

Urban Rail in Changchun by Craig Moore (Sept 2017)

The capital of Jilin Province was founded only 200 years ago, and is famed for its automobile industry and rolling stock production (CNR/CRRC Changchun). The city was also the first in China to operate a LRT line and now offers the full gamut of urban rail provision - full metro, light rail and tram.

Metro and Light Rail provision is jointly operated by Changchun Rail Transit Corporation with 3 lines and 63km of revenue service (62 stations). 20.5km is underground (18 stations), the remainder being elevated or at grade.

Line 1 is a Full Metro and is the latest addition (2017) to the rail network in the city. It has 16.4km of revenue route and is fully underground (14 stations), running a north-south service from Beihuan, via the main railway station to Hongzuizi in the south. The line has 2 stations within the main railway station area. The quaintly named 'Northern stop of Changchun Station' (Changchunzhanbei) is accessed via a huge and confusing plaza in front of the Railway station, the confusion caused by scale and insufficient directional signage. This station is also served by LRT Line 4 (see below) but both facilities are currently unconnected and transfer requires new tickets and a lengthy walk. 700m south is 'Changchun Station' and eventually this will provide a nearby connection to LRT Line 3 (see below) but currently this full metro station is not operational and trains do not stop. Further south, the line passes Nanhu Lake (Gongnongguangchang Station) and Weixing Square (Weixingguangchang) which will eventually provide barrier-free integration with LRT Line 3.

Line 1 runs below a busy thoroughfare and entrance porticos are located at main junctions. These are substantial structures and quite unique in style with swirling support pillars and basic totems. All stations have a similar layout with a rectangular ticket hall housing security screening, customer office (no hard-copy information available), basic ticket machines which supply blue RFID cards (distance based fares - 2 to 3 yuan) and smart barriers. Many stations also have large art works along the side walls. Whilst there is station location/exit information there is surprisingly no system map at this level. There is a pale colour scheme and shiny newness, station distinction coming from differing ceiling designs. The pale theme is continued at platform level. These are very standard island platforms with full screens, line strip map, RTI screens (currently inoperable), and bold calligraphic station names, the red trim being the only colour element - whilst functional and clean, the stations on this line have little of the design flair now associated with newer lines in China. The CRRC stock is locally built and trains consist of 6 cars, powered by overhead supply. Train interiors are predominantly white with the exception of the pungent red seating. The carriages house the new schematic system map (including the 2 LRT lines) and there is electronic and audio information in Mandarin and English. The ride is very smooth and quiet with the exception of the blowing of the horn before arrival and when departing. This is something that also happens on the LRT lines and I have not come across this in other parts of China. Currently the line is not that well used - it takes 30mins to travel and services operate from 0600-2100, running at 8min base headways although there is no timetable and no RTI available.

This Metro line is complimented by the light rail lines, branded as '**Changchun Light Rail Transit**'. These were the original urban rail services in Changchun and run on standard gauge with overhead power supply. Shaped like a '4', the standard gauge 2-line system has 46.6km of revenue track including 4.1km of underground running. **Line 3** (31.1km/1.0km underground) is the busiest line on the system and opened 15 years ago as the first LRT type system in China. It runs from an interesting and busy station at the south of Changchun Railway station. The station here has separate entrance and exit buildings and platforms, punctured by a single rail line (a second line/third platform is used at peak times and for stabling). The trams stop at the very front of the station, the first carriage inaccessible due to the station entrance buildings. There are no automated ticket machines and the ticket office here is located in a separate building 15m from the station entrance, with a taxi rank and plentiful street hawkers in between. The line travels southwest at grade, running parallel to the heavy rail lines. This section has good speeds and the stations are well spaced and busy. Stations have side platforms and are quite basic but feature a lovely geographic route map (this map only shows line 3 and no connection to other provision). Station entrances are

square glass structures with maroon roofing. There is no totem, little directional signage and the buildings are quite unkempt and continually cramped with passengers. These station entrances are located above the platforms and so stairs and bridges have also to be negotiated. At Kuanpingqiao, the station lies below and perpendicular to the tram lines (see below) with the station exit 30m to the north of the tram stop of the same name. After 8.4km the line turns east and becomes elevated at Nanhudalu. This is the most substantial station on the original part of the line and is attached to a large office building.

Returning to grade, there is a short underground section at Guigudajie and a stretch of line that includes level crossings. The infrastructure and stations remain quite basic on this stretch and the level crossings are not barriered but have traffic lights, with priority given to car/pedestrian traffic, and so the LRT service has to dutifully wait its turn to proceed. Beyond Weiguangjie lies the newer part of the system opened in 2006. Weixingguangchang (Weixing Square) is housed in a 0.9km tunnel and the station is dim, dank and grubby with stairs to a basic irregularly shaped ticket hall. The entrance porticos here are oval-shaped glass structures with stairs down to the entrance hall. There is no totem and no sign to say that it is the entrance to the LRT. This is made more confusing by the costermongers' stalls spilling down the stairs from the local market. The juxtaposition between this entrance and that of the new Metro Line 1 across the road are startling. In time there will be full physical integration to Metro Line 1 here and building work of the connecting passenger tunnels is apace but for the moment there is no direct transfer. Beyond Weixingguangchang (15.2km) the line becomes elevated and line speeds are reduced. Here, stations are more substantial, with large ground level ticket hall, bulky roof structures, side platforms (with a semblance of a functioning RTI system) and information boards. At Linhejie there is transfer to the Line 4 station (Weixinglu Station) via stairs and walkway. This is a very busy station and offers some great views of both lines and the rail traffic. South east from here the line remains busy to Shijiguangchang (Shiji Square) where 1 in 3 services terminate. This is in the Nanguan area of the city and the line (with some grade running) passes recently developed areas with large sports and convention complexes and local tourist spots. Services operate from 0600-2100 with 8min base headways, and the interesting journey takes 1h05.

Line 4 is a 15.5km (3.1km underground) fully segregated line that has a Light Metro feel, although like Line 3, this has low-level platforms. The line forms the vertical section of the '4' shaped network. The line opened in 2011 with the northernmost section from 'Northern stop of Changchun station' (Changchunzhanbei) to Dongdaqiao, the last to be completed (2012). This section consists of a 3.1km/3 station underground run. As mentioned above, the station at Changchunzhanbei is separate from the Line 1 station of the same name and although there is evidence of the construction of passenger tunnels for barrier-free interchange, current transfer requires passengers to leave the system and undertake a quite lengthy and labourious transfer. This and the two other underground stations are dimly lit, cold, gloomy damp places and considering their young age (6 years) they are very disappointing and have aged prematurely. They have island platforms and information board (no RTI) including a pathetic schematic of the 2-line LRT system (this map is presented at all Line 4 stations but not at Line 3 stations). Beyond Weihuanggong the line becomes elevated and travels above the very busy Linhejie thoroughfare. The elevated section has noise reduction panels along the route but the stations are brighter, indeed this section houses the nicest stations on the system (e.g. Shironglu). These stations have low-level island platforms (no screens) and are substantial structures with ticket barriers located in the middle of the platform on the side exit portal before passengers travel down to the ground-level exits (stairs located at the end of the platform allow for direction change). At Weixinglu (11.3km) the elevated structure rises significantly as the line travels above Line 3. The station here provides free transfer to Line 3 (Linhejie) via an elevated walkway. Beyond here the line becomes less busy although the views of the urban area to Chechang are impressive. Operating times and frequencies are identical to Line 3 and the full journey takes 31mins.

Both light rail lines use locally produced Low-Floor LRT trains in 4-car articulated sets painted in a range of bold colours. The interiors have a mix of side and paired seating and have many deep internal stairs from the entrance areas, which give a chaotic feel to the interiors. Above the doors is a flattened 'X' strip map, Mandarin and English audio announcements are made and all signage is bi-lingual. Tickets are distance based (2-4 yuan) and currently are in the form of a green RFID card (Line 1 uses blue RFID cards).

With two distinct rail systems (Metro/LRT) this is a difficult network to summarise. The new metro line is not particularly inspiring but it does nudge a rather tired (but characterful) light rail system into a more modern setting. The retrospective integration is slowly happening and when complete, it will make the system more valuable to regular users. Current Line 1 mappage and totems brazenly show the new integrated structure before it is completed and it will be interesting to see how CCRT manage the assimilation of two systems, as their track record is not altogether notable - the integration of Line 4 with Line 3 was not comprehensive (i.e. different system maps/station design/platform information/signage). The fact that, currently, the three lines have three distinct maps does appear to highlight that an overarching approach to brand continues to be absent but it also wonderfully illustrates the evolution of cartographic trends in China and the new stylised schematic used on the metro is much superior to the most recent Line 4 offer – hopefully the new map is just the first element of a more unified, fresh urban rail system.

In addition, like Dalian, Changchun's Japanese/Russian influence has endowed the city with a first generation **tram system**. The 2-line (12.6km) network is essentially a single line with a 5km branch, operating from 0600-1950 and, although the system is a far cry from the heyday of the 1950s when a 7-line/50km system operated across the city, the trams are well used and serve the western part of the city adequately. Halts are pretty basic and schedules don't seem to exist - there are big time gaps followed by a bunching of 2 or 3 trams. Modern stock is used in the main although occasional heritage trams can still be seen (adorned with flowers). This is a nice little addition to Changchun's rail coverage.

Finally, mention can also be made of the **rail line to/from the airport** (station name: LongJia). The station is accessible from the airport terminal via a long underground passage and is well signed. The normal ticket purchase/triple checking for Chinese national railways applies here, so time is needed to purchase tickets and enter the station waiting area, especially at busy times. The station facilities are above ground but platforms are located in a 0.7km tunnel – and they are basic, austere and cold. Trains run 2 to 3 times per hour (not clockface) on their way to/from Jilin city and there are no stops between the airport and Changchun station. This stretch is on elevated structures for most of the 15min journey and is a much nicer and less expensive way (8 Yuan) to reach the city than the Airport Bus.