http://www.sperrymarine.northgrum.com/type-approvals_search.asp?selectGroup=17&selectProduct=492&selectCountry=&selectAgency=&selectCertType=&Submit=Search&Order=FullName&Sort=ASC

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Certs. available on website

| Product | Country | Agency/Org | Type | Date |
|---|---|---|---|---|
| Bridgemaster E | Croatia | Croatian Register of Shipping | Type Approval Certificate | 05 June 2000 |
| Bridgemaster E | Australia | Australian Maritime Safety Authority | Type Approval Certificate | 06 October 1999 |
| Bridgemaster E | Croatia | Croatian Register of Shipping | Type Approval Certificate | 05 June 2004 |
| Bridgemaster E | Russia | Ministry of Transport of Russian Federation | Type Approval Certificate | 08 July 2004 |
| Bridgemaster E | Japan | Japan Post Telegraph | Type Approval Certificate | 29 December 2002 |
| Bridgemaster E | Russia | Russian Maritime Register of Shipping | Type Approval Certificate | 23 July 2004 |
| Bridgemaster E | Croatia | Croatian Register of Shipping | Type Approval Certificate | 05 June 2004 |
| Bridgemaster E | Australia | Australian Maritime Safety Authority | Type Approval Certificate | 06 October 1999 |
| Bridgemaster E | Australia | Australian Maritime Safety Authority | Type Approval Certificate | 07 July 1999 |
| Bridgemaster E | Croatia | Croatian Register of Shipping | Type Approval Certificate | 05 June 2004 |
| Bridgemaster E | Canada | Industry Canada / Industrie Canada | Type Approval Certificate | 20 April 1999 |
| Bridgemaster E | Romania | Registrul Naval Român | Type Approval Certificate | 30 December 1999 |
| Bridgemaster E | European Union (EU) | Sperry Marine | Declaration of Conformity | 15 September 2003 |
| Bridgemaster E | United States | Federal Communications Commission (FCC) | Type Approval Certificate | 01 October 1991 |
| Bridgemaster E | United States | Federal Communications Commission (FCC) | Type Approval Certificate | 01 October 1999 |
| Bridgemaster E | United States | Federal Communications Commission (FCC) | Type Approval Certificate | 01 October 1999 |
| Bridgemaster E | China | China Classification Society | Type Approval Certificate | 28 September 2003 |
| Bridgemaster E | Romania | Registrul Naval Român | Type Approval Certificate | 30 December 1999 |
| Bridgemaster E | Romania | Registrul Naval Român | Type Approval Certificate | 30 December 1999 |
| Bridgemaster E | United States | Federal Communications Commission (FCC) | Type Approval Certificate | 03 May 1999 |
| Bridgemaster E | Australia | Australian Maritime Safety Authority | Type Approval Certificate | 06 October 1999 |
| Bridgemaster E | Australia | Australian Maritime Safety Authority | Type Approval Certificate | 07 July 1999 |
| Bridgemaster E | Australia | Australian Maritime Safety Authority | Type Approval Certificate | 06 October 1999 |
| Bridgemaster E | Canada | Industry Canada / Industrie Canada | Type Approval Certificate | 20 April 1999 |
| Bridgemaster E | Canada | Industry Canada / Industrie Canada | Type Approval Certificate | 30 September 1998 |

**Sperry Marine**
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## Type Approval Certificate for: Bridgemaster E

**Issuing Country:** Canada
**Issuing Agency:** Industry Canada / Industrie Canada
**Date of Issue:** 30 September 1998
**Notes:** Cert. # 9412

Print this Type Approval
View higher-resolution PDF
(Recommended for quality printing or for saving on hard drive. Requires Adobe Acrobat Reader, free from www.adobe.com)

Industry Canada Industrie Canada

No. ➤ 9412

# RADIO EQUIPMENT CERTIFICATE OF TYPE APPROVAL

# CERTIFICAT D'HOMOLOGATION DE MATÉRIEL RADIO

| | | |
|---|---|---|
| CERTIFICATION No.<br>No. DE CERTIFICATION | ➤ | 2907381101 |
| ISSUED TO<br>DÉLIVRÉ A | ➤ | ITTON MARINE SYSTEMS B.V. |
| TYPE OF EQUIPMENT<br>GENRE DE MATÉRIEL | ➤ | MARINE RADAR |
| TRADE NAME AND MODEL<br>MARQUE ET MODÈLE | ➤ | 6583LA |
| FREQUENCY RANGE<br>BANDE DE FRÉQUENCES | ➤ | 2900 MHz to 3100 MHz |
| EMISSION DESIGNATION<br>DESIGNATION D'ÉMISSION | ➤ | 109M6PON |
| R.F. POWER RATING<br>PUISSANCE NOMINALE H.F. | ➤ | 30 kWatts |
| CERTIFIED TO<br>CERTIFIÉ SELON LE | ➤ | SPECIFICATION RSS138 ISSUE Draft Sep. 29th, 1998<br>CHIER DES CHARGES ÉDITION |

Certification of equipment means only that the equipment has met the requirements of the above noted specificatio. License applications, where applicable to use certified equipment, are acted on accordingly by the issuing office and will depend on the existing radio environment, service and location of operation.

This certificate is issued on condition that the holder complies and will continue to comply with the requirements of the radio standards specifications and procedures issued by the Department.

L'homologation de matériel terminal signifie seulement qu'il est conforme aux exi du cahier des charges mentionné ci-dessus. Les demandes de licence, le cas éch vue de l' utilisation de matériel certifié seront traitées en conséquence par le bur chargé de délivrer lesdites licences, en tenant compte du milieu radioélectrique a du service radio existant et de l'emplacement de la station.

Le présent certificat est délivré à condition que le détenteur se conforme et contir à se conformer aux cahiers des charges et procédures sur les normes radioélectr publiées par le ministère.

ISSUED UNDER THE AUTHORITY OF MINISTER OF INDUSTRY
DELIVRE AVEC L'AUTORISATION DU MINISTRE DES INDUSTRIE

DATE September 30, 1998

FOR

DIRECTOR GENERAL
SPECTRUM
ENGINEERING
BRANCH

DIRECTEUR GENERAL
GÉNIE
DU SPECTRE

Canada

**Sperry Marine**

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Go Back

## Type Approval Certificate for: Bridgemaster E

**Issuing Country:** Canada
**Issuing Agency:** Industry Canada / Industrie Canada
**Date of Issue:** 20 April 1999
**Notes:** Cert# 2907381102

Print this Type Approval
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(Recommended for quality printing or for saving on hard drive. Requires Adobe Acrobat Reader, free from www.adobe.com)

Industry Canada Industrie Canada

No. ➤ 10214

# RADIO EQUIPMENT CERTIFICATE OF TYPE APPROVAL

# CERTIFICAT D'HOMOLOGATION DE MATÉRIEL RADIO

| | | |
|---|---|---|
| CERTIFICATION No.<br>No. DE CERTIFICATION | ➤ | 2907381102 |
| ISSUED TO<br>DÉLIVRÉ A | ➤ | LITTON MARINE SYSTEMS B.V. |
| TYPE OF EQUIPMENT<br>GENRE DE MATÉRIEL | ➤ | MARINE RADAR |
| TRADE NAME AND MODEL<br>MARQUE ET MODÈLE | ➤ | 65810600 |
| FREQUENCY RANGE<br>BANDE DE FRÉQUENCES | ➤ | 9300 MHz to 9500 MHz |
| EMISSION DESIGNATION<br>DÉSIGNATION D'ÉMISSION | ➤ | 169MPON |
| R.F. POWER RATING<br>PUISSANCE NOMINALE H.F. | ➤ | 10 KWatts |
| CERTIFIED TO<br>CERTIFIÉ SELON LE | ➤ | SPECIFICATION RSS138 ISSUE 1<br>CAHIER DES CHARGES EDITION |

Certification of equipment means only that the equipment has met the requirements of the above noted specification. License applications, where applicable to use certified equipment, are acted on accordingly by the issuing office and will depend on the existing radio environment, service and location of operation.

This certificate is issued on condition that the holder complies and will continue to comply with the requirements of the radio standards specifications and procedures issued by the Department.

L'homologation de matériel terminal signifie seulement qu'il est conforme aux exigences du cahiers des charges mentionné ci-dessus. Les demandes de licence, le cas échéant, pour l'utilisation de matériel certifié seront traitées en conséquence par le bureau chargé de délivrer lesdites licences, en tenant compte du milieu radioélectrique actuel du service radio existant et de l'emplacement de la station.

Le présent certificat est délivré à condition que le détenteur se conforme et continue à se conformer aux cahiers des charges et procédures sur les normes radioélectriques publiées par le ministère.

ISSUED UNDER THE AUTHORITY OF MINISTER OF INDUSTRY
DÉLIVRÉ AVEC L'AUTORISATION DU MINISTRE DES INDUSTRIE

DATE April 20, 1999

FOR

DIRECTOR GENERAL
SPECTRUM
ENGINEERING
BRANCH

DIRECTEUR GÉNÉRAL
GÉNIE
DU SPECTRE

Canada

530P

**Sperry Marine**
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## Type Approval Certificate for: Bridgemaster E

**Issuing Country:** Australia
**Issuing Agency:** Australian Maritime Safety Authority
**Date of Issue:** 06 October 1999
**Notes:** Cert. No. 4785

Print this Type Approval
View higher-resolution PDF
(Recommended for quality printing or for saving on hard drive. Requires Adobe Acrobat Reader, free from www.adobe.com)

Australian Maritime Safety Authority

### AUSTRALIAN MARITIME SAFETY AUTHORITY

## CERTIFICATE OF APPROVAL

No. 4785

I, the undersigned TREVOR GEORGE ROSE, hereby approve in accordance with:

(i) Regulation V/12(r) of the International Convention for the Safety of Life at Sea 1974 as amended, and
(ii) Provisions 4.2.1 of Marine Orders, Part 21 (Navigational - Equipment) Issue 2,

for the purposes of conforming with performance standards contained in:

IMO Resolutions:
MSC 64(67) Annex 4 — *Performance Standards for Radar Equipment; and*
*A694(17)* — *Performance Standards for Electronic Navigational Aids*

the equipment specified herein.

This approval does not extend to any modification of the specified equipment. Such modification shall, if approved, be the subject of a separate certificate of approval.

**EQUIPMENT:** S and X Band MARINE RADAR EQUIPMENT

**TYPE:** Bridgemaster E – 184mm Radar Systems

**MANUFACTURER:** LITTON MARINE SYSTEMS BV
118 Burlington Road
New Malden,
Surrey, KT3 4NR
United Kingdom

**IDENTIFICATION.** Litton, Bridgemaster E – 150mm Radar Systems complying with the model endorsed in the attached Certificate of Type Approval No. ESER4-MED-38/99-03 issued by Defence Evaluation and Research Agency, Marine Type Approvals, Farnlington, West Sussex, under the authority of the Maritime and Coastguard Agency of the United Kingdom of Great Britain and Northern Ireland dated 17 June 1999.

**CONDITIONS:**

1 This certificate of approval has been issued on the basis of the aforementioned certificate of inspection and tests.
2 The equipment must be manufactured in accordance with the requirements specified in the aforementioned certificate of inspection and tests, with regard to:
   (i) the drawings, specifications as to design and materials and other data submitted;
   (ii) the prototype submitted for testing, and
   (iii) any quality control procedures specified for the purposes of the approval.
3 The equipment is to be serviced in accordance with the manufacturer's service instructions.
4 The equipment is to remain satisfactory in service.
5 This certificate does not certify that the equipment is Year 2000 compliant and no certificate holder, other person or entity should represent to any other person or entity that this certificate is evidence of Year 2000 compliance.

This approval shall remain valid until 17 June 2004 unless suspended or cancelled before the expiration.

T G Rose
Manager, Ship Inspection Group
Australian Maritime Safety Authority

File No. 021985

Date 6 October 1999

# Sperry Marine

We Navigate Solutions.

Go Back

## Type Approval Certificate for: Bridgemaster E

**Issuing Country:** Australia
**Issuing Agency:** Australian Maritime Safety Authority
**Date of Issue:** 07 July 1999
**Notes:** Cert. #: 4767

Print this Type Approval
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(Recommended for quality printing or for saving on hard drive. Requires Adobe Acrobat Reader, free from www.adobe.com)

Australian Maritime Safety Authority

## AUSTRALIAN MARITIME SAFETY AUTHORITY

## CERTIFICATE OF APPROVAL

No. 4767

I, the undersigned TREVOR GEORGE ROSE, hereby approve in accordance with:

(i) Regulation V/12(s) of the International Conversion for the Safety of Life at Sea 1974 as amended; and
(ii) Provisions 4.2.1 of Marine Orders, Part 21 (Navigational - Equipment) Issue 2,

for the purposes of conforming with performance standards contained in:

IMO Resolutions:
A477(XII) *Performance Standards for Radar Equipment, and*
A422(XI) *Performance Standards for Automatic Radar Plotting Aids (ARPA)*
A694(17) *Performance Standards for Electronic Navigational Aids*,

the equipment specified herein.

This approval does not extend to any modification of the specified equipment. Such modification shall, if approved, be the subject of a separate certificate of approval.

**EQUIPMENT:** MARINE RADAR EQUIPMENT

**TYPE:** Bridgemaster E – Marine ARPA/Radar Systems

**MANUFACTURER:** LITTON MARINE SYSTEMS BV
118 Burlington Road
New Malden,
Surrey. KT3 4NR
United Kingdom

**IDENTIFICATION.** Litton, Bridgemaster E Marine Arpa/Radar Systems complying with the model indicated in the attached Certificate of Type Approval No. DERA-TT/22/97-11 issued by Defence Evaluation and Research Agency, Marine Type Approvals, Funtington, West Sussex, under the authority of the Maritime and Coastguard Agency of the United Kingdom of Great Britain and Northern Ireland dated 3 October 1998.

**CONDITIONS:**

1 This certificate of approval has been issued on the basis of the aforementioned certificate of inspection and tests.
2 The equipment must be manufactured in accordance with the requirements specified in the aforementioned certificate of inspection and tests, with regard to:
   (i) the drawings, specifications as to design and materials and other data submitted;
   (ii) the prototype submitted for testing; and
   (iii) any quality control procedures specified for the purposes of the approval.
3 The equipment is to be serviced in accordance with the manufacturer's service instructions.
4 The equipment is to remain satisfactory in service.
5 This certificate does not certify that the equipment is Year 2000 compliant and no certificate holder, other person or entity should represent to any other person or entity that this certificate is evidence of Year 2000 compliance.

This approval shall remain valid until 3 October 2003 unless suspended or cancelled before the [illegible]

T G Rose
Chief Marine Surveyor

Australian Maritime Safety Authority

File No. 021985

Date 7 July 1999

**Sperry Marine**
We Navigate Solutions.

Go Back

## Type Approval Certificate for: Bridgemaster E

**Issuing Country:** Australia
**Issuing Agency:** Australian Maritime Safety Authority
**Date of Issue:** 06 October 1999
**Notes:** Cert. #: 4786

Print this Type Approval
View higher-resolution PDF
(Recommended for quality printing or for saving on hard drive. Requires Adobe Acrobat Reader, free from www.adobe.com)

Australian Maritime Safety Authority

### AUSTRALIAN MARITIME SAFETY AUTHORITY

### CERTIFICATE OF APPROVAL

No. 4786

I, the undersigned TREVOR GEORGE ROSE, hereby approve in accordance with:

(i) Regulation V/12(c) of the International Convention for the Safety of Life at Sea 1974 as amended; and
(ii) Provisions 4.2.1 of Marine Orders, Part 21 (Navigational - Equipment) Issue 2,

for the purposes of conforming with performance standards contained in:

IMO Resolutions:
MSC 64(67) Annex 4 — *Performance Standards for Radar Equipment; and*
*A694(17);* — *Performance Standards for Electronic Navigational Aids*

the equipment specified herein.

This approval does not extend to any modification of the specified equipment. Such modification shall, if approved, be the subject of a separate certificate of approval.

**EQUIPMENT:** S and X Band MARINE RADAR EQUIPMENT

**TYPE:** Bridgemaster E – 250mm Radar Systems

**MANUFACTURER:** LITTON MARINE SYSTEMS BV
118 Burlington Road
New Malden,
Surrey, KT3 4NR
United Kingdom

**IDENTIFICATION.** 140cm, Bridgemaster E - 250mm Radar Systems complying with the model indicated in the attached Certificate of Type Approval No. DERA-MED-38/98-64 issued by Defence Evaluation and Research Agency, Marine Type Approvals, Pyestock, West Sussex, under the authority of the Maritime and Coastguard Agency of the United Kingdom of Great Britain and Northern Ireland dated 17 June 1999.

**CONDITIONS:**

1 This certificate of approval has been issued on the basis of the aforementioned certificate of inspection and tests.
2 The equipment must be manufactured in accordance with the requirements specified in the aforementioned certificate of inspection and tests, with regard to:
   (i) the drawings, specifications as to design and materials and other data submitted;
   (ii) the prototype submitted for testing; and
   (iii) any quality control procedures specified for the purposes of the approval.
3 The equipment is to be serviced in accordance with the manufacturer's service instructions.
4 The equipment is to remain satisfactory in service.
5 This certificate does not certify that the equipment is Year 2000 compliant and no certificate holder, other person or entity should represent to any other person or entity that this certificate is evidence of Year 2000 compliance.

This approval shall remain valid until 17 June 2004 unless suspended or cancelled before on every case

T G Rose
Manager, Ship Inspection Group

File No. 021985

Date: 6 October 1999

**Sperry Marine**

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Go Back

## Type Approval Certificate for: Bridgemaster E

**Issuing Country:** United States
**Issuing Agency:** Federal Communications Commission (FCC)
**Date of Issue:** 03 May 1999
**Notes:** Cert. # BT9ME10

Print this Type Approval
View higher-resolution PDF
(Recommended for quality printing or for saving on hard drive. Requires Adobe Acrobat Reader, free from www.adobe.com)

FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

# GRANT OF EQUIPMENT AUTHORIZATION
Certification

Litton Marine Systems BV
118 Burlington Road
New Malden Surrey KT3 4NR England

Date of Grant: 5/3/99

Application Dated: 2/22/99

Attention: Bob Sasse

## NOT TRANSFERABLE

EQUIPMENT AUTHORIZATION is hereby issued to the named GRANTEE, and is VALID ONLY for the equipment identified hereon for use under the Commission's Rules and Regulations listed below.

FCC IDENTIFIER BT9BME10

Name of Grantee Litton Marine Systems BV

Equipment Class : Marine Radar

| Grant Notes | FCC Rule Parts | Frequency Range (MHZ) | Output Watts | Frequency Tolerance | Emission Designator |
|---|---|---|---|---|---|
| | 80 | 9300 - 9500 | 10000 | | 169MP0N |

Mail To:
Rowland Johnson, President
Hyak Laboratories, Inc.
7011 Calamo Street, Suite 107
Springfield, VA 22150

9993158315137002

In correspondence concerning this grant, please refer to the FCC IDENTIFIER and the date of grant.

FCC 731A
October 1991

**Sperry Marine**

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Go Back

## Type Approval Certificate for: Bridgemaster E

**Issuing Country:** Romania
**Issuing Agency:** Registrul Naval Român
**Date of Issue:** 30 December 1999
**Notes:** Cert. # 17/I/347699

Print this Type Approval
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(Recommended for quality printing or for saving on hard drive. Requires Adobe Acrobat Reader, free from www.adobe.com)

REGISTRUL NAVAL ROMÂN
*ROMANIAN REGISTER OF SHIPPING*

# CERTIFICAT PENTRU ACCEPTAREA DE TIP
*CERTIFICATE OF TYPE ACCEPTANCE*

Se certifică prin prezentul că produsul MARINE SHIPBORNE RADAR
*This is to certify that the manufactured product*
SYSTEMS --- (EPA, ATA, ARPA)
Tip Bridgemaster E - X band - 180/250/340 nm - see Annex
*Type*
Fabricant LITTON MARINE SYSTEMS BV - U.K.
*Manufacturer*
Date tehnice generale 9410 GHz ± 30 MHz
*General technical data*
Destinaţie Detection of the above sea objects and their position
*Purpose*

este în concordanţă cu cerinţele R.N.R. şi se acceptă pentru utilizare la bordul navelor cu clasa
*is complying with R.N.R. requirements and is allowed for use on board of ships with R.N.R. class or in devices*
R.N.R. sau în echipamente cu certificat R.N.R., conform destinaţiei.
*with R.N.R. certificates, according to the purpose.*

Baza acceptării RNR Rules; IMO and IEC Requirements.
*Basis of acceptance*

1. Documentaţia tehnică cu aprobarea R.N.R. Nr./data 17/I/BV-3476/24.06.99
*Technical documentation with the R.N.R. approval No./date*
2. Probe sub supravegherea R.N.R. a exemplarului (lotului) prototip taken from current production
*Tests under R.N.R. technical supervision for prototype specimen (batch)*

Nr. de fabricaţie
*Work's No.*
Buletin de încercare nr. annex to the T.A. Protocol
*Test Report No.*
3. Alte buletine de încercare DE RA - MED
*Other test reports*
4. Cunoaşterea procesului de producţie, organizării întreprinderii şi gradului de dotare tehnică.
*Knowledge of the production process, of the organization of works and technical outfit state.*
5.

Acceptarea este valabilă numai dacă produsul în chestiune este utilizat în concordanţă cu condi-
*The acceptance is valid only when the item in question is used in accordance with the manufacturer's conditions*
ţiile fabricantului specificate în Ship's Manual
*as stated in*

M.T.Tc. nr. 1450/67

M.T.Tc. 28-58-13/15; A4, I2

CONDIŢII SUPLIMENTARE ŞI OBSERVAŢII
*ADDITIONAL CONDITIONS AND REMARKS*

1. The fitting of the ship is to be made according to SOLAS 74 Ch.V, IMO resolutions and RNR Rules.

The equipment to be supplied for fitting on ships with RNR class shall:
- comply from the point of view of construction with the approval documentation;
- be in good operation condition ;
- be delivered with a set of spare parts approved by RNR ;
- be accompanied by a handbook in English, comprising the general technical description, operational instructions, interconnection and circuit diagrams, maintenance procedure.

2. The Romanian Register of Shipping reserves to itself the right to carry out the sounding test and checkings of the equipment from current production.

3. The Compass Safe Distance and the inscription "RNR 347699-1" will be indicated on every device to be mounted on the bridge.

ACCEPTAREA ESTE VALABILĂ PÎNĂ LA December 30, 2004
*THE ACCEPTANCE IS VALID UNTIL*

CONDIŢII GENERALE
*GENERAL CONDITIONS*

1. Modificări ale proiectului sau materialelor utilizate care influenţează calitatea produsului pot fi făcute numai cu acceptul R.N.R.
*Changes of design or of the materials used, which influence the product quality, may be carried out only with the R.N.R. acceptance.*

2. Acceptarea poate fi retrasă în cazurile:
*The acceptance may be withdrawn in case of:*

— modificări ale proiectului şi materialelor fără acceptul R.N.R.;
*changes of the design and the materials without R.N.R. agreement;*

— rezultate nesatisfăcătoare în exploatare;
*unsatisfactory service results;*

— modificarea Regulilor şi metodei de acceptare;
*alterations of Rules and acceptance practice;*

— expirarea termenului de valabilitate.
*expired term of validity.*

Eliberat la December 30 19 99 Localitatea Bucharest
*Issued on* *Place*

Nr. 17/I/347699-1
*No.*

Liliana Zaharia
ŞEF SERVICIU SUPRAVEGHERE,
*Head of survey department,*

Victor Badea
Inspector,
*Surveyor,*

Annex to
TAC No 397600

## Configurations

### BridgeMaster E Units

Systems can use a combination of the following equipment:

| | | | |
|---|---|---|---|
| Monitor Units | | 180 | 65814F or R |
| | | 250 | 65821F or R, K or V |
| | | 340 | 65826L or P, W or Z or N |
| Processor Units | | EPA | 65800P@@# See note 1 for option letters |
| | | ATA | 65800T@@# |
| | | ARPA | 65800R@@# |

Note 1 @= A or D
@@ = R or T
#= A, B, C, J, R, K, L, S, T, U, V, W, X, Y, or Z

| | | |
|---|---|---|
| Turning Units | X-Band 25kW | 65825MAP to MAT with Transceiver fitted. |
| | X-Band 10kW | 65810MAT to MOP with Transceiver fitted. |
| | | 65801BAP to BAT no Transceiver fitted. |
| Transceiver | X-Band 25kW | 65825A |
| | X-Band 10kW | 65810A |
| Scanner controller | | 65837AA to AH |
| Antennas X-Band | | 65604A 1.2m, 65606A 1.8m or 65608A 2.4m |

Also can be used with ancillary units:

| | |
|---|---|
| Display Compatibility Unit | 65840A |
| Transceiver Compatibility Unit | 65841A or 65841D |
| Interswitch Unit | 65842A or 65846A |
| Slave Junction Box | 65849A |
| Serial Interface Unit | 65847A |

### BridgeMaster E Unit Numbers:

**1) ANTENNA Numbers**
The Antenna number consists of a number plus a single letter suffix.

| | |
|---|---|
| 65604/A | X-Band, 4 ft, 1.2m |
| 65606/A | X-Band, 6 ft, 1.8m |
| 65608/A | X-Band, 8 ft, 2.4m |

**2) TURNING UNIT Numbers**
The Turning Unit number consists of a number plus a three letter suffix

| | | |
|---|---|---|
| Number: | 65801... | = X-Band Turning Unit without Masthead TXRX |
| | 65810... | = X-Band Turning Unit with 10 kW Masthead TXRX |
| | 65825... | = X-Band Turning Unit with 25 kW Masthead TXRX |
| First Suffix: | M | = Masthead Transceiver System (Standard Commercial) |
| | N | = Masthead Transceiver System (With additional Facilities) |
| | B | = Bulkhead Transceiver System (Standard Commercial) |
| | C | = Bulkhead Transceiver System (With additional Facilities) |

(For the Bulkhead Transceiver type Turning Units the Transceiver has a separate number)

| | | |
|---|---|---|
| Second Suffix: | A | (110/240 V, 50/60 Hz, 1 Phase AC, Standard/High Speed, X-Band) |
| | D | (24/32 V DC, Standard Speed, X-Band) |
| Third Suffix: | P | (Pulse) |
| | R | (Pulse, Perf Mon) |
| | S | (Pulse, Synchro) |
| | T | (Pulse, Perf Mon, Synchro) |

**3) BULKHEAD TRANSCEIVER Numbers**
The Bulkhead Transceiver Unit number consists of a number plus a single letter suffix.

| | | |
|---|---|---|
| | 65810. | = X-Band, 10 kW Bulkhead, AC |
| | 65825. | = X-Band, 25 kW Bulkhead, AC |
| First Suffix: | A | = Standard Commercial Transceiver |
| | B | = Commercial Transceiver with additional facilities |

**4) PROCESSOR ELECTRONICS UNIT Numbers : 65800xxxx**
Processor part numbers have a four letter suffix.

| | | |
|---|---|---|
| First Suffix: Radar Type – | | |
| | P | =EPA (Electronic Plotting Aid) |
| | T | =ATA (Automatic Tracking Aid) |
| | R | =ARPA (Automatic Radar Plotting Aid) |
| Second Suffix: Mains Input – | | |
| | A | = (110/240 V, 50/60 Hz, 1 Phase AC) |

Annex to
TAC No.397699

D = (24/32 V DC)

**Third Suffix: Complexity –**

R = (Two Card, Standard Compass)
V = (Two Card, Special Compass)

**FourthSuffix :MMI:**

A = Integral, Joystick Only, No Memory Card Module
B = Integral, Rollerbal Only, No Memory Card Module
C = Integral, No Joystick/Rollerball or Memory card Modules
J = Integral, Joystick and Memory card Module
R = Integral, Rollerball and Memory card Module
K = Integral Keyboard, Joystick and Memory card Module
L = Integral Keyboard, Rollerball and Memory card Module
S = 340 Split Cabinet Version, with Joystick and Memory card Module
T = 340 Split Cabinet Version with Rollerball &Memory card Module
U = 340 Kit Version, with Joystick and Memory card Module
V = 340 Kit Version with Rollerball and Memory card Module
W = 340 Kit Version with Kboard , Joystick and Memory card Module
X = 340 Kit Version with Keyboard, Rollerball and Memory card Module
Y= 340 Split Cabinet Version with Keyboard andJoystick and Memory card Module
Z= 340 Split Cabinet Version with Keyboard and Rollerball and Memory card Module

**5) MONITOR Numbers**

The Display Unit number consists of a number plus a one letter suffix.

**Number:**

65814... = 180 Display Unit
65821... = 250 Display Unit
65826... = 340 Display Unit

**First Suffix: Mounting/Resolution**

F = (Table Mounting High resolution - applies to 180/250)
K = (Table Mounting Medium Resolution - applies to 250)
L = (Split Cabinet Medium Resolution - applies to 340)
N = (Kit Format High Resolution - applies to 180/250/340)
P = (Kit Format Medium Resolution - applies to 250/340)

**As above with additional Buffered RGB&Sync Output**

R = (Table Mounting High resolution - applies to 180/250)
V = (Table Mounting Medium Resolution - applies to 250)
W = (Split Cabinet Medium Resolution - applies to 340)
Y = (Kit Format High Resolution - applies to 180/250)
Z = (Kit Format Medium Resolution - applies to 250/340)

Kit format displays are designed to fit into a third party console.

**6) Ancillaries**

**Transceiver Compatibility Unit.** (Required when interfacing BM II Transceiver to a BME Display)

**65841A**: AC Version
**65841D**: DC Version

**Display Compatibility Unit** **65840A** (Required when interfacing BM II Display to a BME Transceiver)
**Interswitch** **65842A** 2x4 Interswitch
**65845A** 6x6 Interswitch
**Serial Interface Unit** **65847A**
**Slave Junction Box** **65848A**

STANDARD SPEED (25rpm)

H 110/120V, 50/60Hz, 1 Phase Motor, Standard Speed
E 220/240V, 50/60Hz, 1 Phase Motor, Standard Speed
E 110/120V, 50/60Hz, 3 Phase Motor, Standard Speed
C 220/240V, 50/60Hz, 3 Phase Motor, Standard Speed
B 380/440V, 50/60Hz, 3 Phase Motor, Standard Speed

HIGH SPEED (45rpm)

H 110/120V, 50/60Hz, 1 Phase Motor, High Speed
E 220/240V, 50/60Hz, 1 Phase Motor, High Speed
F 110/120V, 50/60Hz, 3 Phase Motor, High Speed
E 220/240V, 50/60Hz, 3 Phase Motor, High Speed
C 380/440V, 50/60Hz, 3 Phase Motor, High Speed

# Sperry Marine

We Navigate Solutions.

Go Back

## Type Approval Certificate for: Bridgemaster E

**Issuing Country:** Romania
**Issuing Agency:** Registrul Naval Român
**Date of Issue:** 30 December 1999
**Notes:** Cert. # 17/I/BV -347699-1

Print this Type Approval
View higher-resolution PDF
(Recommended for quality printing or for saving on hard drive. Requires Adobe Acrobat Reader, free from www.adobe.com)

REGISTRUL NAVAL ROMÂN
*ROMANIAN REGISTER OF SHIPPING*

# CERTIFICAT PENTRU ACCEPTAREA DE TIP
*CERTIFICATE OF TYPE ACCEPTANCE*

Se certifică prin prezentul că produsul MARINE SHIPBORNE RADAR
*This is to certify that the manufactured product*
SYSTEMS --- (EPA, ATA, ARPA)
Tip Bridgemaster E - X band - 180/250/340 mm - see Annex
*Type*
Fabricant LITTON MARINE SYSTEMS BV - U.K.
*Manufacturer*
Date tehnice generale 9410 GHz ± 30 MHz
*General technical data*
Destinaţie Detection of the above sea objects and their position
*Purpose*
este în concordanţă cu cerinţele R.N.R. şi se acceptă pentru utilizare la bordul navelor cu clasa
*is complying with R.N.R. requirements and is allowed for use on board of ships with R.N.R. class or in devices*
R.N.R. sau în echipamente cu certificat R.N.R., conform destinaţiei.
*with R.N.R. certificates, according to the purpose.*

Baza acceptării RNR Rules; IMO and IEC Requirements.
*Basis of acceptance*
1. Documentaţia tehnică cu aprobarea R.N.R. Nr./data 17/1/BV-3476/2A.06.99
*Technical documentation with the R.N.R. approval No./date*
2. Probe sub supravegherea R.N.R. a exemplarului (lotului) prototip taken from current production
*Tests under R.N.R. technical supervision for prototype specimen (batch)*
Nr. de fabricaţie
*Work's No.*
Buletin de încercare nr. annex to the T.A. Protocol
*Test Report No.*
3. Alte buletine de încercare DE RA - MED
*Other test reports*
4. Cunoaşterea procesului de producţie, organizării întreprinderii şi gradului de dotare tehnică.
*Knowledge of the production process, of the organization of works and technical outfit state.*
5.

Acceptarea este valabilă numai dacă produsul în chestiune este utilizat în concordanţă cu condi-
*The acceptance is valid only when the item in question is used in accordance with the manufacturer's conditions*
ţiile fabricantului specificate în Ship's Manual
*as stated in*

M.T.Te. nr. 1450/87

M.T.Te. 25-38-15/15; A4. IP

CONDIŢII SUPLIMENTARE ŞI OBSERVAŢII
*ADDITIONAL CONDITIONS AND REMARKS*

1. The fitting of the ship is to be made according to SOLAS 74 Ch.V, IMO resolutions and RNR Rules.

The equipment to be supplied for fitting on ships with RNR class shall:
- comply from the point of view of construction with the approval documentation;
- be in good operation condition ;
- be delivered with a set of spare parts approved by RNg ;
- be accompanied by a handbook in English, comprising the general technical description, operational instructions, interconnection and circuit diagrams, maintenance procedure.

2. The Roumanian Register of Shipping reserves to itself the right to carry out the sounding test and checkings of the equipment from current production.

3. The Compass Safe Distance and the inscription "RNR 347699-1" will be indicated on every device to be mounted on the bridge.

ACCEPTAREA ESTE VALABILĂ PÎNĂ LA December 30, 2004
*THE ACCEPTANCE IS VALID UNTIL*

CONDIŢII GENERALE
*GENERAL CONDITIONS*

1. Modificări ale proiectului sau materialelor utilizate care influenţează calitatea produsului pot fi
*Changes of design or of the materials used, which influence the product quality, may be carried out only*

făcute numai cu acceptul R.N.R.
*with the R.N.R. acceptance.*

2. Acceptarea poate fi retrasă în cazurile:
*The acceptance may be withdrawn in case of:*

— modificări ale proiectului şi materialelor fără acceptul R.N.R.;
*changes of the design and the materials without R.N.R. agreement;*

— rezultate nesatisfăcătoare în exploatare;
*dissatisfactory service results;*

— modificarea Regulilor şi metodei de acceptare;
*alterations of Rules and acceptance practice;*

— expirarea termenului de valabilitate.
*expired term of validity.*

Eliberat la December 30 19 99 Localitatea Bucharest
*Issued on* *Place*

Nr. 17/I/347699-1
*No.*

Liliana Zaharia
SEF SERVICIU SUPRAVEGHERE,
*Head of Survey Department,*

Victor Badea
Inspector,
*Surveyor,*

Annex to
TAC No 397600

## Configurations

### BridgeMaster *E* Units

Systems can use a combination of the following equipment:

| | | | |
|---|---|---|---|
| Monitor Units | | 160 | 65814F or R |
| | | 250 | 65821F or R, K or V |
| | | 340 | 65828L or P, W or Z or N |
| Processor Units | | EPA | 65800P@@# See note 1 for option letters |
| | | ATA | 65800T@@# |
| | | ARPA | 65800R@@# |

Note 1 @= A or D
@ = R or T
#= A, B, C, J, R, K, L, S, T, U, V, W, X, Y, or Z

| | | |
|---|---|---|
| Turning Units | X-Band 25kW | 65825MAP to MAT with Transceiver fitted. |
| | X-Band 10kW | 65810MAT to MDP with Transceiver fitted. |
| | | 65801BAP to BAT no Transceiver fitted. |
| Transceiver | X-Band 25kW | 65825A |
| | X-Band 10kW | 65810A |
| Scanner controller | | 65837AA to AH |
| Antennas X-Band | | 65604A 1.2m, 65606A 1.8m or 65608A 2.4m |

Also can be used with ancillary units:

| | |
|---|---|
| Display Compatibility Unit | 65840A |
| Transceiver Compatibility Unit | 65841A or 65841D |
| Interswitch Unit | 65842A or 65846A |
| Slave Junction Box | 65849A |
| Serial Interface Unit | 65847A |

### BridgeMaster E Unit Numbers:

**1) ANTENNA Numbers**
The Antenna number consists of a number plus a single letter suffix.

| | |
|---|---|
| 65604/A | X-Band, 4 ft, 1.2m |
| 65606/A | X-Band, 6 ft, 1.8m |
| 65608/A | X-Band, 8 ft, 2.4m |

**2) TURNING UNIT Numbers**
The Turning Unit number consists of a number plus a three letter suffix

| | | |
|---|---|---|
| Number: | 65801... | = X-Band Turning Unit without Masthead TXRX |
| | 65810... | = X-Band Turning Unit with 10 kW Masthead TXRX |
| | 65825... | = X-Band Turning Unit with 25 kW Masthead TXRX |
| First Suffix: | M | = Masthead Transceiver System (Standard Commercial) |
| | N | = Masthead Transceiver System (With additional Facilities) |
| | B | = Bulkhead Transceiver System (Standard Commercial) |
| | C | = Bulkhead Transceiver System (With additional Facilities) |

(For the Bulkhead Transceiver type Turning Units the Transceiver has a separate number)

| | | |
|---|---|---|
| Second Suffix: | A | (110/240 V, 50/60 Hz, 1 Phase AC, Standard/High Speed, X-Band) |
| | D | (24/32 V DC, Standard Speed, X-Band) |
| Third Suffix: | P | (Pulse) |
| | R | (Pulse, Perf Mon) |
| | S | (Pulse, Synchro) |
| | T | (Pulse, Perf Mon, Synchro) |

**3) BULKHEAD TRANSCEIVER Numbers**
The Bulkhead Transceiver Unit number consists of a number plus a single letter suffix.

| | | |
|---|---|---|
| | 65810. | = X-Band, 10 kW Bulkhead, AC |
| | 65825. | = X-Band, 25 kW Bulkhead, AC |
| First Suffix: | A | = Standard Commercial Transceiver |
| | B | = Commercial Transceiver with additional facilities |

**4) PROCESSOR ELECTRONICS UNIT Numbers : 65800xxxx**
Processor part numbers have a four letter suffix.

| | | | |
|---|---|---|---|
| First Suffix: Radar Type – | | | |
| | P | =EPA | (Electronic Plotting Aid) |
| | T | =ATA | (Automatic Tracking Aid) |
| | R | =ARPA | (Automatic Radar Plotting Aid) |
| Second Suffix: Mains Input - | | | |
| | A | = (110/240 V, 50/60 Hz, 1 Phase AC) | |

Annex to
TAC No.397699

D = (24/32 V DC)

**Third Suffix: Complexity –**

R = (Two Card, Standard Compass)
V = (Two Card, Special Compass)

**FourthSuffix :MMI:**

A = Integral, Joystick Only, No Memory Card Module
B = Integral, Rollerball Only, No Memory Card Module
C = Integral, No Joystick/Rollerball or Memory card Modules
J = Integral, Joystick and Memory card Module
R = Integral, Rollerball and Memory card Module
K = Integral Keyboard, Joystick and Memory card Module
L = Integral Keyboard, Rollerball and Memory card Module
S = 340 Split Cabinet Version, with Joystick and Memory card Module
T = 340 Split Cabinet Version with Rollerball &Memory card Module
U = 340 Kit Version, with Joystick and Memory card Module
V = 340 Kit Version with Rollerball and Memory card Module
W = 340 Kit Version with Kboard , Joystick and Memory card Module
X = 340 Kit Version with Keyboard, Rollerball and Memory card Module
Y= 340 Split Cabinet Version with Keyboard andJoystick and Memory card Module
Z= 340 Split Cabinet Version with Keyboard and Rollerball and Memory card Module

**6) MONITOR Numbers**

The Display Unit number consists of a number plus a one letter suffix.

**Number:**

**65814...** = 180 Display Unit
**65821...** = 250 Display Unit
**65826...** = 340 Display Unit

**First Suffix: Mounting/Resolution**

F = (Table Mounting High resolution - applies to 180/250)
K = (Table Mounting Medium Resolution - applies to 250)
L = (Split Cabinet Medium Resolution - applies to 340)
N = (Kit Format High Resolution - applies to 180/250/340)
P = (Kit Format Medium Resolution - applies to 250/340)

**As above with additional Buffered RGB&Sync Output**

R = (Table Mounting High resolution - applies to 180/250)
V = (Table Mounting Medium Resolution - applies to 250)
W = (Split Cabinet Medium Resolution - applies to 340)
Y = (Kit Format High Resolution - applies to 180/250)
Z = (Kit Format Medium Resolution - applies to 250/340)

Kit format displays are designed to fit into a third party console.

**6) Ancillaries**

**Transceiver Compatibility Unit.** (Required when interfacing BM II Transceiver to a BME Display)

**65841A**: AC Version
**65841D**: DC Version

**Display Compatibility Unit** **65840A** (Required when interfacing BM II Display to a BME Transceiver)
**Interswitch** **65842A** 2x4 Interswitch
**65843A** 6x6 Interswitch
**Serial Interface Unit** **65847A**
**Slave Junction Box** **65849A**

STANDARD SPEED (25rpm)

H 110/120V, 50/60Hz, 1 Phase Motor, Standard Speed
E 220/240V, 50/60Hz, 1 Phase Motor, Standard Speed
E 110/120V, 50/60Hz, 3 Phase Motor, Standard Speed
C 220/240V, 50/60Hz, 3 Phase Motor, Standard Speed
B 380/440V, 50/60Hz, 3 Phase Motor, Standard Speed

HIGH SPEED (45rpm)

H 110/120V, 50/60Hz, 1 Phase Motor, High Speed
E 220/240V, 50/60Hz, 1 Phase Motor, High Speed
F 110/120V, 50/60Hz, 3 Phase Motor, High Speed
E 220/240V, 50/60Hz, 3 Phase Motor, High Speed
C 380/440V, 50/60Hz, 3 Phase Motor, High Speed

**Sperry Marine**

We Navigate Solutions.

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## Type Approval Certificate for: Bridgemaster E

**Issuing Country:** China
**Issuing Agency:** China Classification Society
**Date of Issue:** 28 September 2003
**Notes:** Cert. # HBT03420085 Expiration: September 27, 2007

Print this Type Approval
View higher-resolution PDF
(Recommended for quality printing or for saving on hard drive. Requires Adobe Acrobat Reader, free from www.adobe.com)

格式 Form CP302

中 国 船 级 社
CHINA CLASSIFICATION SOCIETY

# 船用产品型式认可证书

编号 No HBT03420085

## CERTIFICATE OF TYPE APPROVAL FOR MARINE PRODUCT

| | | | |
|---|---|---|---|
| 产品名称 Description | Marine Radar/ARPA/ATA/EPA | 制造厂名 Manufacturer | Northrop Grumman Sperry Marine |
| 产品型号 Model | Bridge Master E | | |
| 图纸批准号 Approval No.of drawing | LDA99420002 | 厂 址 Address | 1118 Burlington Road, New Malden Surry, KT3 4NR, UK |

产 品 明 细
**Particulars**

请见附页.

Please see attached sheets.

兹证明本社验船师根据本社规范和有关规则，对上述产品的图纸和技术文件进行了审核，并于 2003 年 09 月 05 日 在 Northrop Grumman Sperry Marine 参加了型式试验,并做了质量管理体系现场考察,产品图纸和试验结果均符合本社规范和 有关要求*,现予认可。

型式认可后，该产品仍需按本社规定进行检验和发证。

**THIS IS TO CERTIFY** that the Surveyor to this Society has, in accordance with the Rules and relevant Regulations of this Society, examined the drawings and technical documents of the above-mentioned product, and carried out the type test and audited the quality assurance system at Northrop Grumman Sperry Marine on 5th of September, 2003, and that both the drawings and test results are found to be in compliance with the Rules of this Society and relevant requirement *. The Type Approval for the subject product is hereby granted.

After the Type Approval, the subject products should be surveyed and certified in accordance with the requirements of this Society.

*--IMO A823（19）, IMO MSC.64(67), IEC60872, IEC60936, IEC60945
TECHNICAL REGULATION FOR STATUTORY SURVEY OF SEA-GOING SHIPS AND OFFSHORE INSTALLATIONS (1999)

本证书有效期限至 This Cert. is valid until September 27, 2008

发证日期 Date of issue September 28, 2003

# 中 国 船 级 社

# CHINA CLASSIFICATION SOCIETY

## 证 书 附 页

## CERTTIFICATE ATTACHED SHEET

编号

**No. HBT03420085**

## 产 品 明 细

## Particulars

Systems can use a combination of the following equipment:

| Name of Unit | Configuration | | |
|---|---|---|---|
| Monitor Units | 180 | 65814F, N, R or Y | 65815A or D |
| | 250 D | 65821F, K, N, P, R, V, Y, Z | 65817A, D, G or H 65819 A or |
| | 340 | 65826L, N, P, W or Z | 65823 A or B |
| Processor Units | ARPA | 65800RA⊥∀, RD⊥∀, ZA⊥∀ or ZD⊥∀ | |
| | ATA | 65800TA⊥∀, TD⊥∀, YA⊥∀ or YD⊥∀ | |
| | EPA | 65800PAR∀, PAV∀, PDR∀ or PDV∀ | |
| | EPA(L) | 65800PAM☆, PAN☆, PDM☆or PDN☆ | |
| | | ⊥: R, T, V or X | |
| | | ∀: E, F, G, H, J, K, L, M, N, O, P, R, S, T, U, V, W, X, Y or Z | |
| | | ☆: A, B, C or D | |
| Turning Units (S-Band) | S-Band 30kW, Masthead Mounted Transceiver & Turning Unit | | |
| | | 65830Mαη or 65830Nαη | Non HSC |
| | | 65830MNη or 65830NNη | HSC |
| | S-Band 30kW, Turning Unit for Bulkhead Transceiver | | |
| | | 65830Bαη or 65830Cαη | Non HSC |
| | | 65830BNη or 65830CNη | HSC |
| | | α: E, F, G or H | |
| | | η: R, T or U | |
| | | N: J, K, L, M, P, Q, R or S (operating voltage) | |
| S-Band Transceiver | S-Band 30kW, Bulkhead Transceiver | | |
| | | 65831A or B | |
| Turning Units (X-Band) | X-Band 25kW, Masthead Mounted Transceiver & Turning Unit | | |
| | | 65825#A~ | |
| | X-Band 10kW, Masthead Mounted Transceiver & Turning Unit | | |
| | | 65810#A~ or 65810#D~ | |

| | |
|---|---|
| X-Band Transceivers | X-Band Turning Unit for Bulkhead Transceivers<br>65801BAR or 65801CA~<br>25kW Bulkhead Transceiver<br>65825A, B, E, F, G, H, L, P, T or W<br>10kW Bulkhead Transceiver<br>65810A, B, E, F, G, H, L, P, T or W<br>~: M, N, P, T or W<br>~: R, T or U |
| Scanner Controller | 65837AA to AH |
| Antennas | S-Band 65612A 3.7m & 65609A 2.7m<br>X-Band 65604A 1.2m, 65606A 1.8m & 65608A 2.4m |

Also can be used with auxiliary units:

| | | | |
|---|---|---|---|
| Display Compatibility Unit | 65840A | Transceiver Compatibility Unit | 65841A or 65841D |
| Interswitch Unit | 65842A or 65846A | Slave Junction Box | 65849A |
| Serial Interface Unit | 65847A | | |

本证书有效期限至
This Cert. is valid until September 27, 2008
发证日期
Date of issue September 28, 2003

中国船级社 C2 03 CHINA CLASSIFICATION SOCIETY

**Sperry Marine**

We Navigate Solutions.

Go Back

## Type Approval Certificate for: Bridgemaster E

**Issuing Country:** United States
**Issuing Agency:** Federal Communications Commission (FCC)
**Date of Issue:** 01 October 1999
**Notes:** Cert. #BT9BME25

Print this Type Approval
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(Recommended for quality printing or for saving on hard drive. Requires Adobe Acrobat Reader, free from www.adobe.com)

FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

# GRANT OF EQUIPMENT AUTHORIZATION

Certification

Litton Marine Systems BV
118 Burlington Road
New Malden Surrey KT3 4NR England

Date of Grant: 5/3/99

Application Dated: 3/4/99

Attention: Bob Sasse

## NOT TRANSFERABLE

EQUIPMENT AUTHORIZATION is hereby issued to the named GRANTEE, and is VALID ONLY for the equipment identified hereon for use under the Commission's Rules and Regulations listed below

FCC IDENTIFIER [redacted]

Name of Grantee [redacted]

Equipment Class : Marine Radar

| Grant Notes | FCC Rule Parts | Frequency Range (MHZ) | Output Watts | Frequency Tolerance | Emission Designator |
|---|---|---|---|---|---|
| | 80 | 9200 - 9500 | 25000 | | 100MP0N |

Mail To:
Rowland Johnson, Elec. Engr.
Hyak Laboratories, Inc.
7011 Calamo St., Suite 107
Springfield, VA 22150

9903158315137001

In correspondence concerning this grant, please refer to the FCC IDENTIFIER and the date of grant. PDW

FCC 731A
October 1991

Sperry Marine
We Navigate Solutions

Go Back

## Type Approval Certificate for: Bridgemaster E

**Issuing Country:** United States
**Issuing Agency:** Federal Communications Commission (FCC)
**Date of Issue:** 01 October 1999
**Notes:** Cert. AKBMK4217-17

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FEDERAL COMMUNICATIONS COMMISSION

WASHINGTON, D.C. 20554

# GRANT OF EQUIPMENT AUTHORIZATION

Type Acceptance

Sperry Marine Inc
1070 Seminole Trail
Charlottesville, VA 22901

Date of Grant: July 26, 1993

File No.: 31010/EQD 17.9

Application dated: June 15, 1993

Attention: E.G. Dixon, Vice President Marine Radar

NOT TRANSFERABLE

EQUIPMENT AUTHORIZATION is hereby issued to the named GRANTEE, and is VALID ONLY for the equipment identified hereon for use under the Commission's Rules and Regulations listed below.

FCC IDENTIFIER: [redacted]

Name of Grantee: [redacted]

Equipment Class: Marine Radar

| Note(s) | Rule Part(s) | Frequency Range (MHz) | Output Watts | Frequency Tolerance | Emission |
|---|---|---|---|---|---|
| - | 80 | 9400 | 10000 | - | 158MPON |

FEDERAL COMMUNICATIONS COMMISSION

In correspondence concerning this grant, please refer to the FCC IDENTIFIER, File No., and date of grant.

FCC 731A
October 1991

Sperry Marine
We Navigate Solutions.

Go Back

## Type Approval Certificate for: Bridgemaster E

**Issuing Country:** United States
**Issuing Agency:** Federal Communications Commission (FCC)
**Date of Issue:** 01 October 1991
**Notes:** Cert. # BT9BVT30

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FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

# GRANT OF EQUIPMENT AUTHORIZATION
Certification

Litton Marine Systems BV
118 Burlington Road
New Malden Surrey KT3 4NR England

Date of Grant: 11/6/98

Application Dated: 9/9/98

Attention: Bob Sasse

## NOT TRANSFERABLE

EQUIPMENT AUTHORIZATION is hereby issued to the named GRANTEE, and is VALID ONLY for the equipment identified hereon for use under the Commission's Rules and Regulations listed below.

FCC IDENTIFIER: BT9BVT30

Name of Grantee: Litton Marine Systems BV

Equipment Class: Marine Radar

| Grant Notes | FCC Rule Parts | Frequency Range (MHZ) | Output Watts | Frequency Tolerance | Emission Designator |
|---|---|---|---|---|---|
| | 80 | 2900 - 3100 | 30000 | | 109MPON |

Mail To:
Rowland Johnson, President
Hyak Laboratories Inc
7011 Calamo Street, Suite 107
Springfield, VA 22150

9809246015455004

In correspondence concerning this grant, please refer to the FCC IDENTIFIER and the date of grant

FCC 731A
October 1997

Sperry Marine

We Navigate Solutions.

Go Back

**Declaration of Conformity for:** Bridgemaster E
**Issuing Country:** European Union (EU)
**Issuing Agency:** Sperry Marine
**Date of Issue:** 15 September 2003
**Notes:** DOC 016

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NORTHROP GRUMMAN
Electronic Systems

# Marine Equipment Directive Declaration of Conformity

## Sperry Marine

*Manufacturer:* Northrop Grumman Sperry Marine B.V.
118 Burlington Road
New Malden, Surrey, KT3 4NR
United Kingdom

*Declaration:*
It is hereby certified that the Equipment listed conforms with the Council Directive for Marine Equipment 96/98/EC and 2002/75/EC and has been Type examined by Notified Body No 191 shown on Certificates of Type Examination No QQ-MED-28/03-01, QQ-MED-29/03-01 and 02, QQ-MED-30/03-01, QQ-MED-31/03-01, QQ-MED-32/03-01, 02 and 03.

*Equipment:* BridgeMaster E

| Type Number | Description | Type Number | Description |
|---|---|---|---|
| 65826N,L,W,P or Z | 340 Monitor | 65831A or B | Transceiver (30kW) |
| 65821F,K,N,P,R,V,Y or Z | 250 Monitor | 65801BAR or CA⊕ | Turning Unit |
| 65818A or D | 180 FPD Monitor | 65830B*R or C*⊕ | Turning Unit |
| 65817A, D, G or H | 250 FPD Monitor | 65837A♣ | Scanner Control Unit |
| 65819A or D | 250 FPD Monitor | 65604A | X-Band Antenna 4ft |
| 65823A or B | 340 FPD Monitor | 65606A | X-Band Antenna 6ft |
| 65814N,Y,F or R | 180 Monitor | 65608A | X-Band Antenna 8ft |
| 65800 R♦◇⊕ or Z♦◇⊕ | Processor Unit (ARPA) | 65609A | S-Band Antenna 9ft |
| 65800 T♦◇⊕ or Y♦◇⊕ | Processor Unit (ATA) | 65612A | S-Band Antenna 12ft |
| 65800 P♦◇⊕ | Processor Unit (EPA) | 65842A | Interswitch Unit |
| 65800 P♦M♣ or P♦N♣ | Processor Unit EPA (L) | 65846A | Interswitch Unit |
| 65810 ⊕*⊕ | Transceiver/Turning Unit (10kW) | 65847A | Serial Interface |
| 65825 ⊕A⊕ | Transceiver/Turning Unit (25kW) | 65849A | Slave Junction Box |
| 65830 M*⊕ or N*⊕ | Transceiver/Turning Unit (30kW) | | |
| 65810A,B,E,F,G,H,L,P,T or W | Transceiver (10kW) | | |
| 65825A,B,E,F,G,H,L,P,T or W | Transceiver (25kW) | | |

Option Codes * A or D for X-Band or E, F, G, H, J, K, L, M, P, Q, R or S for S-Band
♦ A or D ◇ R, T, V or X ♣ B, C, E, F or H ⊕ M, N, P, T or W ⊕ R, T or U
⊕ E, F, G, H, J, K, L, M, N, Q, P, R, S, T, U, V, W, X, Y or Z ♣ A, B, C or D

*Standards Applied:-*

| | |
|---|---|
| EN 60936-1: 2000 | Marine Shipborne Radar Equipment |
| EN 60936-2: 1999 | Shipborne Radar for High Speed Craft |
| EN 60945: 1997 | General Requirements for Marine Navigation Equipment |
| EN 60872-1: 1998 | Automatic Radar Plotting Aids (ARPA) |
| EN 60872-2: 1999 | Automatic Tracking Aids (ATA) |
| EN 60872-3: 2001 | Electronic Plotting Aids (EPA) |
| EN 61162-1: 2000 | Digital Interfaces |

15th September 2003

DOC 016

Mike Pope, Technical Director - Europe — Date of Issue — Certificate Number

**Sperry Marine**
We Navigate Solutions.

Go Back

## Type Approval Certificate for: Bridgemaster E

**Issuing Country:** Romania
**Issuing Agency:** Registrul Naval Român
**Date of Issue:** 30 December 1999
**Notes:** Cert. #: 17/I/347699

Print this Type Approval
View higher-resolution PDF
(Recommended for quality printing or for saving on hard drive. Requires Adobe Acrobat Reader, free from www.adobe.com)

REGISTRUL NAVAL ROMÂN
*ROMANIAN REGISTER OF SHIPPING*

### CERTIFICAT PENTRU ACCEPTAREA DE TIP
*CERTIFICATE OF TYPE ACCEPTANCE*

Se certifică prin prezentul că produsul ..... MARINE SHIPBORNE RADAR .....
*This is to certify that the manufactured product*
..... SYSTEMS ..... (EPA, ATA, ARPA) .....
Tip ..... Bridgemaster E - X band - 180/250/340 mm - see Annex .....
*Type*
*Fabricant* ..... LITTON MARINE SYSTEMS BV - U.K. .....
*Manufacturer*
Date tehnice generale ..... 9410 Gts ± 30 Mhz .....
*General technical data*
Destinaţie ..... Detection of the above sea objects and their position .....
*Purpose*
este în concordanţă cu cerinţele R.N.R. şi se acceptă pentru utilizare la bordul navelor cu clasa
*is complying with R.N.R. requirements and is allowed for use on board of ships with R.N.R. class or in devices*
R.N.R. sau în echipamente cu certificat R.N.R., conform destinaţiei.
*with R.N.R. certificates, according to the purpose.*

Baza acceptării ..... NMB Rules; IMO and IEC Requirements. .....
*Basis of acceptance*

1. Documentaţia tehnică cu aprobarea R.N.R. Nr./data ..... 17/I/BV-3476/24.06.99 .....
*Technical documentation with the R.N.R. approval No./date*

2. Probe sub supraveghere R.N.R. a exemplarului (lotului) prototip ..... taken from current production .....
*Tests under R.N.R. technical supervision for prototype specimen (batch)*

Nr. de fabricaţie .....
*Work's No.*

Buletin de încercare nr. ..... annex to the T.A. Protocol .....
*Test Report No.*

3. Alte buletine de încercare ..... DE RA - MED .....
*Other test reports*

4. Cunoaşterea procesului de producţie, organizării întreprinderii şi gradului de dotare tehnică.
*Knowledge of the production process, of the organization of works and technical outfit state.*

5. .....

Acceptarea este valabilă numai dacă produsul în chestiune este utilizat în concordanţă cu condi-
*The acceptance is valid only when the item in question is used in accordance with the manufacturer's conditions*
ţiile fabricantului specificate în ..... Ship's Manual .....
*as stated in*

CONDIȚII SUPLIMENTARE ȘI OBSERVAȚII
*ADDITIONAL CONDITIONS AND REMARKS*

1. The fitting of the ship is to be made according to SOLAS 74 Ch.V, IMO resolutions and RNR Rules.

The equipment to be supplied for fitting on ships with RNR class shall:
- comply from the point of view of construction with the approval documentation;
- be in good operation condition ;
- be delivered with a set of spare parts approved by RNR ;
- be accompanied by a handbook in English, comprising the general technical description, operational instructions, interconnection and circuit diagrams, maintenance procedure.

2. The Romanian Register of Shipping reserves to itself the right to carry out the sounding test and checkings of the equipment from current production.

3. The Compass Safe Distance and the inscription "RNR 347699" will be indicated on every device to be mounted on the bridge.

ACCEPTAREA ESTE VALABILĂ PÎNĂ LA December 30 - 2004
*THE ACCEPTANCE IS VALID UNTIL*

CONDIȚII GENERALE
*GENERAL CONDITIONS*

1. Modificări ale proiectului sau materialelor utilizate care influențează calitatea produsului pot fi
*Changes of design or of the materials used, which influence the product quality, may be carried out only*

făcute numai cu acceptul R.N.R.
*with the R.N.R. acceptance.*

2. Acceptarea poate fi retrasă în cazurile:
*The acceptance may be withdrawn in case of:*

— modificări ale proiectului și materialelor fără acceptul R.N.R.;
*changes of the design and the materials without R.N.R. agreement;*

— rezultate nesatisfăcătoare în exploatare;
*dissatisfactory service results;*

— modificarea Regulilor și metodei de acceptare;
*alterations of Rules and acceptance practice;*

— expirarea termenului de valabilitate.
*expired term of validity.*

Eliberat la 30 December 1999 Localitatea Bucharest
*Issued on* *Place*

Nr. 17/1/347699
*No.*

L. S.

Liliana Zaharia
SEF SERVICIU SUPRAVEGHERE,
*Head of Survey Department,*

Victor Bades
Inspector,
*Surveyor,*

I.P.Ex. — [illegible]

Annexes
TAC No.397069

**Configurations**

**BridgeMaster E Units**

Systems can use a combination of the following equipment:

| | | |
|---|---|---|
| Monitor Units | 150 | 65314F or R |
| | 250 | 65321F or R, K or V |
| | 340 | 65320L or P, W or Z or N |
| Processor Units | EPA | 65300P Red See note 1 for option labels |
| | ATA | 65300T Red |
| | ARPA | 65300R Red |

Note 1 H = A or D
L = R or T
# = A, B, C, J, H, K, L, S, T, U, V, W, X, Y, or Z

| | | |
|---|---|---|
| Turning Units | X-Band 25kW | 65825MAP to MAT with Transceiver fitted |
| | X-Band 10kW | 65810MAT to MOP with Transceiver fitted |
| | | 65831DAP to DAT no Transceiver fitted |
| Transceiver | X-Band 25kW | 65825A |
| | X-Band 10kW | 65810A |
| Scanner controller | | 65857A or A+ |
| Antennas X-Band | | 65804A 1.2m, 65806A 1.8m or 65808A 2.4m |

Also can be used with ancillary units:

| | |
|---|---|
| Display Compatibility Unit | 65840A |
| Transceiver Compatibility Unit | 65841A or 65841D |
| Interswitch Unit | 65842A or 65845A |
| Slave Junction Box | 65843A |
| Sand Interface Unit | 65847A |

**BridgeMaster E Unit Numbers:**

1) **ANTENNA Numbers**
The Antenna number consists of a number plus a single letter suffix.

| | |
|---|---|
| 65804A | X-Band, 4 ft, 1.2m |
| 65806A | X-Band, 6 ft, 1.8m |
| 65808A | X-Band, 8 ft, 2.4m |

2) **TURNING UNIT Numbers**
The Turning Unit number consists of a number plus a three letter suffix.

| | | |
|---|---|---|
| Number: 65801... | = X-Band Turning Unit without Masthead TXRX | |
| | 65810... | = X-Band Turning Unit with 10 kW Masthead TXRX |
| | 65825... | = X-Band Turning Unit with 25 kW Masthead TXRX |
| First Suffix: | M | = Masthead Transceiver System (Standard Commercial) |
| | N | = Masthead Transceiver System (With additional Facilities) |
| | B | = Bulkhead Transceiver System (Standard Commercial) |
| | C | = Bulkhead Transceiver System (With additional Facilities) |

(For the Bulkhead Transceiver type Turning Units the Transceiver has a separate number)

| | | |
|---|---|---|
| Second Suffix: A | (110/240 V, 50/60 Hz, 1 Phase AC, Standard/High Speed, X-Band) | |
| | B | (24/32 V DC, Standard Speed, X-Band) |
| Third Suffix: | P | (Pulse) |
| | R | (Pulse Perf Mon) |
| | S | (Pulse Synthetic) |
| | T | (Pulse Perf Mon, Synthetic) |

3) **BULKHEAD TRANSCEIVER Numbers**
The Bulkhead Transceiver Unit number consists of a number plus a single letter suffix.

| | | |
|---|---|---|
| | 65810... | = X-Band, 10 kW Bulkhead, AC |
| | 65825... | = X-Band, 25 kW Bulkhead, AC |
| First Suffix | A | = Standard Commercial Transceiver |
| | B | = Commercial Transceiver with additional facilities |

4) **PROCESSOR ELECTRONICS UNIT Numbers** : 65800xxx
Processor part numbers have a four letter suffix.
First Suffix: Radar Type =

| | | |
|---|---|---|
| P | =EPA | (Electronic Plotting Aid) |
| T | =ATA | (Automatic Tracking Aid) |
| R | =ARPA | (Automatic Radar Plotting Aid) |

Second Suffix: Mains Input =

| | |
|---|---|
| A | = (110/240 V, 50/60 Hz, 1 Phase AC) |

Annex to
TAC No 397699

D = (24/32 V DC)

Third Suffix: Complexity –
R = (Two Card, Standard Compass)
V = (Two Card, Special Compass)

Fourth Suffix (MM):

A = Integral, Joystick Only, No Memory Card Module
B = Integral, Rollerball Only, No Memory Card Module
C = Integral, No Joystick/Rollerball or Memory card Modules
J = Integral, Joystick and Memory card Module
K = Integral, Rollerball and Memory card Module
L = Integral Keyboard, Joystick and Memory card Module
S = 340 Split Cabinet Version with Joystick and Memory card Module
T = 340 Split Cabinet Version with Rollerball and Memory card Module
U = 340 Kit Version with Joystick and Memory card Module
V = 340 Kit Version with Rollerball and Memory card Module
W = 340 Kit Version with Keyboard, Joystick and Memory card Module
X = 340 Kit Version with Keyboard, Rollerball and Memory card Module
Y = 340 Split Cabinet Version with Keyboard and Joystick and Memory card Module
Z = 340 Split Cabinet Version with Keyboard and Rollerball and Memory card Module

5) MONITOR Numbers

The Display Unit number consists of a number plus a one letter suffix.

Number: 63814... = 150 Display Unit
63821... = 250 Display Unit
63835... = 340 Display Unit

First Suffix: Mounting/Resolution
F = (Table Mounting High resolution - applies to 150/250)
K = (Table Mounting Medium Resolution - applies to 250)
J = (Split Cabinet Medium Resolution - applies to 340)
N = (Kit Format High Resolution - applies to 150/250/340)
P = (Kit Format Medium Resolution - applies to 250/340)

As above with additional Buffered RGB/Bone Output
R = (Table Mounting High resolution - applies to 150/250)
V = (Table Mounting Medium Resolution - applies to 250)
W = (Split Cabinet Medium Resolution - applies to 340)
Y = (Kit Format High Resolution - applies to 150/250)
Z = (Kit Format Medium Resolution - applies to 250/340)
Kit forms, displays are designed to fit into a third party console

6) Ancillaries

Transceiver Compatibility Unit (Required when interfacing BM 1 Transceiver to a BME Display)
63841A : AC Version
63841B DC Version

Display Compatibility Unit 63848A (Required when interfacing BM 1 Display to a BME Transceiver)

Interswitch 63842A 2x4 Interswitch
63841A 8x8 Interswitch

Serial Interface Unit 63847A

Stirrup Junction Box 63843A

STANDARD SPEED (25rpm)
H 110/120V, 50/60Hz, 1 Phase Motor, Standard Speed
E 220/240V, 50/60Hz, 1 Phase Motor, Standard Speed
E 110/120V, 50/60Hz, 3 Phase Motor, Standard Speed
C 220/240V, 50/60Hz, 3 Phase Motor, Standard Speed
B 380/440V, 50/60Hz, 3 Phase Motor, Standard Speed

HIGH SPEED (45rpm)
H 110/120V, 50/60Hz, 1 Phase Motor, High Speed
E 220/240V, 50/60Hz, 1 Phase Motor, High Speed
F 110/120V, 50/60Hz, 3 Phase Motor, High Speed
E 220/240V, 50/60Hz, 3 Phase Motor, High Speed
C 380/440V, 50/60Hz, 3 Phase Motor, High Speed

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## Type Approval Certificate for: Bridgemaster E

**Issuing Country:** Canada
**Issuing Agency:** Industry Canada / Industrie Canada
**Date of Issue:** 20 April 1999
**Notes:** Cert# 2907381104

Print this Type Approval
View higher-resolution PDF
(Recommended for quality printing or for saving on hard drive. Requires Adobe Acrobat Reader, free from www.adobe.com)

Industry Canada Industrie Canada

No. ➤ 10216

# RADIO EQUIPMENT CERTIFICATE OF TYPE APPROVAL

# CERTIFICAT D'HOMOLOGATION DE MATÉRIEL RADIO

| | | |
|---|---|---|
| CERTIFICATION No.<br>No. DE CERTIFICATION | ➤ | 2907381104 |
| ISSUED TO<br>DÉLIVRÉ A | ➤ | LITTON MARINE SYSTEMS B.V. |
| TYPE OF EQUIPMENT<br>GENRE DE MATÉRIEL | ➤ | MARINE RADAR |
| TRADE NAME AND MODEL<br>MARQUE ET MODÈLE | ➤ | 65820660 |
| FREQUENCY RANGE<br>BANDE DE FRÉQUENCES | ➤ | 9300 MHz to 9500 MHz |
| EMISSION DESIGNATION<br>DESIGNATION D'ÉMISSION | ➤ | 100MPON |
| R.F. POWER RATING<br>PUISSANCE NOMINALE R.F | ➤ | 25 KWatts |
| CERTIFIED TO<br>CERTIFIÉ SELON LE | ➤ | SPECIFICATION RSS138 ISSUE 1<br>CAHIER DES CHARGES ÉDITION |

Certification of equipment means only that the equipment has met the requirements of the above noted specification. License applications, where applicable to use certified equipment, are acted on accordingly by the issuing office and will depend on the existing radio environment, service and location of operation.

This certificate is issued on condition that the holder complies and will continue to comply with the requirements of the radio standards specifications and procedures issued by the Department.

L'homologation de matériel terminal signifie seulement qu'il est conforme aux exigés du cahier des charges mentionné ci-dessus. Les demandes de licence, le cas échéant, sur de l'utilisation de matériel certifié seront traitées en conséquence par le bureau chargé de délivrer lesdites licences, en tenant compte du milieu radioélectrique actuel du service radio existant et de l'emplacement de la station.

Le présent certificat est délivré à condition que le détenteur se conforme et continue à se conformer aux exigences des cahiers des charges et procédures sur les normes radioélectriques publiées par le ministère.

ISSUED UNDER THE AUTHORITY OF MINISTER OF INDUSTRY
DELIVRÉ AVEC L'AUTORISATION DU MINISTRE DES INDUSTRIE

DATE April 20, 1999

FOR

DIRECTOR GENERAL
SPECTRUM
ENGINEERING
BRANCH

DIRECTEUR GÉNÉRAL
GÉNIE
DU SPECTRE

Canada

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Go Back

**Type Approval Certificate for:** Bridgemaster E
**Issuing Country:** Croatia
**Issuing Agency:** Croatian Register of Shipping
**Date of Issue:** 05 June 2004
**Notes:** Cert #: 03-000586/030418

Print this Type Approval
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**HRVATSKI REGISTAR BRODOVA** *Croatian Register of Shipping*

# POTVRDA O TIPNOM ODOBRENJU
*TYPE APPROVAL CERTIFICATE*

Br / No 03-000586/030318

Potvrđuje se da je ovaj proizvod, u skladu s Pravilima za tehnički nadzor pomorskih brodova - Dio 1. - Opći propisi - Odjeljak 3. -Tipno odobrenje proizvoda, odobren za ugradnju na brodove i postrojenja pod nadzorom Hrvatskog registra brodova.
*This is to certify that this product on the basis of the Rules for technical supervision of sea-going ships - Part 1 - General requirements - Chapter 3 - Type approval of products, is approved for use on board ships and installations under supervision of the Croatian Register of Shipping.*

TIP I OPIS PROIZVODA:
*TYPE AND DESCRIPTION OF PRODUCT:*

**BRODSKA RADARSKA OPREMA**
**tip Bridgemaster E - 180mm Radar Systems**
**vidi poleđinu:**
***MARINE SHIPBORNE RADAR EQUIPMENT***
***type Bridgemaster E - 180mm Radar Systems***
***see overleaf:***

PROIZVOĐAČ: / *MANUFACTURER*
***LITTON MARINE SYSTEMS BV***
***118 Burlington Road***
***New Malden, Surrey, KT3 4NR***
***United Kingdom***

PROIZVOD UDOVOLJAVA SLIJEDEĆIM PRAVILIMA/PROPISIMA:
*THIS PRODUCT MEETS FOLLOWING RULES/REGULATIONS:*

HRVATSKI REGISTAR BRODOVA: Pravila za tehnički nadzor pomorskih brodova, Dio 16
*CROATIAN REGISTER OF SHIPPING: Rules for the Technical Supervision of Sea-Going Ships, Part 16*
*IMO Resolution MSC 64(67) Annex 4: Recommendation on performance standards for radar equipment*

PODRUČJE PRIMJENE/POSEBNI GRANIČNI UVJETI:
*FIELD OF APPLICATION/SPECIAL OPERATIONAL LIMITS:*

ODOBRENJE VRIJEDI DO: / *APPROVAL IS VALID UNTIL:* 5.lipnja,2004. / 5th June 2004

UZ UVJETE NAVEDENE NA POLEĐINI
*SUBJECT TO CONDITIONS OVERLEAF*

Mjesto i datum / *Place and date* Split, 5. lipnja, 2000. / *Split, 5th June 2000*

M.P.

Predsjednik Direktor
Igor Vidović, dipl. ing.

**Odobrenje je valjano ako je ovaj proizvod izvedeni prema slijedećoj dokumentaciji:**
*The approval is valid if this product is manufactured in accordance with the following documentation:*

- Brodski, Tehnički i Instalacijski priručnik; Priručnik za korištenje; Brošure
- Izvještaji o ispitivanju DERA/SS/WI/R/TT-22/97, 10.1998.; DERA/SS/CI/R/TT-20/98, 06.1999; DERA/SS/CI/R/TT-11/99, 02.2000.; kako odgovara
- Svjedodžba DERA - MED - 38/99-03 od 17.06.1999.

- *Ship's , Technical and Ancillary Units and Radar Systems Manual; User Guide; Brochures*
- *Test reports DERA/SS/WI/R/TT-22/97, Oct.1998.; DERA/SS/CI/R/TT-20/98, June1999; DERA/SS/CI/R/TT-11/99, Feb 2000; as appropriate*
- *Certificate DERA - MED - 38/99-03 dated 17 June1999*

### *Bridgemaster E - 180mm Radar X- Band*

| | |
|---|---|
| *MAIN UNIT Comprising:* | |
| *Transceiver/Turning Unit (10kW)* | *65810 MAR,MAT, MDR or MDT* |
| *Transceiver/Turning Unit (25kW)* | *65825 MAR,MAT, MDR or MDT* |
| *or Transceiver, Bulkhead Unit (10kW)* | *65810 A* |
| *or Transceiver, Bulkhead Unit (25kW)* | *65825 A* |
| *and Turning Unit* | *65801BAR or BAT* |
| *X-Band Antenna (4ft)* | *65604A* |
| *or X-Band Antenna (6ft)* | *65606A* |
| *or X-Band Antenna (8ft)* | *65608 A* |
| *EPA Systems* | |
| *Monitor- Radar Display* | *65814-F or R* |
| *Processor Radar/EPA, integral Joystick* | *65800 PARJ or PDRJ* |
| *or Processor Radar/EPA,integral Rollerball* | *65800 PARR or PDRR* |
| *ATA Systems* | |
| *Monitor - Radar Display* | *65814- F or R* |
| *Processor Radar/ATA,integral Joystick* | *65800 TARJ or TDRJ* |
| *or Processor Radar/ATA,integral Rollerball* | *65800 TARR or TDRR* |

*And which may include:*

| | |
|---|---|
| *Interswitch Unit* | *65842 A* |
| *Serial Interface* | *65847 A* |

### *Bridgemaster E - 180mm Radar S- Band*

| | |
|---|---|
| *MAIN UNIT Comprising:* | |
| *Transceiver/Turning Unit (30kW)* | *65830 M9R or T (4 - voltage)* |
| *or Turning Unit* | *65830 B8R or T (option code)* |
| *and Bulkhead Transceiver (30 kW)* | *65831A* |
| *Scanner Control Unit* | *65837A8* |
| *S- Band Antenna (12ft)* | *65612A* |
| *EPA Systems* | |
| *Monitor- Radar Display* | *65814-F or R* |
| *Processor Radar/EPA,integral Joystick* | *65800 PARJ or PDRJ* |
| *or Processor Radar/EPA,integral Rollerball* | *65800 PARR or PDRR* |
| *ATA Systems* | |
| *Monitor- Radar Display* | *65814-F or R* |
| *Processor Radar/ATA,integral Joystick* | *65800 TARJ or TDRJ* |
| *or Processor Radar/ATA,integral Rollerball* | *65800 TARR or TDRR* |

*And which may include:*

| | |
|---|---|
| *Interswitch Unit* | *65842 A* |
| *Serial Interface* | *65847 A* |

**Ovo odobrenje ne isključuje zahtjev za nadzorom tijekom izvedbe proizvoda kod proizvođača, u skladu s gore navedenim Pravilima.**
*This approval does not eliminate the need for inspection during manufacturing of the product into manufacturers shop in compliance with a.m. Rules.*

| Raščlana | Zamjenjuje potvrdu |
|---|---|
| 14.17.00 | - |

QF - PTO - 01 2 / 2 1997 - 03

Sperry Marine

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## Type Approval Certificate for: Bridgemaster E

**Issuing Country:** Australia
**Issuing Agency:** Australian Maritime Safety Authority
**Date of Issue:** 07 July 1999
**Notes:** Cert. #: 4767

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**Type Approval Certificate for:** Bridgemaster E
**Issuing Country:** Australia
**Issuing Agency:** Australian Maritime Safety Authority
**Date of Issue:** 06 October 1999
**Notes:** Cert. # 4786

Print this Type Approval
View higher-resolution PDF
(Recommended for quality printing or for saving on hard drive. Requires Adobe Acrobat Reader, free from www.adobe.com)

Australian Maritime Safety Authority

## AUSTRALIAN MARITIME SAFETY AUTHORITY

## CERTIFICATE OF APPROVAL

No. 4786

I, the undersigned TREVOR GEORGE ROSE, hereby approve in accordance with

(i) Regulation V/12(r) of the International Convention for the Safety of Life at Sea 1974 as amended; and
(ii) Provisions 4.2.1 of Marine Orders, Part 24 (Navigational - Equipment) Issue 2,

for the purposes of conforming with performance standards contained in

IMO Resolutions:
MSC.64(67) Annex 4 — *Performance Standards for Radar Equipment* and
A.694(17) — *Performance Standards for Electronic Navigational Aids*

the equipment specified herein.

This approval does not extend to any modification of the specified equipment. Such modification shall, if approved, be the subject of a separate certificate of approval.

**EQUIPMENT:** S and X Band MARINE RADAR EQUIPMENT

**TYPE:** Bridgemaster E – 250mm Radar Systems

**MANUFACTURER:** LITTON MARINE SYSTEMS BV
118 Burlington Road
New Malden,
Surrey, KT3 4NR
United Kingdom

**IDENTIFICATION:** Litton, Bridgemaster E - 250mm Radar Systems complying with the mode indicated in the attached Certificate of Type Approval No. DERA-MED-98/04-04 issued by Defence Evaluation and Research Agency, Marine Type Approvals, Funtington, West Sussex, under the authority of the Maritime and Coastguard Agency of the United Kingdom of Great Britain and Northern Ireland dated 17 June 1999.

**CONDITIONS:**

1 This certificate of approval has been issued on the basis of the aforementioned certificate of inspection and tests.
2 The equipment must be manufactured in accordance with the requirements specified in the aforementioned certificate of inspection and tests, with regard to:
   (i) the drawings, specifications as to design and materials and other data submitted;
   (ii) the prototype submitted for testing; and
   (iii) any quality control procedures specified for the purposes of the approval.
3 The equipment is to be serviced in accordance with the manufacturer's service instructions.
4 The equipment is to remain satisfactory in service.
5 This certificate does not certify that the equipment is Year 2000 compliant and no certificate holder, other person or entity should represent to any other person or entity that this certificate is evidence of Year 2000 compliance.

This approval shall remain valid until 17 June 2004 unless suspended or cancelled before that date.

T G Rose
Manager, Ship Equipment Group

File No. 021995

Date 6 October 1999

**Sperry Marine**
We Navigate Solutions.

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## Type Approval Certificate for: Bridgemaster E

**Issuing Country:** Croatia
**Issuing Agency:** Croatian Register of Shipping
**Date of Issue:** 05 June 2004
**Notes:** Cert. # 03-000584/030318

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**HRVATSKI REGISTAR BRODOVA** *Croatian Register of Shipping*

**POTVRDA O TIPNOM ODOBRENJU**
*TYPE APPROVAL CERTIFICATE*

Ref No. 03-000584/030318

Potvrđuje se da je svaj proizvod, u skladu s Pravilima za tehnički nadzor pomorskih brodova – Dio 1. - Opći propisi - Odjeljak 3. -Tipno odobrenje proizvoda odobrenja ugrađuje na brodovod postrojenja pod nadzorom Hrvatskog registra brodova.
*This is to certify that this product on the basis of the Rules for Technical Supervision of Sea-Going Ships - Part 1 - General requirements - Chapter 3 - Type approval of products, is approved for use on board ships and installations under supervision of the Croatian Register of Shipping.*

TIP I OPIS PROIZVODA:
*TYPE AND DESCRIPTION OF PRODUCT:*

**BRODSKA RADARSKA I ARPA OPREMA**
**tip Bridgemaster E - 250mm Radar Systems**
**vidi poledinu:**
***MARINE SHIPBORNE RADAR/ARPA EQUIPMENT***
***type Bridgemaster E - 250mm Radar Systems***
***see overleaf:***

PROIZVOĐAČ:
*MANUFACTURER:*

*LITTON MARINE SYSTEMS BV*
*118 Burlington Road*
*New Malden, Surrey, KT3 4NR*
*United Kingdom*

PROIZVOD DOVOLJAVA SLIJEDEĆIM PRAVILIMA/PROPISIMA:
*THE PRODUCT MEETS FOLLOWING RULES/REGULATIONS:*

HRVATSKI REGISTAR BRODOVA: Pravila za tehnički nadzor pomorskih brodova, Dio 16
*CROATIAN REGISTER OF SHIPPING: Rules for the Technical Supervision of Sea-Going Ships, Part 16*
*IMO Resolution MSC 64(67) Annex 4: Recommendation on performance standards for radar equipment*
*IMO Resolution A.823(19): Performance standards for automatic radar plotting aids*

PODRUČJE PRIMJENE/POSEBNI GRANIČNI UVJETI:
*FIELD OF APPLICATION/SPECIAL OPERATIONAL LIMITS:*

ODOBRENJE VRIJEDI DO: 5.lipnja,2004.
*APPROVAL IS VALID UNTIL:* 5th June 2004

OV UVJETE NAVEDENE NA POLEĐINI
*AND UNDER THE CONDITIONS OVERLEAF*

Mjesto i datum: Split, 5. lipnja, 2000.
*Place and date: Split, 5th June 2000*

M.P.
(Seal)

Dipl. Ing.
Igor Medović, dipl. ing.

QF PTD - 01

Sperry Marine
We Navigate Solutions.

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**Type Approval Certificate for:** Bridgemaster E, Bridgemaster E, ATA
**Issuing Country:** Russia
**Issuing Agency:** Russian Maritime Register of Shipping
**Date of Issue:** 23 July 2004
**Notes:** Cert. #: 04.01876.011 Expiration: 23 July 2009

Print this Type Approval
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(Recommended for quality printing or for saving on hard drive. Requires Adobe Acrobat Reader, free from www.adobe.com)

РОССИЙСКИЙ МОРСКОЙ РЕГИСТР СУДОХОДСТВА
RUSSIAN MARITIME REGISTER OF SHIPPING

6.8.3

# СЕРТИФИКАТ О ТИПОВОМ ОДОБРЕНИИ
# TYPE APPROVAL CERTIFICATE

Изготовитель
Manufacturer

***Northrop Grumman Sperry Marine B.V.***

Адрес
Address

***118 Burlington Road, New Malden,***
***Surrey, KT3 4NR, United Kingdom***

Изделие*
Product*

***Судовая радиолокационная станция***
***со средством электронной прокладки (СЭП) / средством автосопровождения (САС),***
***тип BridgeMaster E Radar / EPA/ATA Systems***

***Shipborne Radar Equipment***
***with Electronic Plotting Aid (EPA) / Automatic Tracking Aid (ATA),***
***type BridgeMaster E Radar / EPA/ATA Systems***

На основании освидетельствования и проведенных испытаний удостоверяется, что вышеупомянутое изделие(я) удовлетворяет(ют) требованиям Российского Морского Регистра Судоходства.
This is to certify that on the basis of the survey and tests carried out the above mentioned item(s) complies(ly) with the requirements of Russian Maritime Register of Shipping.

Настоящий Сертификат о типовом одобрении действителен до: ***23 июля 2009 г. / July 23, 2009***
This Type Approval Certificate is valid until :

Дата выдачи
Date of issue ***23 июля 2004 г. / July 23, 2004***

Код номенклатуры ***05140100МК***
Code of nomenclature

Российский Морской Регистр Судоходства
Russian Maritime Register of Shipping

***В.И.Евенко***
***V.Evenko***
(ф., и., о., подпись)
(name, signature)

***04.01876.011***

*Дополнительную информацию смотри на обороте.
*For additional information see overleaf.

Технические данные
Technical data

*Эффективный диаметр экрана индикатора: 180 мм; 250 мм; 340 мм.*
*Тип индикатора: электронно-лучевая трубка или жидкокристаллический дисплей.*
*Излучаемая частота (длина волны): 9410 МГц ± 30 МГц (3 см); 3050 МГц ± 10 МГц (10 см).*
*Излучаемая мощность: 10 кВт (3 см); 25 кВт (3 см); 30 кВт (10 см).*
*Версия программного обеспечения: CS.0x.*
*Источник электрического питания: - 220 В переменного тока 50/60 Гц - для излучаемой мощности: 10, 25 и 30 кВт;*
*- 24 В постоянного тока - для излучаемой мощности 10 и 25 кВт.*
*Судовая радиолокационная станция со средством электронной прокладки (СЭП) / средством автосопровождения (САС), тип BridgeMaster E Radar / EPA/ATA Systems, состоит из блоков, перечисленных в Приложении 1 к настоящему Сертификату о типовом одобрении.*
*Тип BridgeMaster E Radar / EPA/ATA Systems отвечает требованиям Резолюций ИМО A.694(17); MSC.64(67) приложение 4; A.820(19) - для высокоскоростных судов.*

*Effective diameter of display: 180 mm, 250 mm, 340 mm.*
*Type of Display: CRT monitor or LCD monitor.*
*Frequency of operation (Frequency Band): 9410 MHz ± 30 MHz (X-Band); 3050 MHz ± 10 MHz (S-Band).*
*Peak power: 10 kW (X-Band); 25 kW (X-Band); 30 kW (X-Band).*
*Main System Software: Version CS.0x.*
*Power source: - 220 V AC 50/60 Hz - for peak power 10, 25 and 30 kW;*
*- 24 V DC - for peak power 10 and 25 kW.*
*Shipborne Radar Equipment with Electronic Plotting Aid (EPA) / Automatic Tracking Aid (ATA), type BridgeMaster E Radar / EPA/ATA Systems, consists of units which are listed in the Annex 1 to this Type Approval Certificate.*
*The type BridgeMaster E Radar / EPA/ATA Systems meets the requirements of the IMO Resolutions: A.694(17); MSC.64(67) Annex 4; A.820(19) - for High-Speed Crafts (HSC).*

Техническая документация и дата ее одобрения Российским Морским Регистром Судоходства
Technical documentation and date of its approval by Russian Maritime Register of Shipping

***Одобрена Главным управлением Российского морского регистра судоходства***
***No. 011-6.5МК4-20900 от 25.06.2004 г.***
***Approved by the Head Office of the Russian Maritime Register of Shipping***
***No. 011-6.5MK4-20900 of 25.06.2004.***

~~Головной/серийный~~* образец испытан под техническим надзором Российского Морского Регистра Судоходства
~~Prototype/serial~~* specimen has been tested under technical supervision of Russian Maritime Register of Shipping

Акт № *04.01875.011* от *20 июля 2004 г. / July 20, 2004*
Report No. of

Область ~~применения/ограничения~~*
Application~~/limitations~~*

*Судовая радиолокационная станция предназначена для обеспечения безопасности судовождения и предотвращения столкновений. / The shipborne Radar equipment is intended to assist in safe navigation and in avoiding collision.*

Условия сертификации изделия
Product certification conditions

*Судовая радиолокационная станция со средством электронной прокладки (СЭП) / средством автосопровождения (САС), тип BridgeMaster E Radar / EPA/ATA Systems, должна поставляться с Сертификатом Российского морского регистра судоходства.*

*Shipborne Radar Equipment with Electronic Plotting Aid (EPA) / Automatic Tracking Aid (ATA), type BridgeMaster E Radar / EPA/ATA Systems, should be delivered with Certificate of the Russian Maritime Register of Shipping.*

* Ненужное зачеркнуть.
Delete as appropriate.

**Приложение 1**
к Сертификату о типовом одобрении № 04.01876.011 от 23.07.2004 г.
**Annex 1**
to Type Approval Certificate No. 04.01876.011 of 23.07.2004

**Судовая радиолокационная станция со средством электронной прокладки (СЭП) / средством автосопровождения (САС), тип BridgeMaster E Radar / EPA/ATA Systems, состоит из следующих блоков:**

**Shipborne Radar Equipment with Electronic Plotting Aid (EPA) / Automatic Tracking Aid (ATA), type BridgeMaster E Radar / EPA/ATA Systems, consists of the following units:**

| | | | |
|---|---|---|---|
| **Monitor Units:** | 180mm (CRT) | 65814** | |
| | 250mm (CRT) | 65821 | |
| | 340mm (CRT) | 65826 | |
| | 180mm (LCD) | 65815** | |
| | 250mm (LCD) | 65817, 65819, 65919 | |
| | 340mm (LCD) | 65823, 65923 | |
| **Processor Units:** | EPA | 65800P** | |
| | ATA | 65800T | |
| | ATA with AIS | 65800Y | |
| | Control Panel | 65903, 65909 | |
| **Turning Units:** | S-Band 30kW | 65830 | with/without Masthead Tx/Rx |
| | X-Band 25kW | 65825 | with Masthead Tx/Rx |
| | X-Band 10kW | 65810 | with Masthead Tx/Rx |
| | X-Band | 65801 | without Masthead Tx/Rx |
| **Transceivers:** | S-Band 30kW | 65831 | Bulkhead |
| | X-Band 25kW | 65825 | Bulkhead |
| | X-Band 10kW | 65810 | Bulkhead |
| **Scanner Controller:** | S-Band | 65837 | |
| **Antennas:** | S-Band | 65612A | 3.7m |
| | | 65609A | 2.7m* |
| | X-Band | 65604A | 1.2m |
| | | 65606A | 1.8m |
| | | 65608A | 2.4m |
| **Ancillary Units:** | Display Compatibility Unit | 65840A | |
| | Transceiver Compatibility Unit | 65841A, 65841D | |
| | 2 Way Interswitch | 65842A | |
| | 6 Way Interswitch | 65846A | |
| | Slave Junction Box | 65849A | |
| | Serial Interface Unit | 65847A | |

**ПРИМЕЧАНИЕ: / NOTE:**
* - предназначено только для высокоскоростных судов / for HSC only
** - не предназначено для высокоскоростных судов / not for HSC

**Российский морской регистр судоходства**
**Russian Maritime Register of Shipping**

**В.И.Евенко**
**V.Evenko**

**Sperry Marine**
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## Type Approval Certificate for: Bridgemaster E

**Issuing Country:** Japan
**Issuing Agency:** Japan Post Telegraph
**Date of Issue:** 29 December 2002
**Notes:** Cert. No. 106

Print this Type Approval
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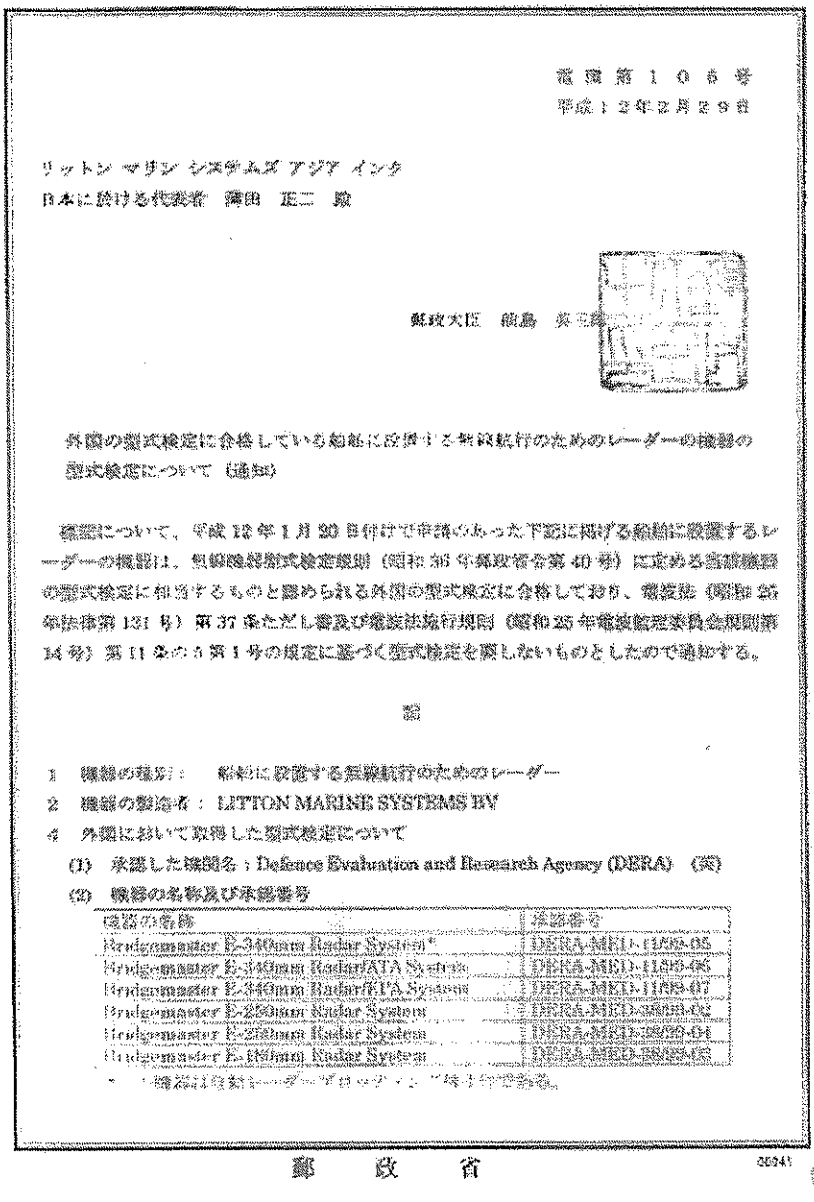
(Recommended for quality printing or for saving on hard drive. Requires Adobe Acrobat Reader, free from www.adobe.com)



電 環 第 1 0 6 号
平成 1 2 年 2 月 2 9 日

リットン マリン システムズ アジア インク
日本に於ける代表者 薄田 正二 殿

郵政大臣 能島 英三郎

外国の型式検定に合格している船舶に設置する無線航行のためのレーダーの機器の型式検定について（通知）

標記について、平成 12 年 1 月 20 日付けで申請のあった下記に掲げる船舶に設置するレーダーの機器は、無線機器型式検定規則（昭和 36 年郵政省令第 40 号）に定める当該機器の型式検定に相当するものと認められる外国の型式検定に合格しており、電波法（昭和 25 年法律第 131 号）第 37 条ただし書及び電波法施行規則（昭和 25 年電波監理委員会規則第 14 号）第 11 条の 5 第 1 号の規定に基づく型式検定を要しないものとしたので通知する。

記

1 機器の種別： 船舶に設置する無線航行のためのレーダー
2 機器の製造者： LITTON MARINE SYSTEMS BV
4 外国において取得した型式検定について
(1) 承認した機関名：Defence Evaluation and Research Agency (DERA) (英)
(2) 機器の名称及び承認番号

| 機器の名称 | 承認番号 |
|---|---|
| Bridgemaster E-340mm Radar System* | DERA-MED-11/99-05 |
| Bridgemaster E-340mm Radar/ATA System | DERA-MED-11/99-06 |
| Bridgemaster E-340mm Radar/EPA System | DERA-MED-11/99-07 |
| Bridgemaster E-250mm Radar System | DERA-MED-38/99-02 |
| Bridgemaster E-250mm Radar System | DERA-MED-38/99-04 |
| Bridgemaster E-180mm Radar System | DERA-MED-38/99-03 |

* 機器は自動レーダープロッティング等を行う。

郵 政 省

00041

Sperry Marine
We Navigate Solutions.

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## Type Approval Certificate for: Bridgemaster E

**Issuing Country:** Russia
**Issuing Agency:** Ministry of Transport of Russian Federation
**Date of Issue:** 08 July 2004
**Notes:** Cert. #: 4/2-1702.1-04C Expiration: 02 July 2009

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РОССИЯ RUSSIA

№ 0001335 *

**МИНИСТЕРСТВО ТРАНСПОРТА РОССИЙСКОЙ ФЕДЕРАЦИИ**
**MINISTRY OF TRANSPORT OF RUSSIAN FEDERATION**

# СВИДЕТЕЛЬСТВО

ОБ ОДОБРЕНИИ ТИПА СУДОВОЙ АППАРАТУРЫ

# CERTIFICATE

OF SHIP'S EQUIPMENT TYPE APPROVAL

| | |
|---|---|
| Свидетельство выдается в соответствии с требованиями Конвенции СОЛАС и Решения Морской Администрации От 22.11.1993 № СМ-38/2251 | The Certificate is given in accordance with the Requirements of the SOLAS Convention and the Order of the Maritime Administration of 22 Nov. 1993 № CM-38/2251 |

**Аппаратура:** Судовая РЛС с функциями САС / СЭП
**Equipment:** Marine Radar with ATA / EPA functions

**Тип:** BridgeMaster E Radar / ATA/EPA System (Перечень оборудования см. в Приложении)
**Type:** BridgeMaster E Radar / ATA/EPA System (List of Units see in Annex)

**Предприятие:** Northrop Grumman Sperry Marine B.V. Великобритания
**Manufacturer:** Northrop Grumman Sperry Marine B.V. United Kingdom

**Акт освидетельствования** No 4/2-1702.1-2004 A от 06.07.2004
**Supervision report** No 4/2-1702.1-2004 A of 06.07.2004

**Выводы** Настоящим удостоверяется, что **АППАРАТУРА** соответствует Технико-эксплуатационным требованиям Морской Администрации, которые не ниже содержащихся в Резолюциях ИМО A.694(17), A.820(19), MSC.64(67) (Приложение 4) и SN/Circ 217.
**Remarks** This is to certify that **the Equipment** complies with the Maritime Administration Performance Standards , which are not inferior to those contained in IMO Res. A.694(17), A.820(19), MSC.64(67) (Annex 4) and SN/Circ 217.

**Действительно до 02.07.2009**
Но может быть изъято в любое время, если это будет признано необходимым Морской Администрацией.

**Valid until 02.July 2009**
But may be withdrawn at any time if this is considered necessary by the Maritime Administration.

№ 4/2 – 1702.1 – 04С Москва

« 08 » июля 2004г. Москва

**МОРСКАЯ АДМИНИСТРАЦИЯ**
**MARITIME ADMINISTRATION**

РОССИЯ МОРФЛОТ

TYPE APPROVAL ROSMORFLOT РОСМОРФЛОТ ОДОБРЕНИЕ ТИПА

Технические данные
Technical data

*Эффективный диаметр экрана индикатора: 250 мм, 340 мм.*
*Тип индикатора: электронно-лучевая трубка или жидкокристаллический дисплей.*
*Излучаемая частота (длина волны): 9410 МГц ± 30 МГц (3 см); 3050 МГц ± 10 МГц (10 см).*
*Излучаемая мощность: 10 кВт (3 см); 25 кВт (3 см); 30 кВт (10 см).*
*Версия программного обеспечения: С 5.0х.*
*Источник электрического питания: - 220 В переменного тока 50/60 Гц - для излучаемой мощности 10, 25 и 30 кВт;*
*- 24 В постоянного тока - для излучаемой мощности 10 и 25 кВт.*
*Судовая радиолокационная станция со средством автоматической радиолокационной прокладки (САРП), тип BridgeMaster E Radar / ARPA Systems, состоит из блоков, перечисленных в Приложении 1 к настоящему Сертификату о типовом одобрении.*
*Тип BridgeMaster E Radar / ARPA Systems отвечает требованиям Резолюций ИМО А.694(17); MSC.64(67) приложение 4; А.823(19); А.820(19) - для высокоскоростных судов.*

*Effective diameter of display: 250 mm, 340 mm.*
*Type of Display: CRT monitor or LCD monitor.*
*Frequency of operation (Frequency Band): 9410 MHz ± 30 MHz (X-Band); 3050 MHz ± 10 MHz (S-Band).*
*Peak power: 10 kW (X-Band); 25 kW (X-Band); 30 kW (S-Band).*
*Main System Software: Version C 5.0x.*
*Power source: - 220 V AC 50/60 Hz - for peak power 10, 25 and 30 kW;*
*- 24 V DC - for peak power 10 and 25 kW.*
*Shipborne Radar Equipment with Automatic Radar Plotting Aids (ARPA), type BridgeMaster E Radar / ARPA Systems, consists of units which are listed in the Annex 1 to this Type Approval Certificate.*
*The type BridgeMaster E Radar / ARPA Systems meets the requirements of the IMO Resolutions: A.694(17); MSC.64(67) Annex 4; A.823(19); A.820(19) - for High-Speed Crafts (HSC).*

Техническая документация и дата ее одобрения Российским Морским Регистром Судоходства
Technical documentation and date of its approval by Russian Maritime Register of Shipping

***Одобрена Главным управлением Российского морского регистра судоходства***
***No. 011-6.5МК4-20900 от 25.06.2004 г.***
***Approved by the Head Office of the Russian Maritime Register of Shipping***
***No. 011-6.5МК4-20900 of 25.06.2004.***

~~Головной~~/серийный* образец испытан под техническим надзором Российского Морского Регистра Судоходства
~~Prototype~~/serial* specimen has been tested under technical supervision of Russian Maritime Register of Shipping

Акт № *04.01875.011* от *20 июля 2004 г. / July 20, 2004*
Report No. of

Область применения/~~ограничения~~*
Application/~~limitations~~*

*Судовая радиолокационная станция с САРП предназначена для обеспечения безопасности судовождения и предотвращения столкновений. / The shipborne Radar/ARPA equipment is intended to assist in safe navigation and in avoiding collision.*

Условия сертификации изделия
Product certification conditions

*Судовая радиолокационная станция со средством автоматической радиолокационной прокладки (САРП), тип BridgeMaster E Radar / ARPA Systems, должна поставляться с Сертификатом Российского морского регистра судоходства.*

*Shipborne Radar Equipment with Automatic Radar Plotting Aids (ARPA), type BridgeMaster E Radar / / ARPA Systems, should be delivered with Certificate of the Russian Maritime Register of Shipping.*

* Ненужное зачеркнуть.
Delete as appropriate.

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## Type Approval Certificate for: Bridgemaster E

**Issuing Country:** Croatia
**Issuing Agency:** Croatian Register of Shipping
**Date of Issue:** 05 June 2004
**Notes:** Certificate No. 03-000585/030318

Print this Type Approval
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(Recommended for quality printing or for saving on hard drive. Requires Adobe Acrobat Reader, free from www.adobe.com)

**HRVATSKI REGISTAR BRODOVA** *Croatian Register of Shipping*

**POTVRDA O TIPNOM ODOBRENJU**
*TYPE APPROVAL CERTIFICATE*

Br./No. 03-000585/030318

Potvrđuje se da je ovaj proizvod, u skladu s Pravilima za tehnički nadzor pomorskih brodova - Dio I. - Opis propisi - Odjeljak 3. - Tipno odobrenje proizvoda, odobren za ugradnju na brodove i postrojenje pod nadzorom Hrvatskog registra brodova.
*This is to certify that this product on the basis of the Rules for technical supervision of sea-going ships - Part 1 - General regulations - Chapter 3 - Type approval of products, is approved for water-based ships and installations under supervision of the Croatian Register of Shipping.*

TIP I OPIS PROIZVODA:
*TYPE AND DESCRIPTION OF PRODUCT*

**BRODSKA RADARSKA OPREMA**
**tip Bridgemaster II - 180mm Radar X- Band Systems**
**vidi poleđinu:**
***MARINE SHIPBORNE RADAR EQUIPMENT***
***type Bridgemaster II - 180mm Radar X-Band Systems***
***see overleaf:***

PROIZVOĐAČ:
*MANUFACTURER:*

***LITTON MARINE SYSTEMS BV***
***118 Burlington Road***
***New Malden, Surrey, KT3 4NR***
***United Kingdom***

PROIZVOD ODGOVARA SLIJEDEĆIM PRAVILIMA/PROPISIMA:
*THE PRODUCT MEETS FOLLOWING RULES/REGULATIONS:*

HRVATSKI REGISTAR BRODOVA: Pravila za tehnički nadzor pomorskih brodova, Dio 16
*CROATIAN REGISTER OF SHIPPING: Rules for the Technical Supervision of Sea-Going Ships, Part 16*
*IMO Resolution MSC 64(67) Annex 4: Recommendation on performance standards for radar equipment*

PODRUČJE PRIMJENE/POSEBNI GRANIČNI UVJETI:
*FIELD OF APPLICATION/SPECIAL OPERATIONAL LIMITS:*

OBOJ SKENSE VRIJEDI DO
*APPROVAL IS VALID UNTIL:*
5 lipnja 2006.
5th June 2006

OBJAVLJENA NAVEDENE NA POLEĐINI
*SUBJECT TO CONDITIONS OVERLEAF*

Mjesto dodane
*Place and date:*
Split, 5. lipnja. 2000.
*Split, 5th June 2000*

M.P.
*Seal*

Ignor Vidović, dipl. ing.

Sperry Marine
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Go Back

**Type Approval Certificate for:** Bridgemaster E
**Issuing Country:** Australia
**Issuing Agency:** Australian Maritime Safety Authority
**Date of Issue:** 06 October 1999
**Notes:** Cert. No:. 4784

Print this Type Approval
View higher-resolution PDF
(Recommended for quality printing or for saving on hard drive. Requires Adobe Acrobat Reader, free from www.adobe.com)

Australian Maritime Safety Authority

## AUSTRALIAN MARITIME SAFETY AUTHORITY

## CERTIFICATE OF APPROVAL

No. 4784

I, the undersigned TREVOR GEORGE ROSE, hereby approve in accordance with:

(i) Regulation V/12(f) of the International Convention for the Safety of Life at Sea 1974 as amended; and/or
(ii) Provision 4.2.1 of Marine Orders, Part 21 (Navigational - Equipment) Issue 5,

for the purposes of conforming with performance standards contained in:

IMO Resolutions:

| | |
|---|---|
| MSC 64(67) Annex 4 | *Performance Standards for Radar Equipment; and* |
| A823(19) | *Marine Automatic Radar Plotting Aids; and* |
| *A694(17)* | *Performance Standards for Electronic Navigational Aids* |

the equipment specified herein.

This approval does not extend to any modification of the specified equipment. Such modification shall, if approved, be the subject of a separate certificate of approval.

**EQUIPMENT:** S and X Band MARINE RADAR/ARPA EQUIPMENT

**TYPE:** Bridgemaster E – 250mm Radar Systems

**MANUFACTURER:** LITTON MARINE SYSTEMS BV
119 Burlington Road
New Malden,
Surrey, KT3 4NR
United Kingdom

**IDENTIFICATION.** Litton, Bridgemaster E – 250mm ARPA/Radar Systems complying with the model indicated in the attached Certificate of Type Approval No. DERA-MEA38/99/02 issued by Defence Evaluation and Research Agency, Marine Type Approvals, Funtington, West Sussex, under the authority of the Maritime and Coastguard Agency of the United Kingdom of Great Britain and Northern Ireland dated 17 June 1999.

**CONDITIONS:**

1. This certificate of approval has been issued on the basis of the aforementioned certificate of inspection and tests.
2. The equipment must be manufactured in accordance with the requirements specified in the aforementioned certificate of inspection and tests, with regard to:
   (i) the drawings, specifications as to design and materials and other data submitted;
   (ii) the prototype submitted for testing; and
   (iii) any quality control procedures specified for the purposes of the approval.
3. The equipment is to be serviced in accordance with the manufacturer's service instructions.
4. The equipment is to remain satisfactory in service.
5. This certificate does not certify that the equipment is Year 2000 compliant and no certificate holder, other person or entity should represent to any other person or entity that this certificate is evidence of Year 2000 compliance.

This approval shall remain valid until 17 June 2004 unless suspended or cancelled before the expiry date.

Australian Maritime Safety Authority

T G Rose
Manager, Ship Inspection Group

File No. 921985

Date 6 October 1999

Sperry Marine

We Navigate Solutions.

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## Type Approval Certificate for: Bridgemaster E

**Issuing Country:** Croatia
**Issuing Agency:** Croatian Register of Shipping
**Date of Issue:** 05 June 2000
**Notes:** Cert. # 03-00587/030318 Expiration: 05 June 2004

Print this Type Approval
View higher-resolution PDF
(Recommended for quality printing or for saving on hard drive. Requires Adobe Acrobat Reader, free from www.adobe.com)

**HRVATSKI REGISTAR BRODOVA** *Croatian Register of Shipping*

# POTVRDA O TIPNOM ODOBRENJU
*TYPE APPROVAL CERTIFICATE*

**Br/No** *03-000587/030318*

Potvrđuje se da je ovaj proizvod, u skladu s Pravilima za tehnički nadzor pomorskih brodova - Dio 1. - Opći propisi - Odjeljak 3. -Tipno odobrenje proizvoda, odobren za ugradnju na brodove i postrojenja pod nadzorom Hrvatskog registra brodova.
*This is to certify that this product on the basis of the Rules for technical supervision of sea-going ships - Part 1 - General requirements - Chapter 3 - Type approval of products, is approved for use on board ships and installations under supervision of the Croatian Register of Shipping.*

**TIP I OPIS PROIZVODA:**
*TYPE AND DESCRIPTION OF PRODUCT:*

**BRODSKA RADARSKA OPREMA**
**tip Bridgemaster E - 250mm Radar Systems**
**vidi poleđinu:**
***MARINE SHIPBORNE RADAR EQUIPMENT***
***type Bridgemaster E - 250mm Radar Systems***
***see overleaf:***

**PROIZVOĐAČ:** / *MANUFACTURER:*
***LITTON MARINE SYSTEMS BV***
***118 Burlington Road***
***New Malden, Surrey, KT3 4NR***
***United Kingdom***

**PROIZVOD UDOVOLJAVA SLIJEDEĆIM PRAVILIMA/PROPISIMA:**
*THE PRODUCT MEETS FOLLOWING RULES/REGULATIONS:*

HRVATSKI REGISTAR BRODOVA: Pravila za tehnički nadzor pomorskih brodova, Dio 16
*CROATIAN REGISTER OF SHIPPING: Rules for the Technical Supervision of Sea-Going Ships, Part 16*
*IMO Resolution MSC 64(67) Annex 4. Recommendation on performance standards for radar equipment*

**PODRUČJE PRIMJENE/POSEBNI GRANIČNI UVJETI:**
*FIELD OF APPLICATION/SPECIAL OPERATIONAL LIMITS:*

**ODOBRENJE VRIJEDI DO:** / *APPROVAL IS VALID UNTIL:* 5.lipnja.2004. / 5th June 2004

**UZ UVJET NAVEDENE NA POLEĐINI** / *SUBJECT TO CONDITIONS OVERLEAF*

Mjesto i datum / *Place and date:* Split, 5. lipnja, 2000. / *Split, 5th June 2000*

M.P. / *Seal*

Ravnatelj / *Director*
Igor Vidović, dipl. ing.

**Odobrenje je valjano ako je ovaj proizvod izveden prema slijedećoj dokumentaciji:**
*The approval is valid if this product is manufactured in accordance with the following documentation.*

- Brodski, Tehnički i Instalacijski priručnik; Priručnik za korištenje; Brošure
- Izvještaji o ispitivanju DERA/SS/WI/R/TT-22/97, 10.1998.; DERA/SS/CI/R/TT-20/98, 06.1999; DERA/SS/CI/R/TT-11/99, 02.2000.; kako odgovara
- Svjedodžba DERA - MED - 38/99-04 od 17.06.1999.

- *Ship's , Technical and Ancillary Units and Radar Systems Manual; User Guide; Brochures*
- *Test reports DERA/SS/WI/R/TT-22/97, Oct.1998.; DERA/SS/CI/R/TT-20/98, June1999; DERA/SS/CI/R/TT-11/99, Feb 2000; as appropriate*
- *Certificate DERA - MED - 38/99-04 dated 17 June1999*

### *Bridgemaster E - 250mm Radar X- Band*

| | |
|---|---|
| *MAIN UNIT Comprising:* | |
| *Transceiver/Turning Unit (10kW)* | *65810 MAR,MAT, MDR or MDT* |
| *Transceiver/Turning Unit (25kW)* | *65825 MAR,MAT, MDR or MDT* |
| *orTransceiver, Bulkhead (10kW)* | *65810 A* |
| *orTransceiver, Bulkhead (25kW)* | *65825 A* |
| *and Turning Unit* | *65801BAR or BAT* |
| *X-Band Antenna (4ft)* | *65604A* |
| *or X-Band Antenna (6ft)* | *65606A* |
| *or X-Band Antenna (8ft)* | *65608 A* |
| ***EPA Systems*** | |
| *Monitor- Radar ARPA Display* | *65821-F,K,R or V* |
| *Processor Radar/EPA, integral Joystick* | *65800 PARJ or PDRJ* |
| *or Processor Radar/EPA,integral Rollerball* | *65800 PARR or PDRR* |
| ***ATA Systems*** | |
| *Monitor - Radar ARPA Display* | *65821-F,K,R or V* |
| *Processor Radar/ATA,integral Joystick* | *65800 TARJ or TDRJ* |
| *or Processor Radar/ATA,integral Rollerball* | *65800 TARR or TDRR* |

*And which may include:*

| | |
|---|---|
| *Interswitch Unit* | *65842 A* |
| *Serial Interface* | *65847 A* |

### *Bridgemaster E - 250mm Radar S- Band*

| | |
|---|---|
| *MAIN UNIT Comprising:* | |
| *Transceiver/Turning Unit (30kW)* | *65830 MAR or T (Revoltage)* |
| *or Turning Unit* | *65830 BAR or T (option code)* |
| *and Bulkhead Transceiver (30 kW)* | *65831A* |
| *Scanner Control Unit* | *65837A6* |
| *S- Band Antenna (12ft)* | *65612A* |
| ***EPA Systems*** | |
| *Monitor- Radar/ARPA Display* | *65821-F,K,R or V* |
| *Processor Radar/EPA,integral Joystick* | *65800 PARJ or PDRJ* |
| *or Processor Radar/EPA,integral Rollerball* | *65800 PARR or PDRR* |
| ***ATA Systems*** | |
| *Monitor- Radar ARPA Display* | *65821-F,K,R or V* |
| *Processor Radar/ATA,integral Joystick* | *65800 TARJ or TDRJ* |
| *or Processor Radar/ATA,integral Rollerball* | *65800 TARR or TDRR* |

*And which may include:*

| | |
|---|---|
| *Interswitch Unit* | *65842* |
| *Serial Interface* | *65847* |

**Ovo odobrenje ne isključuje zahtjev za nadzorom tijekom izradbe proizvoda kod proizvođača, u skladu s gore navedenim Pravilima.**
*This approval does not eliminate the need for inspection during manufacturing of the product into manufacturers shop in compliance with a.m. Rules.*

| Raščlana | Zamjenjuje potvrdu |
|---|---|
| 14.17.00 | - |

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