

Passenger Rail Stations:

Component of station: tracks, platforms, connecting throughway (ramps, stairs, escalators), terminal building, parking, taxi and bus stops, etc.

Type of stations

- Through station: trains continue in the same direction
- Stub Station: (at end of line): trains may reverse directions

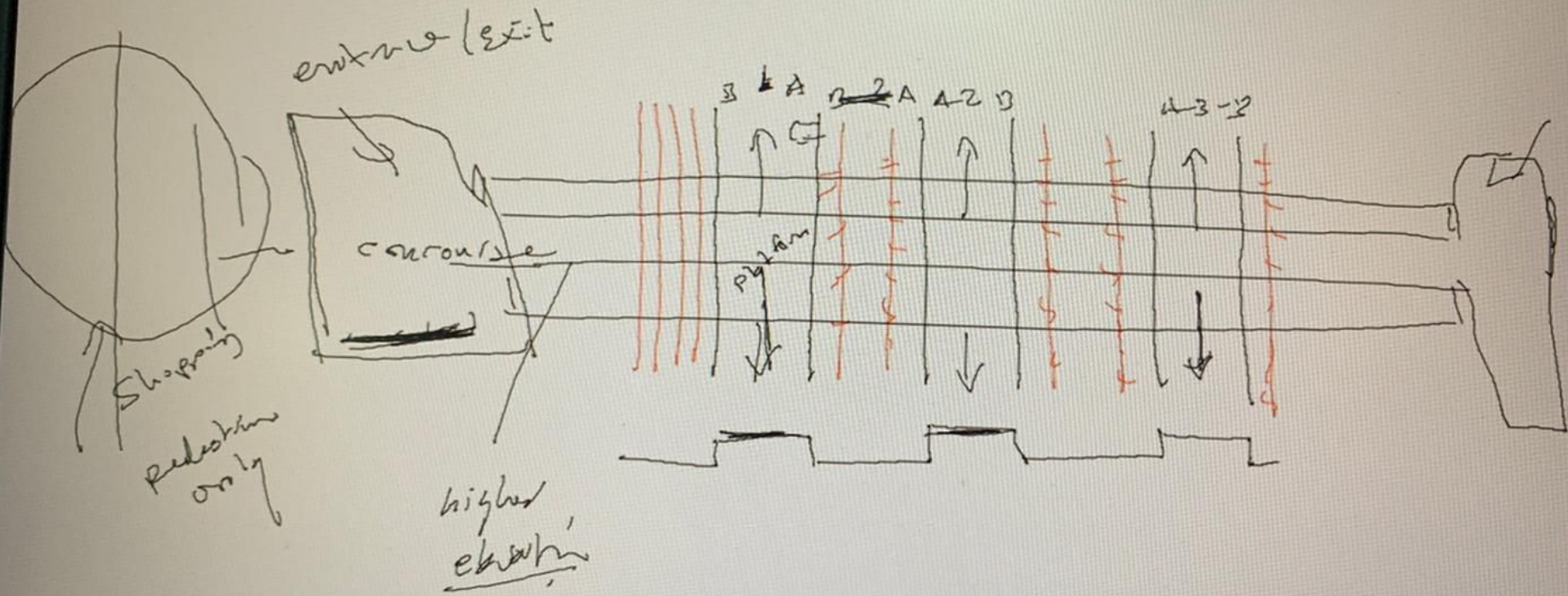
Single track: need one platform

2-tracks: need two platforms

4. tracks: needs grade separation

>4 tracks: need main terminal set up (two levels)

Railroad Passenger Terminal

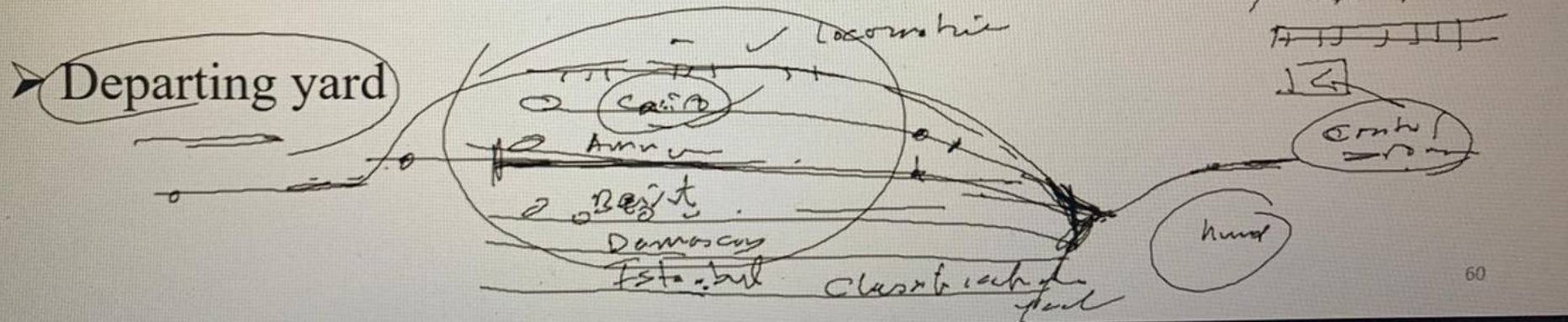


Platform width 2 – 4.5 m, f(passenger peak volume + platform/train length)

Urban metro usually have automatic fare collection, right hand passenger circulation

Freight Terminal (p. 496)

- Receiving yard
- Classification yard: distribution of freight car to different lines for different destinations (via gravity hump (calculated slopes), retarders, plus automatic classification via coding of car sides read by laser beams.



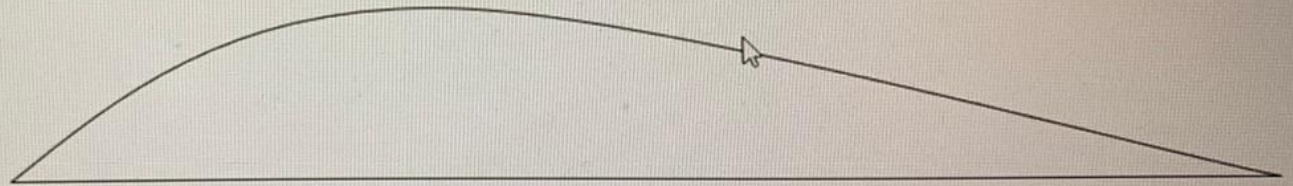
Lighter than air: balloons, gliders, blimps

Heavier than air:

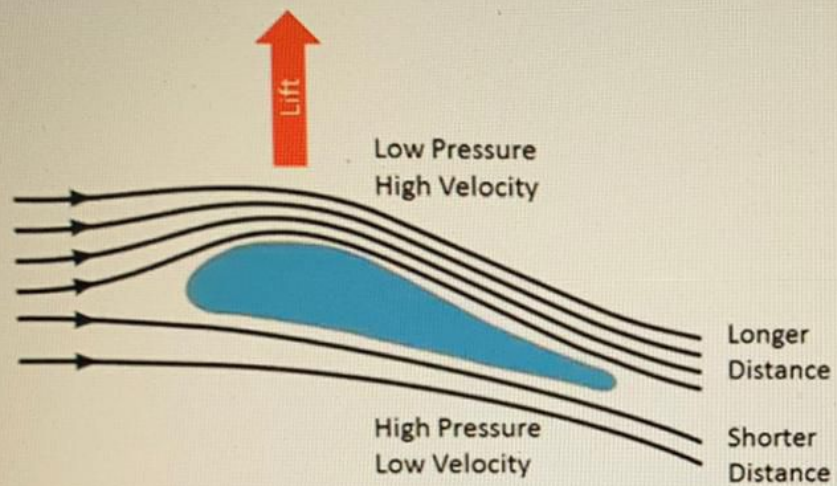
- 1903 : the Wright Brothers
- WWI:
- 1927 : 1st flight across the Atlantic
- WWII
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Bernoulli Principle: As the speed of fluids increase their density decrease

Wing design: upper wing distance is longer, thus for same time, speed is higher above wing thus less dense air which cause lift at a certain speed for each aircraft



Aerodynamic Lift – Explained by Bernoulli's Conservation of Energy Law



Also known as the "Longer Path" or "Equal Transit" Theory

