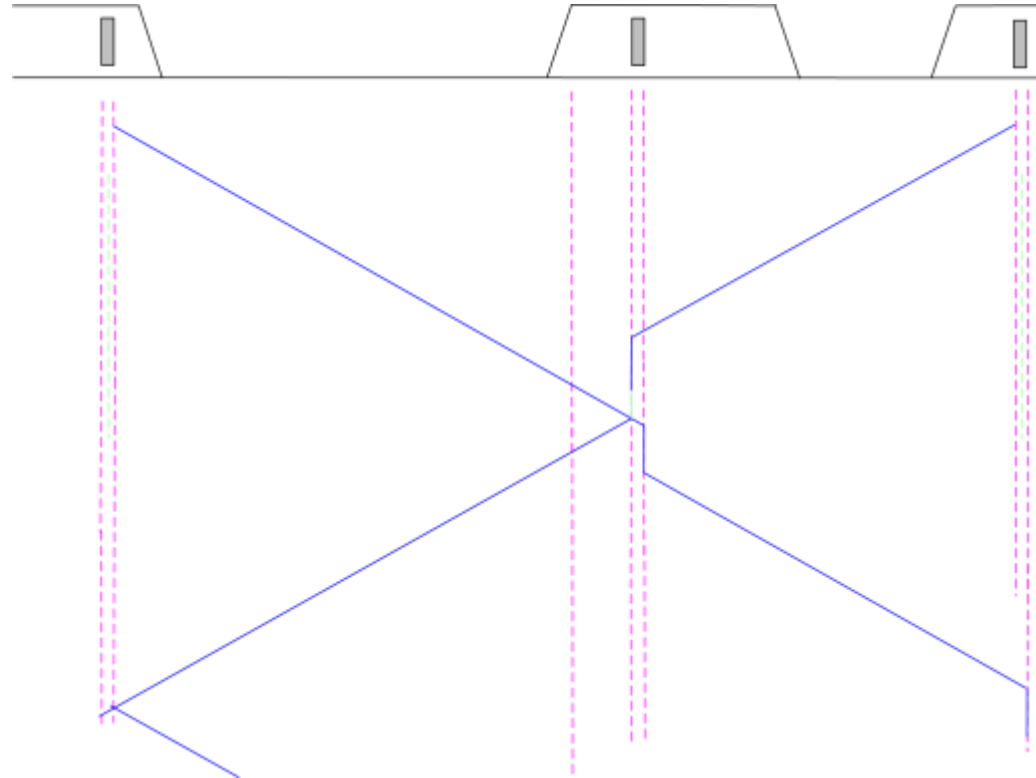
- Single Line bi-directional interval
  - Alternate up and down trains run
  - Running time between loops calculated
  - Equal running time needed between loops
  - Train follows at interval twice running time
  - Governed by longest section
  - 8min -> 16 min interval



# Setting of interval

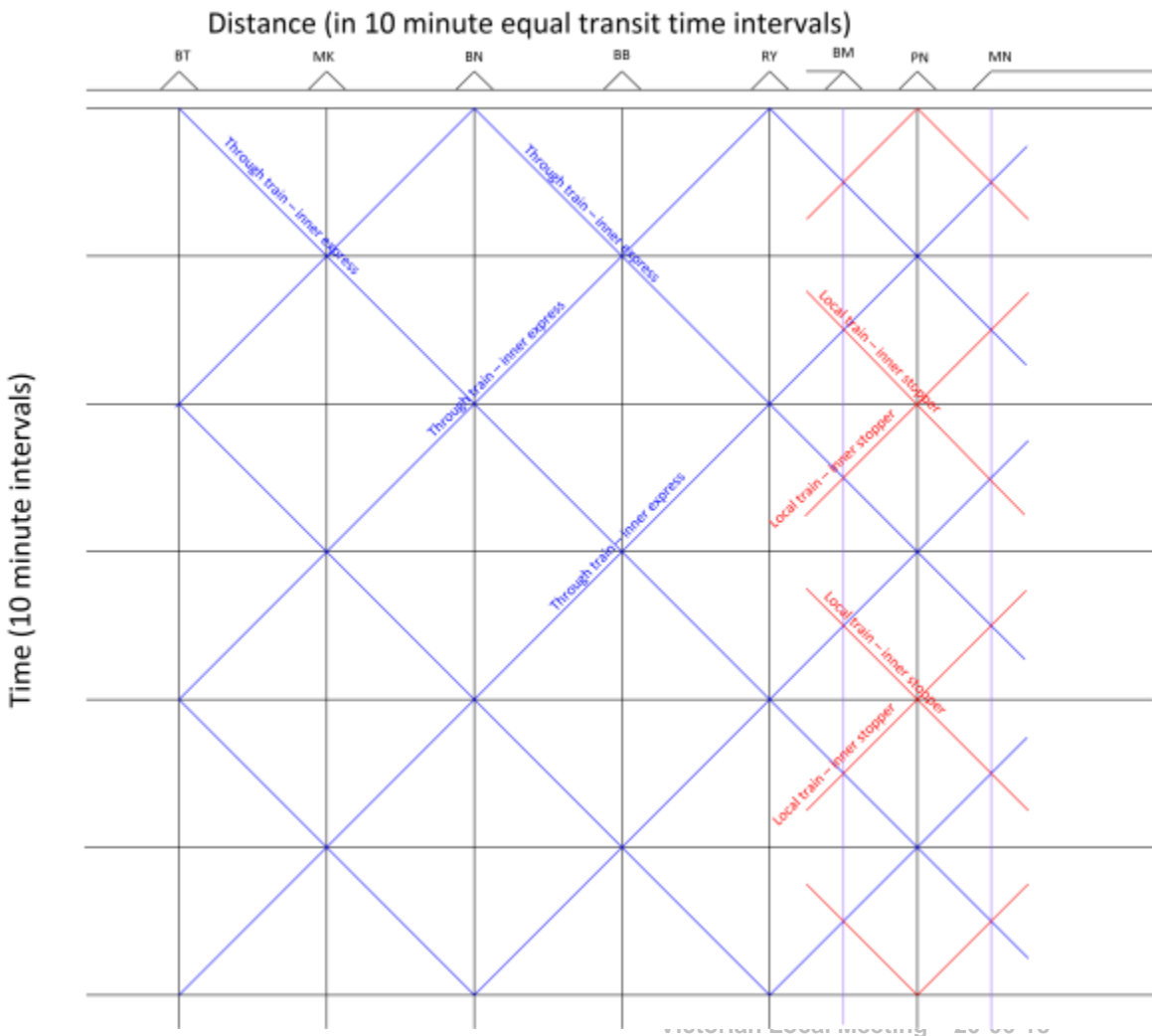


- Capacity is governed by longest section:
  - Eg Long section train running time = 8 minutes
  - Short section compensates by including extra station stop time
- Interval between trains 16 min?
  - Not useful for clockface
  - Interval of 15 min or 20 min allowed
- Need to add time or improve infrastructure



# Example 1

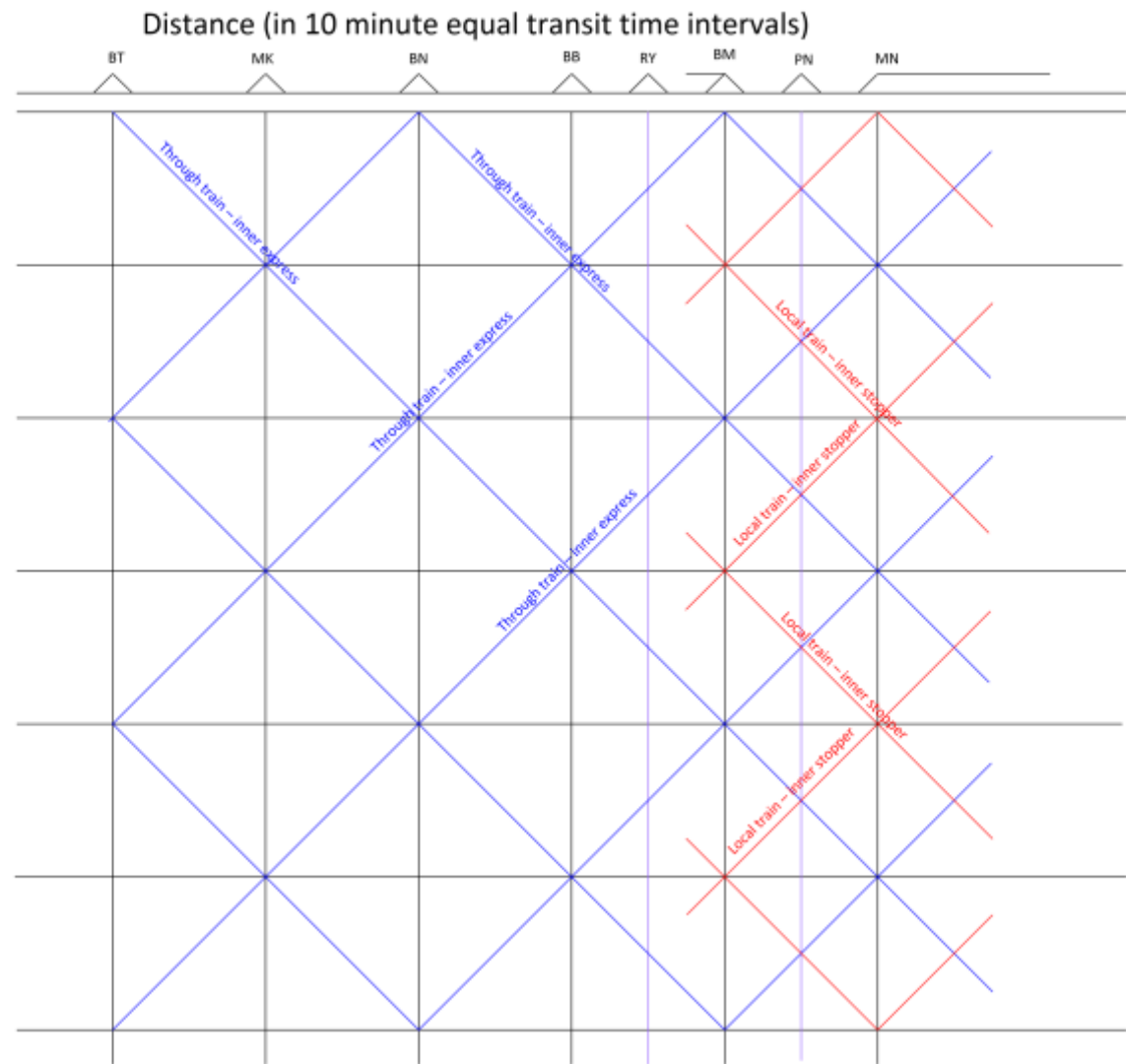
- Line with multiple passing loops
- 10 minute running time between loops (3 train clockface)
- 5 minute running time section in inner zone (eg 6 train clockface)
- Reliability improved by recovery time
- 6 minutes transit lost





# Example 2

- Different options available for loops used
  - Interchange at BM supported here
  - Requires extra platform capacity compared with example 1
  - Project to improve long run time by 1 min can give 9 min better transit time







# European Practice – Group Running



- Group Running in Heidelberg:
  - An operational concept
  - Not an infrastructure concept
- “Saturating the nodes”
  - 42 platforms at Zurich main station
  - Focus on connectivity





# Regionales Schienennetz VRN

Fahrplanauskunft und Infos im  
Internet unter: [www.vrn.de](http://www.vrn.de)



**Fahrplan Hotline: 0621.1077077 (rund um die Uhr)**



# European Practice – Group Running



- Hourly schedules dominate:
  - S5 at xx:19 each hour
  - S2 at xx:27 each hour
  - S1 at xx:47 M-F
  - S1 at xx:57 each hour

2	8:57	☉1	HD Weststadt/Südstadt 9:00 - Heidelberg 9:02 ☉ Mannheim 9:20 - Homburg 11:06 * 28. Jul bis 2. Sep nur bis Heidelberg 9:02	1	13:47	☉11/☉3	HD Weststadt/Südstadt 13:30 - Heidelberg 13:34 ☉ * nicht an allg. Feiertg.
2	9:00	☉1	HD-Schlierbach/Ziegelhausen 9:03 ☉ Neckargemünd 9:09 - Eberbach 9:28 - MOS-Neckarelz 9:47 - Osterburken 10:23	2	13:54	RE 19345	Eberbach 14:16 - MOS-Neckarelz 14:54 * nicht an allg. Feiertg.
2	9:09	☉51	Neckargemünd 9:15 ☉ Meckesheim 9:27 - Weilstadt 9:41 - Agfasterhausen 9:53 * 9. März bis 20. Apr nur bis Meckesheim 9:27 * nicht an allg. Feiertg.	2	13:57	☉1	HD Weststadt/Südstadt 14:00 - Heidelberg 14:02 ☉ Mannheim 14:1 Homburg 16:09 * 28. Jul bis 2. Sep nur bis Heidelberg 14:00
2	9:19	☉5	HD Weststadt/Südstadt 9:22 - Heidelberg 9:26 ☉	1	14:00	☉1	HD-Schlierbach/Ziegelhausen 14:03 ☉ Neckargemünd 14:08 - Eberbach 14:27 - MOS-Neckarelz 14:47 - Osterburken 15:22 * nicht an allg. Feiertg.
2	9:27	☉2	HD Weststadt/Südstadt 9:30 - Heidelberg 9:32 ☉ Mannheim 9:51 - Kaiserslautern 10:59 * 28. Jul bis 2. Sep nur bis Heidelberg 9:32	1	14:09	☉5	Neckargemünd 14:15 ☉ Sinheim 14:22 * nicht an allg. Feiertg.
2	9:30	☉2/☉1	HD-Schlierbach/Ziegelhausen 9:33 ☉ Neckargemünd 9:38 - Eberbach 9:58 - MOS-Neckarelz 10:17 - Mosbach 10:23	2	14:19	☉1	HD Weststadt/Südstadt 14:22 - Heidelberg 14:26 ☉ * nicht an allg. Feiertg.
1	9:36	☉5	HD-Schlierbach/Ziegelhausen 9:39 ☉ Neckargemünd 9:44 - Sinheim 10:07 - Eppingen 10:26	2	14:27	☉2	HD Weststadt/Südstadt 14:30 - Heidelberg 14:32 ☉ Mannheim 14:33 - Kaiserslautern 15:59 * 28. Jul bis 2. Sep nur bis Heidelberg 14:30
2	9:47	☉51	HD Weststadt/Südstadt 9:50 - Heidelberg 9:54 ☉ * nicht an allg. Feiertg.	1	14:30	☉2/☉1	HD-Schlierbach/Ziegelhausen 14:38 - Neckargemünd 14:38 - Eberbach 14:57 - MOS-Neckarelz 15:17 - Mosbach 15:22 * nicht an allg. Feiertg.
1	9:54	RE 19337	Eberbach 10:16 - MOS-Neckarelz 10:31 ☉ Heilbronn 10:54 - Stuttgart 11:46 * 28. Jul bis 2. Sep nur bis Heilbronn 10:34 * nicht an allg. Feiertg.	2	14:31	☉5	HD Weststadt/Südstadt 14:33 - Heidelberg 14:37 ☉ * nicht an allg. Feiertg.
1	9:57	☉1	HD Weststadt/Südstadt 10:00 - Heidelberg 10:02 ☉ Mannheim 10:19 - Homburg 12:09 * 28. Jul bis 2. Sep nur bis Heidelberg 10:02	1	14:36	☉5	HD-Schlierbach/Ziegelhausen 14:44 - Neckargemünd 14:44 - Sinheim 15:26 Eppingen 15:26
1	10:00	☉1	HD-Schlierbach/Ziegelhausen 10:03 ☉ Neckargemünd 10:08 - Eberbach 10:28 - MOS-Neckarelz 10:47 - Osterburken 11:23 * nicht an allg. Feiertg.	2	14:47	☉51	HD Weststadt/Südstadt 14:50 - Heidelberg 14:54 ☉ * nicht an allg. Feiertg.
1			10:00	2	14:57	☉1	HD Weststadt/Südstadt 15:00 - Heidelberg 15:02 ☉ Mannheim 15:03 - Homburg 17:13 * 28. Jul bis 2. Sep nur bis Heidelberg 15:00

# European Practice - Connectivity



- Pontresina – Resort town - World heritage railway:
  - 4 platforms and junction of single lines
  - Clockface timetable – 1 train each hour each line



Clockface Timetable Elements



Victorian Local Meeting – 20-06-18



Standard view | Timetable | Travelcards & tickets | Station & services | Business travel | Leisure & holidays | Search earlier connections | Duration | Change trains | Occupancy rate | Platform

**R** Direction Scuol-Tarasp  
10:02 ● ————— ● 13:23      3 h 21 min    2    1 2      1

10:02 ● **Pontresina, Platform 1**

⊕ **R 1932** Direction Scuol-Tarasp

10:08 | Samedan, Platform 3

Change

10:16 ● Samedan, Platform 2

⊕ **IR 1132** Direction Chur     

12:03 | Chur, Platform 10

Change

12:09 ● Chur, Platform 9

⊕ **IC 3** 670 Direction Zürich HB      1 2 **FZ BZ RZ R**

13:23 ● **Zürich HB, Platform 9**

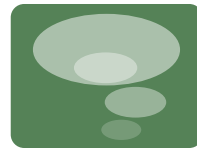
**This connection**

- Show on the map →
- Print ↓
- Enter in the calendar ↓

**Tickets from CHF 34.20**



# European Practice - Connectivity



- Interchange was across island platforms both times. 6 min allowances
- Same trip available every hour all day
- Trip is 211 km
  - Train Trip 3hrs 21 mins
  - Road Trip 3 hrs
  - Nowhere to put a car
- Moving people, not trains



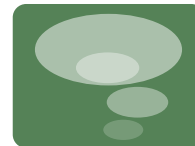
# Conclusion



- Clockface timetabling under the bonnet
  - A mix of operational and infrastructure measures
  - Does not happen by itself
  - Uses the resonances found in all rail networks
- Simple, low cost initiatives are core
  - Design connectivity for humans
  - Provide information
- Trade journey time for reliability and connectivity at the margin



# Questions?



- <https://pybconsulting.com.au>