

PORT & TERMINAL Technology

2018

10th International Conference & Exhibition, Charleston, SC, USA

Adapting Cranes to ULCV

Methods – Then and Now



A Brief History

- Ideal-X
- Maiden Voyage – April 26, 1956
- 101 TEUs (58 total 35-ft. units)





Sea-Land McLean

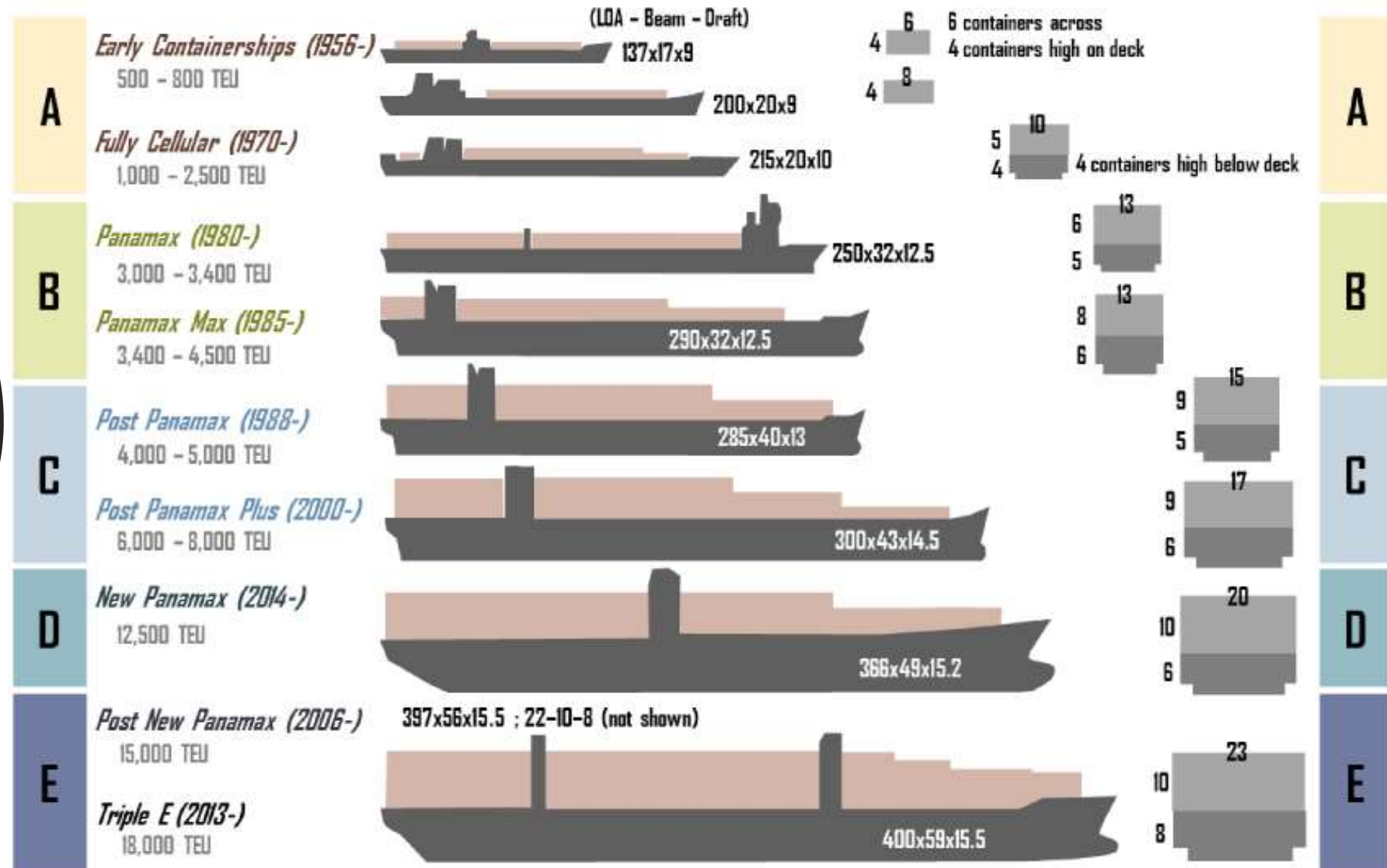
- 1972
- One of eight SL-7 Class vessels
- 1,968 TEU
- Top speed – 33 knots
- East Coast U.S. to Europe in 6 days

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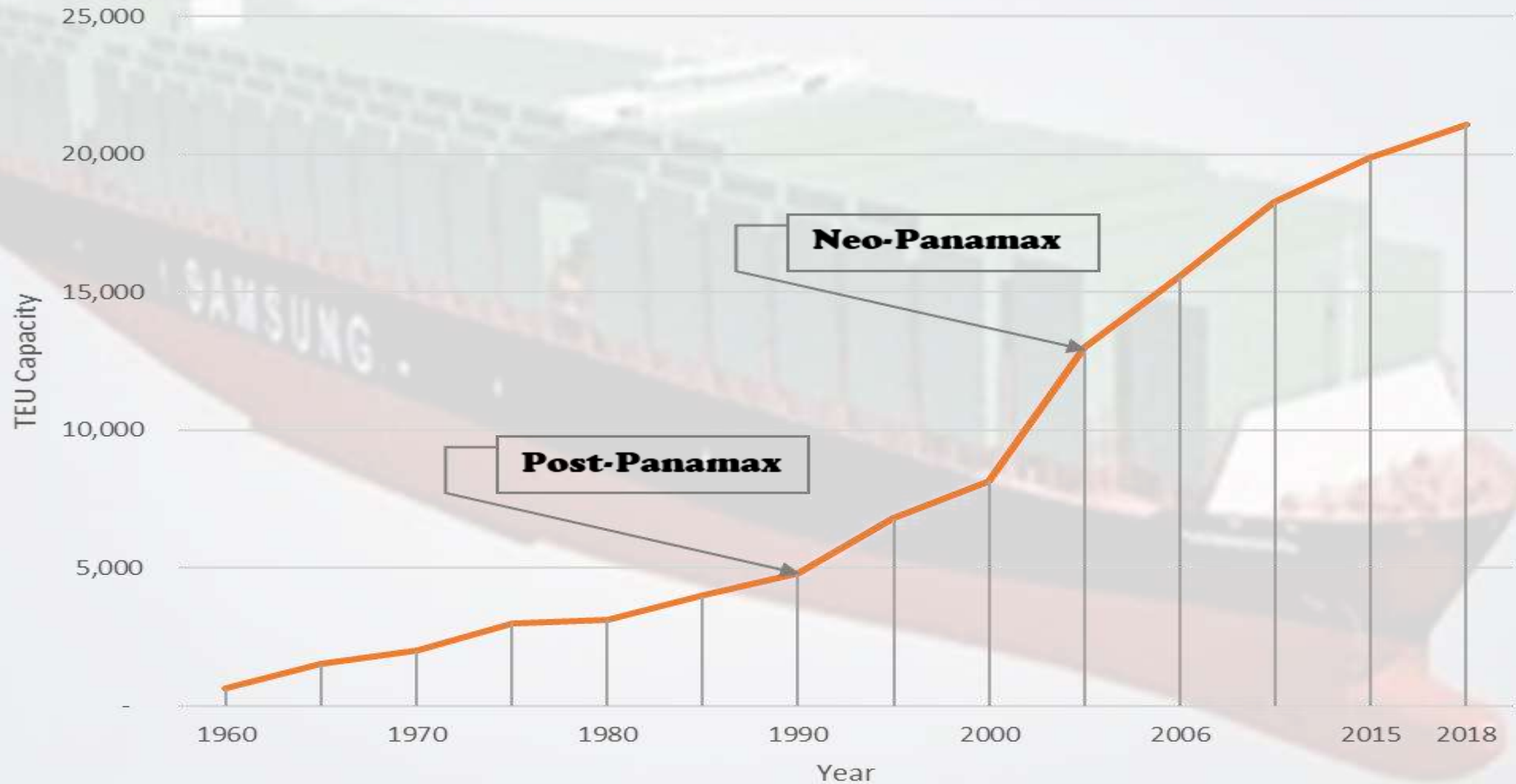
- February 2018
- 20,776 TEUs
- Top speed – 22 knots
- Economy of Scale
- Lower capital investment and operating cost per TEU
- Voyage cost – 45% less than a post-Panamax 8,500 TEU vessel



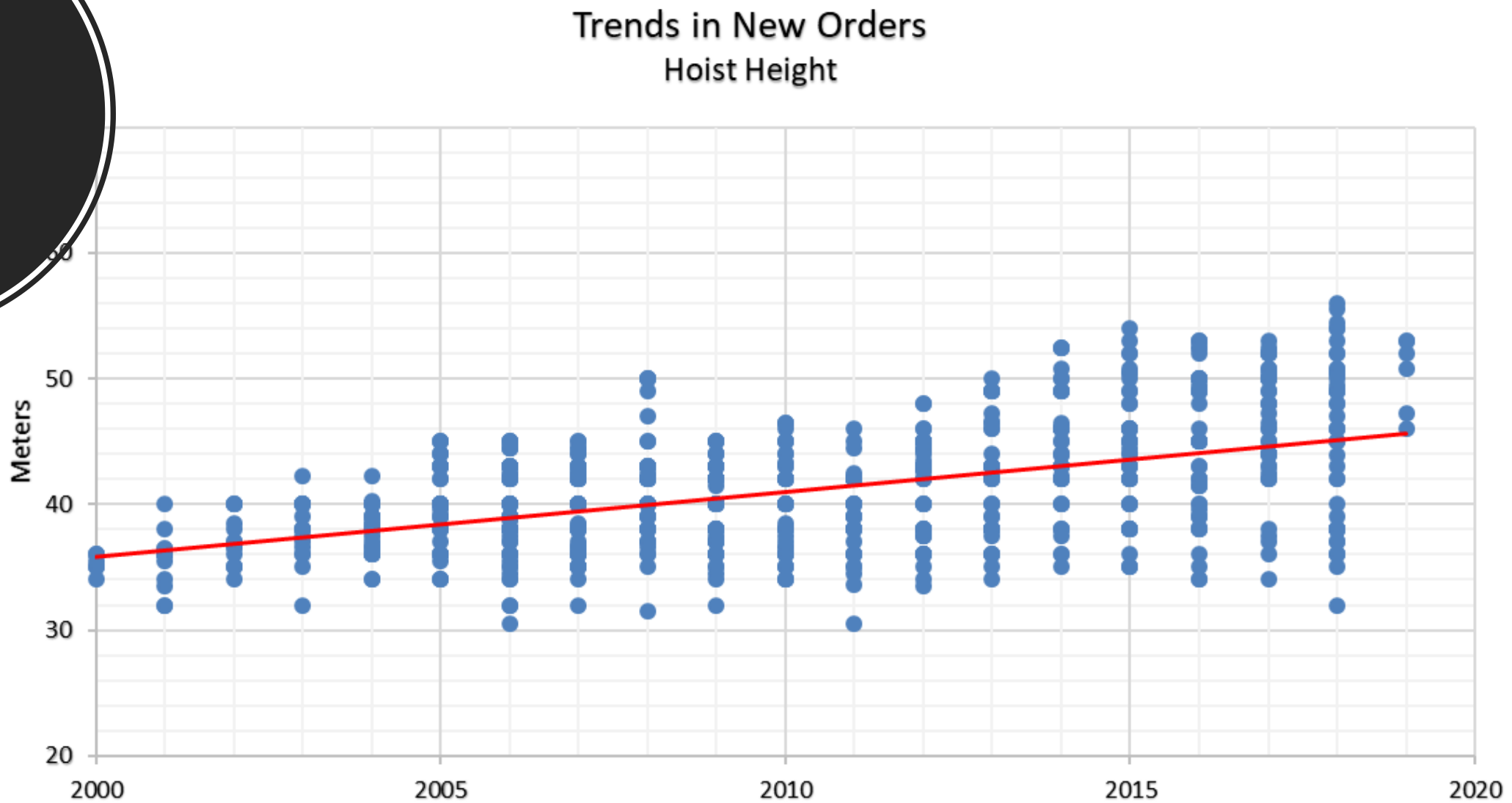
Evolution of Container Vessels



Evolution of Container Ships



New Crane Orders

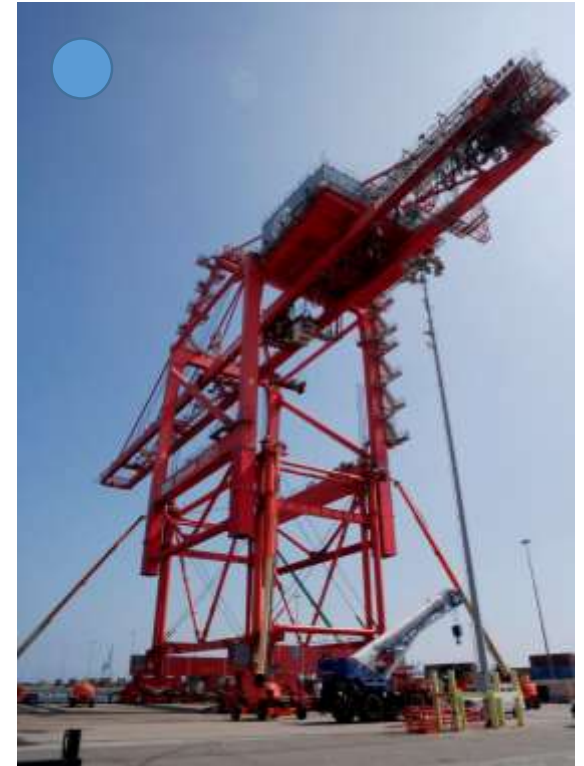


Playing Catch-Up





The Early Days of Crane Raises



Crane Raising - Evolved

New Technologies

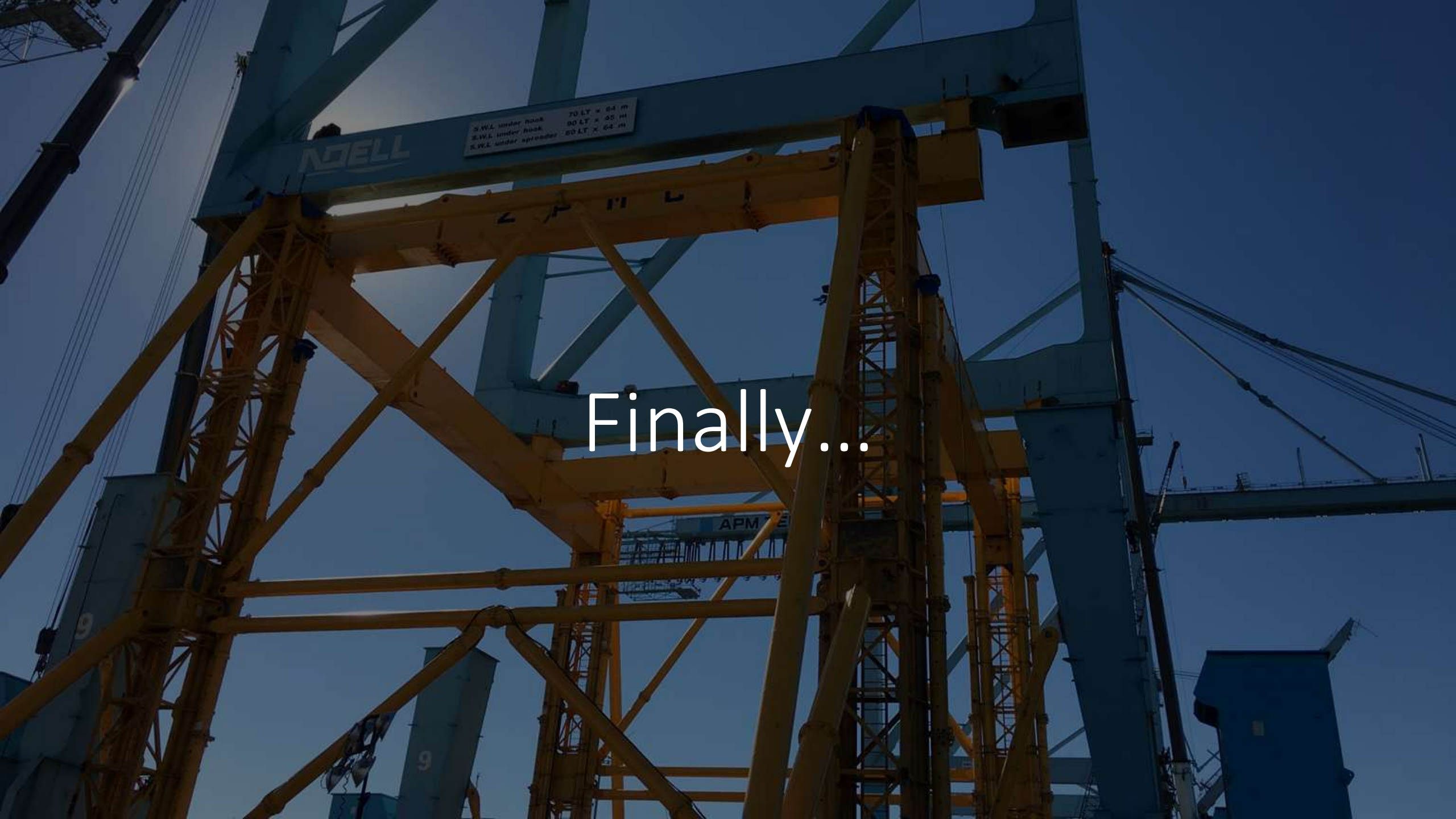
- Dedicated, specially designed for container cranes
- Meet wind and seismic requirements
- Computer controlled
- Crane mounted or ground based





Considerations

- Total lift height
- Added crane weight and wharf loading
- Age of subject crane(s) and potential extended useful life
- Number of cranes to raise.
- Hoist drum modifications
- Service hoist replacement
- Extended elevator mast and access stairs
- Cable reel modifications or replacement
- Spreader cable and cable reel
- Frame stiffening
- Crane control upgrades
- Upgraded lighting
- Time out of service
- Cost



SWL under hook 70 LT x 64 m
SWL under hook 90 LT x 55 m
SWL under spreader 60 LT x 64 m

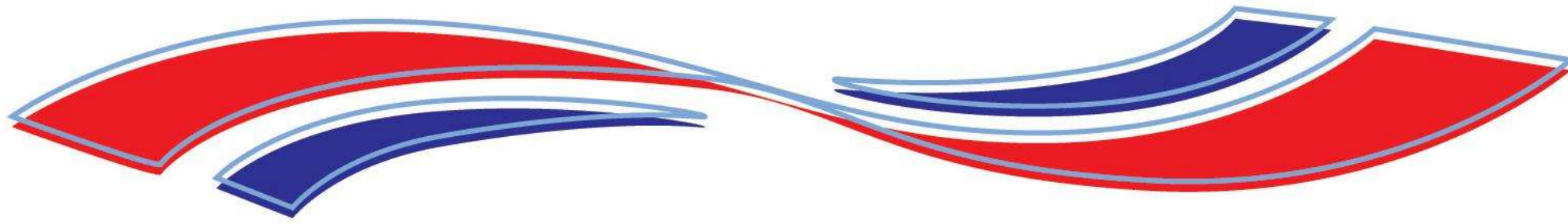
Finally...

APM

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2018

Thanks!