



Sky Train Corporation Transportation Consultants & Engineers

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Presenting the STC200 System; the Smart Port Initiative

Sky Train addresses the most effective Transportation Initiatives!

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As the concept of International Ship Container Transfer further expands, due to the opening of the expanded Panama Canal, and with more overland ship canals planned in other countries, it is time to assess a port bottleneck situation! Excess ship capacity now exists, and as shorter routes are available this also increases capacity and competition. This awareness has created new Partnerships that allow appropriate sizing of container ships (leading to increased capacity) to become more effective. Also air passenger transportation, ever expanding, is always a threat by greatly reducing travel time to destinations. Conceivably, with self-driving trucks, the next step will be the closing of small or Marginally Performing Ports.

Illustration from www.bromma.com



KEEP YOUR TERMINAL IN THE GREEN ZONE™



While most container ports are limited by many varied constraints, there also needs to be a Smart Port Movement that allows Customer Centricity, BTB insight, Electronics Internet of Things (IoT) and Technology to play a greater role in these arenas.

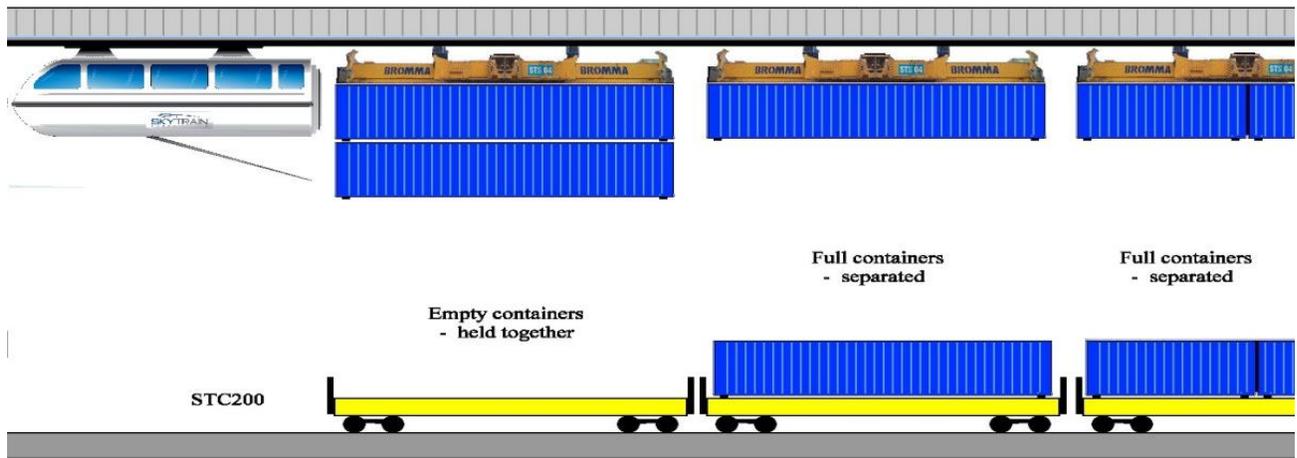
While we at STC have tracked and met with Smart City Planners understanding their problems and solutions, we focus on a somewhat better defined and more effective target, Sea Ports.

Our select team has met with the Bromma port equipment manufacturers to define Fit and Function. We have; some a lifetime, our team over a decade, identified the biggest improvements.

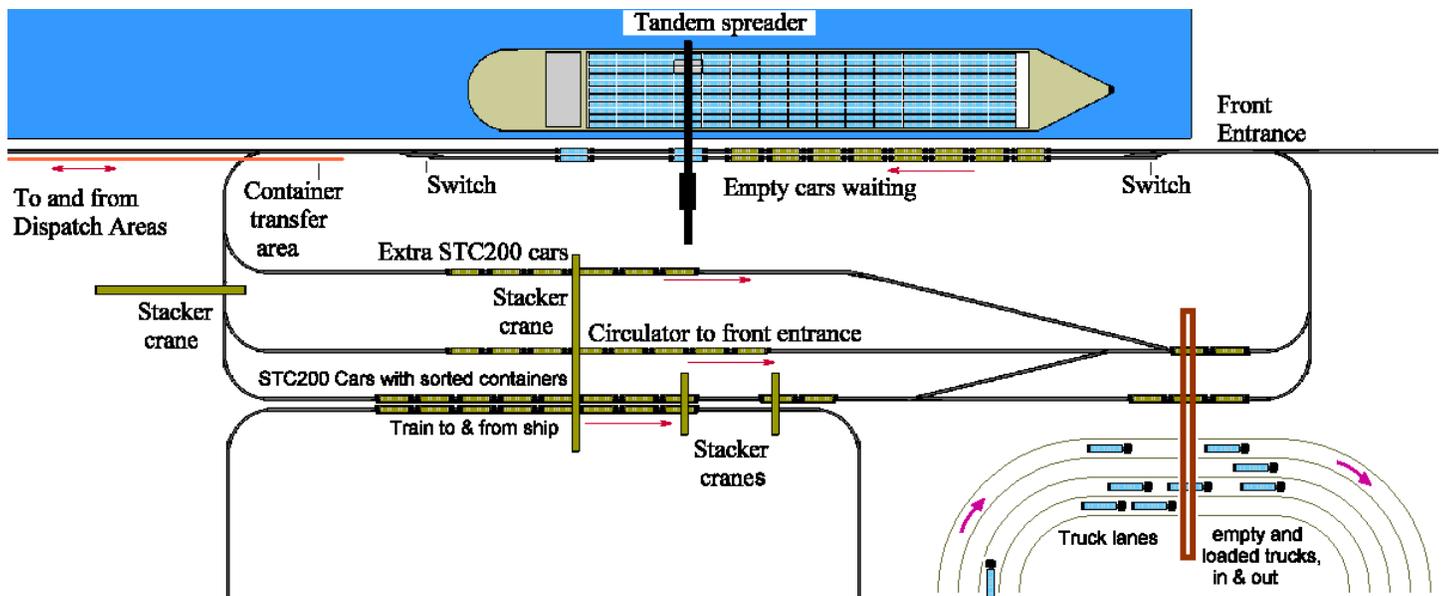
Our evaluation started in 2001, and the design on the left was submitted by architect Alvaro Senabria H. The design below is our latest asset with the longest lead item, the composite Crew Cab tooling already available.



Sky Train Corporation has a system design called STC200. Over many years we have assembled sophisticated associates and shop to this end. Although propulsion could be Hybrid, we have the ability to go to the extreme and supply hydrogen/fuel cell or desired alternative propulsion, thus enhancing the port image.



As shown below (showing the loading of a ship), STC envisions a fleet of Enhanced automated self-propelled rail-carried flatcars, labelled "STC200", moving individually in a circulatory fashion between the container handling cranes and transfer points, where the containers could be transferred to/from Stackers or beam carried vehicles, labelled "STC150".



The track along the pier will consist of a rail with the following sections (from right to left):

- 1) A "front entrance" where the rail(s) merge;
- 2) A switch that separates the cars onto parallel rails with 6" or safe space in between cars;
- 3) The loading/unloading area, which is at least as long as the biggest anticipated ships;
- 4) Switches that merge the two rails into one;
- 5) A container transfer area using Rail Transport or Trucks for Containers & Trailers *using straddle loaders;



Outlining the benefits of this system, we get:

- 1) Ship loading time of empty containers pre-assembled in vertical pairs upon receipt by using manual twist locks reduces time of loading and unloading of empties by 50%:
 - a. For the Pacific Coast exports are 1/3 lower then imports therefore saving around 9% of total load/unload time per ship using vertically connected empties;

- b. If prudent, connected empties could be one layer higher allowing use of existing tie-down systems securing to the lower of the pair, increases ship capacity < 5%;
- 2) Stacker time in the yard has also been reduced 50% once they are connected;
- 3) The loading of full containers can use the automatic twist locks double stacking for yard movement safety:
 - a. Stacking reduces the needed yard service vehicles by 50%;
 - b. This frees up space needed for these vehicles for container sorting etc.
 - c. Reducing many tractors, drivers and trailers;
 - I. Service lifetimes of a rail vehicle = 3 sets of (c.) in 40 years;
 - II. Electric rail propulsion saves more than 85% of energy and requires less maintenance no tires;
 - III. Large port estimate replace straddle loaders and 50 operators use them to load moving trains;
- 4) Select Sky Train innovators interface as consultant guides to make use of latest technologies, assisting in the operator and manufacturing selection process;
 - a. We act as coordinators to train, transplant technologies and participate in new innovation dissemination to other desired locations as designated by management;
 - b. We participate in the transition to use Cloud Coordinated Integrated Software
 - c. STC does not replace existing vendors or system operators; is non-threatening to unions or existing vendors, operators or transporters;
 - i. Most ports have existing rail operating talent for hire nearby;
 - ii. We pride ourselves working to integrate our new systems with existing technologies;
 - iii. We already have an international reach to work in international locations;
 - iv. We are a technical library documenting and registering technology;
- 5) We are identifying international partners that will become stockholders of STC, creating a comfortable partnership to increase mutual profits;
- 6) We contently dwell on the first and last mile of delivery speeding and prioritizing throughput; freeing up capital and inventory in a logical safe secure manner;
 - a. Port delay especially effects perishable product: India claims 25%, Nigeria 75% loss, a huge penalty to shippers and increased prices to growing populations;

We at STC and associates will select technology that solves the greatest need of the continuous port location and also consider the Logistic needs of the greater region, See Video Below!

Considering a 50 or 100 year life cycle, assess costs of variable resources that could impact future cost:

- A. Labor complexity; working holidays, contiguous shifts with breaks, lunch and the various features.
- B. Automation, effects on the environment and energy consumption.
- C. Simplicity in fare collection, identifying premiums and discount means of varied transport.
- D. Utility of use, the ability to handle freight, speeding railroad, truck and trailer loading.
- E. Extending operating service hours and minimizing costs.

Also, to increase future capacity, see National ratings and locations:

- F. www.worldbank.org/en/news/infographic/2016/06/28/logistics-how-countries-stack-up?CID=ECR TT worldbank EN EXT&utm_content=buffer5a973&utm_medium=social&utm_source=linkedin.com&utm_campaign=buffer World Logistics
- G. INTERACTIVE WORLD RANKING MAP: <https://datawrapper.dwcdn.net/6XK7o/5/>
- H. IDC WHITE PAPER The Extended Supply Chain: [Download White Paper Now!](#)
- I. **Video for 4.25 minute Overview: [Watch Now!](#)**
- J. **Florida DOT progress & success for freight: [Watch Now!](#)**

We look forward to share a conversation regarding our plan to implement these and other improvements.

Respectfully: The Sky Train Associates & Innovators