Concept High-Productivity STS Cranes

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Patrick McCarthy, PE  
Principal, Senior Engineer  
Liftech Consultants Inc.  
www.Liftech.net

Contributors  
Erik Soderberg, SE  
Michael Jordan, SE  
Simo Hoite, PE
Ultra Large Container Vessels

CMA CGM Benjamin Franklin at Port of Long Beach
Recent Crane Systems

Conventional
Tandem main hoist lifts
Cranes on either side
Semi-automation with added shore hoist
Remote operations
1958 - The First STS Crane
(OK, not so “Recent”)

1958 Matson
Paceco
Outreach 23.8 m
Gage 10.4 m
Lift height 15.5 m
Rated load 24 t
24 foot box
12 to 15 lifts an hour
Conventional STS Crane
Cranes on Either Side

“Ship in a Slip” – Ceres Amsterdam
Tandem Hoist
Dual Hoist – Triple Spreader
ECT Dual Hoist by Nelcon
(1970s)
Automated Dual Trolley
Remote Operations
Future Crane Systems

Floaterm
Liftech Supercrane
Paceco Supertainer
Delft University Carrier Crane
APMT FastNet
NGICT Crane System
Floaterm – Plan View
Floaterm – Elevation View
Paceco Supertainer
Liftech Supercrane

SINGLE SHORE HOIST ARRANGEMENT
TANDEM AGVS
Liftech Supercrane – End View

WATERSIDE SECTION A-A

LANDSIDE SECTION B-B
Carrier Crane – Delft University
APMT FastNet System
APMT FastNet System
NGICT Crane System
Conclusion

Ultra large container ships need increased STS crane productivity.

A variety of recent design changes have occurred including lifting multiple 20 ft (or 40 ft) containers, increased automation, remote operation, and increased use of shore hoist systems.

Concepts have been developed for potential future systems.

Some design issues have been resolved while others remain.

As demand increases, so does the probability of an unconventional system being built that dramatically improves productivity.
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Based on 2016 Ports, 2015 Cavotec meeting.

**Quality Assurance Review:**

Editor:  Erik Soderberg

Editor:  Patrick McCarthy

Principal:  Erik Soderberg