











Train Control and signalling-Manual control can yield 30 sec. headway at stations.

Imagine signal positions are at every 100m and we see to it that the signal indicates red if a Skybus is occupying the space between two signals.
 Normal braking distance at max speed: 250 m at 90 kmph

	Signal A	Space	Signal B	Space	Signal C		Signal D	Station
								
		100 m		100 m		100 m		
Skybus 1	80kmph		60 kmph		30 kmph		Stop/start 10kmph	Skybus 2
Distance needed to reduce to next speed Available	100m		70 m		35m			
	100m		100m		100m			

Speed Profile Displays

Skybus length is 20m. Driver will have full visibility of at least two signals.
 Every Red signal is permissive signal- the driver will halt for 2 seconds and slowly starts travelling at 10 kmph and watches for the **flashing red signal** at the rear of the Skybus preceding. The driver shall stop short of the Preceding Skybus 10m away.

The ADD also acts as an additional safety layer to enforce the above
 conditions in case driver fails at any stage and shall not give any driving instructions. in the initial version. The gap between departure of Skybus and arrival at the station for the following Skybus, in the worst case, is the scene, one Skybus is already standing at the station and another has arrived and waiting at 10m distance. The Skybus has to cover the 10m and it's own length to actually arrive at the station. We calculate the time it takes.
 The distance is 10m + 19m = 29m. Acceleration/deceleration taken at 1m/sec/sec . so $(29/2) = 1x^2/2$ or twice 10.7703 seconds. to arrive on platform. Now the doors open at 1m sec, takes 2 seconds, kept open for 15 seconds, doors close-another 2 sec, then departs the station. That means 19 seconds at station and adding 7 seconds for arrival/departure, even with manual operation and signals located every 100m, we can achieve a headway of 19 + 10.77=30 seconds.
 The specification for Skybus motors is to provide accn of 1.3m/sec/sec with ELTAS controls, which has already been proven in trials.
 If you take this value, headway works out to 28.4 sec
 Allow the Skybus in rear to creep towards Skybus in front at 1m/sec until the same reaches within 2m of the Skybus in front- then 29m will become 21 m and headway reduces to 27.0 sec.
 All platform in Skybus stations are designed to take two units of Skybus- So it should be practical to achieve 40 second headway without difficulty.

Doc: Skybus Headway-influence of manual driving and 3 aspect signalling./B.Rajaram Dt 200305