

Los Angeles/Long Beach Harbor Safety Committee  
**CERTIFIED BOLLARD PULL TEST RESULTS**  
 As of July 2009

**AMNAV MARITIME SERVICES\*\*\***

<b>Name</b>	<b>Total HP (Adv)</b>	<b>Ahead Kips</b>	<b>Astern Kips</b>	<b>Prop</b>	<b>Length</b>	<b>Test Port</b>	<b>Bollard Pull Issued Date (and ETIP extension status when applicable)</b>
SANDRA HUGH	5000	132.86	135.04	Z		Longview, Washington	9/11/07
INDEPENDENCE	5000	130	135.14	Z	73.4	Longview, WA	4/9/07

\*\*\* Updated bollard pull information and Escort Tug Inspection Program (ETIP) information are available from the Marine Exchange of Southern California Web page: [www.mxsocal.org](http://www.mxsocal.org). ETIP compliant vessels have received an extension on their bollard pull date from the State of California.

Note: Pursuant to State Regulations, tugs must have their bollard pull re-tested every three years or be accepted into the ETIP to extend their bollard pull date.

Los Angeles/Long Beach Harbor Safety Committee  
**CERTIFIED BOLLARD PULL TEST RESULTS**  
 As of June 2010

**CROWLEY MARINE SERVICES, INC.\*\*\***

Name	Total HP (Adv)	Ahead Kips	Astern Kips	Prop	Length	Test Port	Bollard Pull Issued Date (and ETIP extension status when applicable)
SCOUT	-	-	104.	T	103	Richmond	12/07/09
MASTER	4800	104.6	87.66	TR	103	LB	5/10/10
LEADER	4800		117.88	TR	103	LB	9/29/09
ADMIRAL	4800		108.80	TR	103	LB	11/2/09

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Note: Pursuant to State Regulations, tugs must have their bollard pull re-tested every three years or be accepted into the ETIP to extend their bollard pull date.

## DEPARTMENT OF FISH AND GAME

1416 NINTH STREET  
 P. O. BOX 944209  
 SACRAMENTO, CA 94214-2090  
 Telephone (916) 445-9338

RECEIVE

SEP 23 1998

James J. Macaulay

September 23, 1998

Mr. James J. Macaulay  
 Regional Manager, Pacific Operations  
 Crowley Marine Services, Inc.  
 Pier D, Berths D47-49  
 Long Beach, California 90802

Dear Mr. Macaulay:

You recently submitted the Glosten Associates alternative compliance methodology as applied to your harbor class escort tugs to this office for review and approval. I find that this methodology includes all elements necessary to meet the alternative compliance requirements of the *Escort Tug Program for the Los Angeles/Long Beach Harbor* found in Title 14, California Code of Regulations Sections 851.20, et seq.

Specifically, Glosten's *Shipman Simulations with Harbor Class Tugs in LA/LB for Alternative Compliance*, dated September 4, 1998, applies the same assumptions used to develop the tug-to-tanker matching matrix found in Title 14, California Code of Regulations, Section 851.27. Consistent with these regulations, Glosten has determined that a pair of Crowley's Harbor Class tugs have the capability of turning a 340,000 long ton displacement tanker 47° at a speed of 5 knots within the available 4,000 foot head reach, and will stop this same size tanker at a speed of 4 knots, well within that headreach distance.

I appreciate the efforts of Crowley Maritime Services to develop a safe and effective tank vessel escort service within the Los Angeles/Long Beach Harbor. Should you have any questions, please contact me at the above address or telephone number, or you may contact Ms. Michelle Garcia, of my staff, at (916) 324-9782.

Sincerely,



Pete Bontadelli  
 Administrator  
 Office of Spill Prevention  
 and Response

cc: Mr. Robert M. Barker  
 Director of Security

Los Angeles/Long Beach Harbor Safety Committee  
**CERTIFIED BOLLARD PULL TEST RESULTS**

As of  
 January 2012

**FOSS MARITIME\*\*\***

Name	Total HP (Adv)	Ahead Kips	Astern Kips	Prop	Length	Test Port	Bollard Pull Issued Date (and ETIP extension status when applicable)
CAMPBELL FOSS	5000	130.41	138.27	Z	78	Bothell, WA	12/8/11 (ETIP extension)
BRYNN FOSS	3000	105.2	89.7	Z		Pt. Tacoma, WA	8/3/07
ALTA JUNE	5000	133.52	129.52	Z	73.4	Pt. Tacoma, WA	8/6/08
CAROLYN DOROTHY	5080	127.3	125.4	Z	78	Pt. Tacoma, WA	1/27/09
ARTHUR FOSS			109.31	TR		Richmond, CA	12/19/08 (ETIP extension)
PACIFIC EXPLORER	4300	117.1		T	105	Richmond, CA	12/8/03

\*\*\* Updated bollard pull information and **Escort Tug Inspection Program (ETIP)** information are available from the Marine Exchange of Southern California Web page: [www.mxsocal.org](http://www.mxsocal.org). ETIP compliant vessels have received an extension on their bollard pull date from the State of California.

Note: Pursuant to State Regulations, tugs must have their bollard pull re-tested every three years or be accepted into the ETIP to extend their bollard pull date.

1700 K Street, Suite 250  
Post Office Box 944209  
Sacramento, California 94244-2090  
(916) 327-9946

November 16, 2004

Mr. Wendell H. Koi, Manager  
Foss Maritime  
Pier D, Berth D-35  
Long Beach, California 90801

COPY

Dear Mr. Koi:

This letter is in response to your correspondence of October 20, 2004; Request for Escort Tug Alternate Compliance dated February 11, 2004; and subsequent conversations, in which you requested approval of the alternate measurement for the breaking force of the escort vessels BRYNN FOSS and PACIFIC ESCORT. The alternate compliance report and calculations were completed by Glosten Associates, whom I have approved for such work. Your request is approved as follows:

For the Escort Vessels BRYNN FOSS and PACIFIC ESCORT:

As set forth in the Tank Vessel Escort Regulations for the Los Angeles/Long Beach Harbor (amended October 27, 2004), the BRYNN FOSS and the PACIFIC ESCORT may escort tank vessels up to 240,000 long tons displacement.

The BRYNN FOSS and PACIFIC ESCORT must be used as a team in accordance with the Alternate Compliance Report (file numbers 03108 and 031059, both dated January 2004) completed by Glosten Associates.

The escort vessels must adhere to the conditions as stated on page 3 of the above mentioned Alternate Compliance Report, deviations from these conditions are not authorized and may result in a violation of the tug escort requirements and regulations.

A copy of the Alternate Compliance Report must be available for reference aboard both the BRYNN FOSS and the PACIFIC ESCORT.

In accordance with section 851.23(a) of the regulations, the rating of each escort vessel must be re-measured within three years from the date of measurement, or sooner if the operating capability or braking force of either escort vessel is degraded by 10 percent or more.

This letter of approval will expire whenever the Bollard Pull Certifications for either the BRYNN FOSS or the PACIFIC ESCORT expire. Please ensure that both escort vessels maintain a current Bollard Pull Certification.

Mr. Wendell H. Koi  
November 16, 2004  
Page 2

Should you have any questions, you may contact me at the letterhead address, or you may call Mr. Jack Geck, Oil Spill Prevention Supervisor, at (916) 323-4664.

Sincerely,

Carlton D. Moore  
Administrator  
Office of Spill Prevention and Response

cc: Captain M.H.K. "Manny" Aschemeyer  
Marine Exchange of Los Angeles-Long Beach Harbor, Inc.  
3601 S. Gaffey Street, Building 803  
San Pedro, California 90733

Mr. Scott Merritt, Manager  
Foss Maritime  
660W. Ewing Street  
Seattle, Washington 98119-1587

Mr. Jack Geck  
Marine Safety Branch  
Sacramento, California

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Ospr-rf, chron



State of California – The Resources Agency  
**DEPARTMENT OF FISH AND GAME**  
<http://www.dfg.ca.gov>  
1700 K Street, Suite 250  
Post Office Box 944209  
Sacramento, California 94244  
(916) 327-9846

ARNOLD SCHWARZENEGGER, Governor

**Flex  
YOUR  
POWER**



November 20, 2008

Mr. Robert Gregory  
Regional Operations Manager, Southern California  
Foss Maritime Company  
Pier D, Berth D-35  
Post Office Box 1940  
Long Beach, California 90801

Subject: Approval, Alternate Compliance (AC) Request Dolphin-Class Tractor Tugs

Dear Mr. Gregory:

This letter is in response to your submittal of the Glosten Associates document dated 10 September 2008, entitled *Alternate Compliance Report Simulations using Foss Maritime Dolphin-Class Tractor Tugs for Tanker Escort in Los Angeles and Long Beach, California*. The Office of Spill Prevention and Response (OSPR) has completed its review of your submission and your request for AC is approved. OSPR has not modified, restricted or imposed any additional constraints that are not otherwise specified within your AC proposal.

Your approval for AC to the California Code of Regulations, Title 14, section 851.27 is based explicitly upon your AC request and subject to the parameters set forth within Glosten Associates document dated 10 September 2008. Deviations from the conditions prescribed in your proposal may result in a tug that is not capable of assisting a disabled tanker.

This letter of approval for AC remains valid for each Foss Maritime Dolphin-Class tractor tug that participates in and remains compliant with the State's escort tug inspection program; moreover, for each Dolphin-Class tractor tug that poses a valid/current bollard pull certificate.

I appreciate the efforts of Foss Maritime Company in developing a safe and effective tank vessel escort service. If you have any questions do not hesitate to contact Mr. Mike Coyne by telephone at (916) 324-5659 or by e-mail at [mcoyne@ospr.dfg.ca.gov](mailto:mcoyne@ospr.dfg.ca.gov).

Sincerely,

T. L. Mar  
Chief, Marine Safety Branch  
Office of Spill Prevention and Response

*Conserving California's Wildlife Since 1870*

Los Angeles/Long Beach Harbor Safety Committee  
**CERTIFIED BOLLARD PULL TEST RESULTS**  
 As of May 2011

**MILLENNIUM MARITIME\*\*\***

Name	Total HP (Adv)	Ahead Kips	Astern Kips	Prop	Length	Test Port	Bollard Pull Issued Date (and ETIP extension status when applicable)
MILLENNIUM MAVERICK	4300	116.12	106.58	Z	100	LA	5/22/03 (ETIP extension)
TIM QUIGG	3600	99.28	90.36	Z	80	LA	5/19/04 (ETIP extension)
MILLENNIUM FALCON	4400	125.96	115.44	Z	105	LA	1/17/03 (ETIP extension)
MILLENNIUM STAR	4400	129.24	118.76	Z	105	LA	5/22/03 (ETIP extension)
MILLENNIUM DAWN	4400	128.50	109.	Z	105	Seattle	3/26/02 (ETIP extension)
JOHN QUIGG	3600	98.60	91.05	Z		SFO	3/3/08

\*\*\* Updated bollard pull information and Escort Tug Inspection Program (ETIP) information are available from the Marine Exchange of Southern California Web page: [www.mxsocal.org](http://www.mxsocal.org). ETIP compliant vessels have received an extension on their bollard pull date from the State of California.

Note: Pursuant to State Regulations, tugs must have their bollard pull re-tested every three years or be accepted into the ETIP to extend their bollard pull date.



State of California - The Resources Agency

## DEPARTMENT OF FISH AND GAME

<http://www.dfg.ca.gov>  
 1700 K Street, Suite 250  
 Post Office Box 944209  
 Sacramento, California 94244-2090  
 (916) 327-9948

October 8, 2004



Mr. Bo H. Jun  
 Millennium Maritime  
 Post Office Box 950  
 San Pedro, California 90733

Dear Mr. Jun:

The Office of Spill Prevention and Response (OSPR) has approved your request for alternative compliance to the California Code of Regulations, Title 14, section 851.27. Specifically, Glosen Associates, in the document entitled "Simulations Using Millennium Maritime Escort Tugs For Tanker Escort In LA/LB, Revised September 2004, Alternative Compliance Proposal," demonstrated that the following tugboat combinations will generate sufficient forces to stop or turn 340,000 L/T displacement tankers, in compliance with California's regulatory requirements (see pages 4 and 5 of the Revised September 2004, Alternative Compliance Proposal).

- |  |  |
|--|--|
| 1. Millennium Falcon / Millennium Star     | 19. Millennium Falcon / HMS Frontier   |
| 2. Millennium Falcon / Millennium Dawn     | 20. Millennium Star / HMS Frontier     |
| 3. Millennium Star / Millennium Dawn       | 21. Millennium Dawn / HMS Frontier     |
| 4. Millennium Falcon / Millennium Maverick | 22. Millennium Falcon / Tim Quigg      |
| 5. Millennium Falcon / Z-Four              | 23. Millennium Star / Tim Quigg        |
| 6. Millennium Falcon / Z-Five              | 24. Millennium Dawn / Tim Quigg        |
| 7. Millennium Dawn / Millennium Maverick   | 25. Millennium Maverick / Escort Eagle |
| 8. Millennium Dawn / Z-Four                | 26. Millennium Maverick / Z-Three      |
| 9. Millennium Dawn / Z-Five                | 27. Millennium Maverick / Z-Four       |
| 10. Millennium Star / Millennium Maverick  | 28. Millennium Maverick / Z-Five       |
| 11. Millennium Star / Z-Four               | 29. Millennium Maverick / HMS Frontier |
| 12. Millennium Star / Z-Five               | 30. Millennium Maverick / Tim Quigg    |
| 13. Millennium Falcon / Escort Eagle       | 31. Z-Four / Z-Three                   |
| 14. Millennium Star / Escort Eagle         | 32. Z-Four / Z-Five                    |
| 15. Millennium Dawn / Escort Eagle         | 33. Z-Four / HMS Frontier              |
| 16. Millennium Falcon / Z-Three            | 34. Z-Four / Tim Quigg                 |
| 17. Millennium Star / Z-Three              | 35. Z-Five / Z-Three                   |
| 18. Millennium Dawn / Z-Three              | 36. Z-Five / HMS Frontier              |
|  | 37. Z-Five / Tim Quigg                 |

*Conserving California's Wildlife Since 1870*

Mr. Bo H. Jun  
October 8, 2004  
Page 2

Your approval for alternative compliance to the California Code of Regulations, Title 14, and section 851.27 is contingent upon strict adherence to section 851.23 of the regulations to include, but not be limited to:

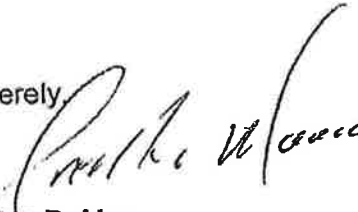
- Escort tug companies shall provide the Los Angeles/Long Beach Harbor Safety Committee with the results of the static bollard pull tests performed measurements taken pursuant to the provisions of this subchapter.
- Results of any and all static bollard pull measurements shall be inventoried and published by the Marine Exchange.
- Escort tugs which do not have current bollard pull certifications on file with the Marine Exchange and the Harbor Safety Committee or which do not meet the requirements for alternative compliance for bollard pull measurements, cannot be used for the escort of tank vessels in the Los Angeles/Long Beach Harbor.
- The escort tug's static bollard pull must be re-measured and certified at least once every three years from the date of the initial measurement, or anytime that the escort tug has been modified so as to affect its static bollard pull capabilities. The new measurements must be reported to the Los Angeles/Long Beach Harbor Safety Committee and be on file with the Marine Exchange.
- The Surveyor for the classification society shall be aboard the escort tug during the measurement process to verify that the bollard pull report is correct.
- The Surveyor for the classification society shall determine the escort tug's static bollard pull capacity by averaging the forces recorded (without any significant tendency of decline) for a period of at least 15 minutes while maintaining a fixed reading with the engine(s) operating at the manufacturer's recommended continuous output.
- The Surveyor for the classification society shall sign the completed "BOLLARD PULL REPORT" of the Los Angeles/Long Beach Harbor Safety Committee.
- The Surveyor for the classification society shall sign and issue a "BOLLARD PULL CERTIFICATE".

This letter of approval for alternative compliance remains valid until a bollard pull test certificate expires for any of the above mentioned vessels. Please provide our office with the results from the next bollard pull test(s) and a new approval letter for alternative compliance will be generated.

Mr. Bo H. Jun  
October 8, 2004  
Page 3

We appreciate the efforts of Millennium Maritime, to develop safe and effective tank vessel escort services with in the Los Angeles/Long Beach Harbor. Should you have any questions, please contact our office at the letterhead address, or you may contact Mr. Ted Mar, Chief, Marine Safety Branch, at telephone number (916) 323 6281 or by email at [tmar@ospr.dfg.ca.gov](mailto:tmar@ospr.dfg.ca.gov).

Sincerely,



Carlton D. Moore  
Administrator  
Office of Spill Prevention and Response

cc: Captain Manny Aschemeyer  
Marine Exchange of Southern California  
3601 S. Gaffey Street, #803  
San Pedro, California 90731

Mr. Ted Mar  
Marine Safety Branch  
Sacramento, California

Mr. Jack Geck  
Marine Safety Branch  
Sacramento, California

Mr. Mike Coyne  
Marine Safety Branch  
Sacramento, California

Los Angeles/Long Beach Harbor Safety Committee  
**CERTIFIED BOLLARD PULL TEST RESULTS**  
 As of June 2010

**SAUSE BROTHERS\*\*\***

Name	Total HP (Adv)	Ahead Kips	Astern Kips	Prop	Length	Test Port	Bollard Pull Issued Date (and ETIP extension status when applicable)
ARAPAHO	1610	32.02	20.94	T+	64.	LA	8/26/02 (ETIP extension)
REDONDO	1610	32.14	22.34	T+	60.9	LA	8/26/02 (ETIP extension)

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Note: Pursuant to State Regulations, tugs must have their bollard pull re-tested every three years or be accepted into the ETIP to extend their bollard pull date.

- \* Equipped with Kort-type Nozzles
- \*\*\*\* Equipped with Flanking Rudders
- + Equipped with Kort-type Nozzles and Flanking Rudders
- ++ Sister tug to be tested within 6 months of relocation to LA/LB
- S Single Screw
- T Twin Screw
- TR Tractor Tug
- Z Z-Drive Tug

1. Due to its specific design, a tractor-type tug can, under certain circumstances, apply significantly increased tension on the tow line.
2. Flanking rudders can, under certain conditions, increase usefulness and effectiveness when the tug operates astern.
3. Kort-type nozzles increase bollard pull when going ahead (towing), but can reduce it when going astern (backing).
4. Z-Drive-type tugs have kort-type nozzles, which increase the bollard pull when going ahead. Rotating nozzles give the vessel approximately 90% of ahead bollard pull when going astern.