



GUIDE FOR

BRIDGE DESIGN AND NAVIGATIONAL EQUIPMENT/SYSTEMS

JANUARY 2000 (Updated February 2014 – see next page)

**American Bureau of Shipping
Incorporated by Act of Legislature of
the State of New York 1862**

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American Bureau of Shipping
ABS Plaza
16855 Northchase Drive
Houston, TX 77060 USA**

This Guide represents the latest position of the American Bureau of Shipping in this subject and is being released for trial use. ABS will consider the modification of these requirements as necessary and appropriate.

Updates

February 2014 consolidation includes:

- July 2012 version plus Corrigenda/Editorials

July 2012 consolidation includes:

- November 2010 version plus Notice No. 3

November 2010 consolidation includes:

- July 2008 version plus Notice No. 2

July 2008 consolidation includes:

- June 2002 version plus Notice No. 1

June 2002 consolidation includes:

- January 2000 version plus Corrigenda/Editorials

Corrigenda/Editorial Changes to 2000 Guide for Bridge Design and Navigational Equipment/Systems

The following Corrigenda/Editorial changes have been incorporated into the *Guide for Bridge Design and Navigational Equipment/Systems* and appear in the text in **blue** font.

Page No.	Paragraph	Comments
Part A	General	
5	A13.3	Subsection "A11.3.2" is to read " <u>A13.3.2</u> " and in first line "In addition to A11.2.5, the sea trial..." is to read "In addition to <u>A13.2.5</u> , the sea trial..."
Part C	Requirements for Notation NBLES (Navigational Bridge Layout and Equipment/Systems)	
17	C13.1.1	First line: "In order to ensure the availability of course information..." is to read "In order to ensure the availability of <u>heading</u> information..."
17	C13.1.4	First line: "When the position of the vessel cannot be received, the course of the vessel..." is to read "When the position of the vessel cannot be received, the <u>heading</u> of the vessel..."
21	C23	Third line: "The operating manual..." changed to "The operating/ <u>technical</u> manual..."
21	C23	Fifth line: "The operating manual..." changed to "The operating/ <u>technical</u> manual..."
22	C23.5	First line in second paragraph "The operating manual is to be submitted for review by the American Bureau of Shipping solely to..." is to read "The operating/ <u>technical</u> manual is to be submitted <u>to the Bureau</u> for review solely to..."
22	C23.5	Second sentence in second paragraph "The American Bureau of Shipping is not responsible for the operation of the vessel" is replaced with "The operation of the vessel is not a condition of the assigned class notations".
22	C23.5	Second line in third paragraph "The operating manual..." changed to "The operating/ <u>technical</u> manual..."
23	C27.1	"...operating manual. See C23." is to read "...operating/ <u>technical</u> manual. See C23."
24	Table C1	Item A1 in fourth column of table "Gyro compass course indicator" is to read "Gyro compass <u>heading</u> indicator".
24	Table C1	Item A2 in fourth column of table "Magnetic compass course indicator" is to read "Magnetic compass <u>heading</u> indicator".
24	Table C1	Item A12 in fifth column of table, in first line "...and additional..." is to read "... <u>an</u> additional..."
24	Table C1	Item A12 in fifth column of table, in third line "...changeover..." revised to "... <u>change-over</u> ..."
25	Table C1	Item B1 in fourth column of table "Gyro compass course indicator" is to read "Gyro compass <u>heading</u> indicator".
25	Table C1	Item B7 in fifth column of table, in first line "...and additional..." is to read "... <u>an</u> additional..."

Page No.	Paragraph	Comments
Part C	Requirements for Notation NBLES (Navigational Bridge Layout and Equipment/Systems)	
25	Table C1	Item B7 in fifth column of table, in third line "...changeover..." revised to "... <u>change-over</u> ..."
26	Table C1	Item C1 in fourth column of table "Gyro compass course indicator" is to read "Gyro compass <u>heading</u> indicator".
26	Table C1	Item C2 in fourth column of table "Magnetic compass course indicator" is to read "Magnetic compass <u>heading</u> indicator".
26	Table C1	First column, third row of table: delete "[See Note 1]" after " Docking (Bridge wings) ".
26	Table C1	Item D1 in fourth column of table "Gyro compass course indicator" is to read "Gyro compass <u>heading</u> indicator".
26	Table C1	First three bullet paragraphs in second column, third row "Giving instructions, performing an controlling..." are to read "Giving instructions, performing <u>and</u> controlling..."
26	Table C1	Fourth bullet paragraph in second column, third row "Handling communication with maneuvering g stations" is to read "Handling communication with maneuvering stations".

Part D	Requirements for Notation NIBS (Navigational Integrated Bridge System)	
29	D7	Second line in second paragraph "...to item B19..." is to read "...to item <u>B17</u> ..."
30	D15	First line: "...the operating manual..." changed to "...the operating/ <u>technical</u> manual..."
32	Table D1	Items C1 and D1 in fourth column of table "Equipment required in Part C for the manual steering workstation workstation" is to read "Equipment required in Part C for the manual steering workstation".
32	Table D1	Second bullet paragraph in second column, third row "Giving instructions as to the course an speed" is to read "Giving instructions as to the course <u>and</u> speed".
32	Table D1	Note at the bottom of the table " <i>Attention is drawn to items, items A1, B1, B5, C1 and D1, Table C1, under "Remarks" column.</i> " is to read " <i>Attention is drawn to items A1, B1, B5, C1 and D1 <u>of</u> Table C1 under "Remarks" column.</i> ".

Foreword

This Guide is rewritten and incorporates changes to the previously published *Guide for One Man Bridge Operated (OMBO) Ships* based on IMO decision to discontinue night time one man bridge experiment and shifted emphasis to bridge design and navigational systems.

The requirements for the functionality of the bridge design and layout, and the navigational equipment/systems laid down in this Guide are intended to improve and optimize the work environment within the bridge area and enhance the navigational capabilities, and safety of a vessel. The requirements for vessels fitted with an integrated bridge system for navigational purpose is also included in this Guide.

The title of the Guide has been changed to *Guide for Bridge Design and Navigational Equipment/ Systems*. The new notations “**NBL**”, “**NBLES**” and “**NIBS**” are introduced to replace the previous “**OMBO**” notation and to define the expanded scope of the subject Guide.

Effective 1 January, 2000, this Guide supersedes the 1992 edition of the *Guide for One Man Bridge Operated (OMBO) Ships*.

GUIDE FOR BRIDGE DESIGN AND NAVIGATIONAL EQUIPMENT/SYSTEMS

CONTENTS

Part A – General	1
A1 Application	1
A3 Operational Assumptions	1
A5 Optional Notations	1
A5.1 Notation NBL (Navigational Bridge Layout)	1
A5.2 Notation NBLES (Navigational Bridge Layout and Equipment/systems)	1
A5.3 Notation NIBS (Navigational Integrated Bridge System)	1
A7 Regulations	1
A9 Flag Administration and National Authorities	1
A11 Definitions	2
A13 Plans and Data to be Submitted	4
A13.1 Applicable to NBL, NBLES and NIBS Notations	4
A13.2 Applicable to NBLES and NIBS Notations	4
A13.3 Applicable to NIBS Notation	5
Part B – Requirements for Notation NBL (Navigation Bridge Layout)	6
B1 General	6
B3 Equipment Design and Construction	6
B3.1 General	6
B3.2 Fault Isolation	6
B3.3 Replacement of Components	6
B3.4 Self-support	6
B3.5 Configuration of Devices	6
B3.6 Instruments and Controls	6
B3.7 Earthing	7
B5 Bridge Arrangement and Working Environment	7
B5.1 Fields of Vision	7
B5.2 Control of Vessel	7
B5.3 Routes and Working Clearances	8
B5.4 Clear Height	9
B5.5 Workstations	9
B5.6 Other Considerations	10
B7 Tests and Sea Trials	11

Part C – Requirements for Notation NBLES (Navigational Bridge Layout and Equipment/Systems)	12
C1 General	12
C3 Documentation, Type Approval and Performance Standards of Navigational Equipment	12
C3.1 Documentation	12
C3.2 Type-approved Equipment	12
C3.3 IMO's Performance Standards	12
C5 Manual Mode of Operation	12
C7 Alarm Systems	12
C7.1 Characteristics	12
C7.2 Audible Alarm Circuits	12
C7.3 Acknowledgment	12
C7.4 Disconnection and Resumption of Functions	13
C7.5 Built-in Testing	13
C9 Computerized Equipment	13
C11 Power Supply	13
C11.1 Sources	13
C11.2 Emergency Service	13
C11.3 Loss of Power	13
C13 Navigational Systems	13
C13.1 Heading Information System	13
C13.2 Steering System	14
C13.3 Speed Measuring System	14
C13.4 Depth Measuring System	14
C13.5 Radar System	14
C13.6 Automatic Traffic Surveillance System	15
C13.7 Position Fixing System	15
C13.8 Watch Monitoring and Alarm Transfer System	16
C13.9 Route Planning	16
C13.10 Vessel's Automatic Identification System	16
C15 Propulsion Engine/thruster Controls	17
C17 Automatic Telephone System	17
C19 Nautical Radiocommunication System	17
C21 Workstations – Required Equipment	17
C23 Operating/Technical Manual	17
C25 Tests and Sea Trials	18
C25.1 Applicable to All Relevant Navigational Equipment	18
C25.2 Specific Equipment or System	18
C27 Survey After Construction	18
 TABLE C1 – Navigational Equipment for NBLES Notation	 19

Part D – Requirements for Notation NIBS (Navigational Integrated Bridge System).....	22
D1 General	22
D3 Integrated Bridge System (IBS)	22
D5 Centralized Bridge Workstation	22
D7 Central Alarm Panel.....	22
D9 Route Planning Workstation	22
D11 Conning Information Display.....	23
D13 Navigational System Requirements.....	23
D13.1 Course Information System	23
D13.2 Speed Measuring System.....	23
D13.3 Automatic Track-keeping System	23
D13.4 Electronic Chart Display and Information System (ECDIS).....	23
D15 Operating/Technical Manual.....	23
D17 Workstations – Required Equipment	23
D19 Tests and Sea Trials (<i>December 2003</i>).....	23
D21 Survey After Construction.....	23
 TABLE D1 – Navigational Equipment for NIBS Notation.....	 24
 Appendix A IMO Resolutions Referenced in this Guide	 25

Part A – General

A1 Application

- A1.1** The requirements of this Guide are applicable to vessels possessing valid SOLAS certificates, and having the bridge so designed and equipped as to enhance the safety and efficiency of navigation. When a vessel is designed, built and surveyed in accordance with the requirements of this Guide, and when found satisfactory, a classification notation as specified in **A5** will be granted. Application of the requirements of this Guide is optional.
- A1.2** The composition and qualifications of the crew remains the responsibility of the flag Administrations.
- A1.3** *(December 2003) The design and layout of navigational equipment is to be based on sound ergonomic principles. The ABS Guidance Notes on Ergonomic Design of Navigation Bridges may be used as a supplement.*

A3 Operational Assumptions

The requirements contained in this Guide are based on the following assumptions:

- A3.1** Plans for emergencies and the conditions under which the vessel is intended to operate are clearly defined in an operational manual acceptable to the flag Administration. The manual should clearly state the bridge crew composition required under any particular set of circumstances.
- A3.2** The requirements of the International Conventions on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) and other applicable statutory regulations are complied with.

A5 Optional Notations

A5.1 Notation NBL (Navigational Bridge Layout)

Where requested by the Owner, a vessel having its bridge found to comply with the requirements in Parts A and B of this Guide, as applicable, and which has been constructed and installed under survey by the Surveyor, will be assigned the notation **NBL**.

A5.2 Notation NBLES (Navigational Bridge Layout and Equipment/systems)

Where requested by the Owner, a vessel which is found to comply with the requirements specified in Parts A through C of this Guide and which has been constructed and installed under survey by the Surveyor, will be assigned the notation **NBLES**.

A5.3 Notation NIBS (Navigational Integrated Bridge System)

Where requested by the Owner, a vessel which is fitted with an integrated bridge system (IBS) for navigational purpose, is found to comply with the requirements specified in Parts A through D of this Guide, and which has been constructed and installed under survey by the Surveyor, will be assigned the notation **NIBS**.

A7 Regulations

For the purpose of this Guide, the International Regulations for Preventing Collisions at Sea, and all other relevant Regulations relating to radio and safety of navigation required by Chapters IV and V of 1974 SOLAS, as amended, are to be complied with. Valid statutory certificates issued by the pertinent flag Administration are to be provided onboard the vessel and made available to the Surveyor upon request.

A9 Flag Administration and National Authorities

Vessel owners or other interested parties are urged to consult the flag Administration and relevant National Authorities concerning required manning levels on the bridge and any additional requirements which may be imposed by them.

A11 Definitions *(December 2003)*

The following list provides definitions of the terms used in this Guide:

Acquisition - The selection of those target vessels requiring a tracking procedure and the initiation of their tracking.

Alarm – A visual and audible signal indicating an abnormal condition.

ARPA – Automatic Radar Plotting Aid.

Back-up Navigator – Any individual, generally an officer, who has been designated by the vessel master to be on call if assistance is needed on the navigation bridge.

Bridge – That area from which the navigation and control of the vessel is exercised, including the wheelhouse and bridge wings.

Bridge Wings – Those parts of the bridge on both sides of the vessel's wheelhouse which, in general, extend to the vessel's side.

Bridge Wing Workstation – Workstation from which the vessel can be maneuvered, and operated during unmooring and mooring, lock passage, taking or dropping the pilot, etc.

CPA (Closest Point of Approach) – The shortest target vessel-own vessel calculated distance that will occur in case of no change in course and speed data.

Catwalk – Extension of a deck that is wide enough to allow the passage of a man.

Chart Area – Part of the wheelhouse situated and equipped for adequate performance of voyage planning/plotting activities.

Commanding View – View without obstructions which would interfere with the navigator's ability to perform his immediate task.

Conning Position – Place on the bridge with a commanding view and which is used by navigators, **including pilots**, when **monitoring**, maneuvering and controlling a vessel.

Course – The horizontal direction in which a vessel is steered or intended to be steered, expressed as an angular distance from north. Course applies to direction over the water.

Cross track Alarm – Comparison of the vessel's position with the track (control error).

Display – Means by which a device presents visual information to the navigator, including conventional instrumentation

ECDIS – (Electronic Chart Display and Information System) A system which displays hydrographic information and the vessel's position along a pre-planned route.

Ergonomics – The study and design of working environments and their components, work practices, and work procedures for the benefit of the worker's productivity, health, comfort, and safety. Application of the human factor in the analysis and design of equipment and working environment

FOV (Field of Vision) – Angular size of a scene that can be observed from a position in the vessel's bridge.

GLONASS – Global Orbiting Navigating Satellite Systems.

GMDSS – Global Maritime Distress and Safety System.

Heading – The horizontal direction in which the longitudinal axis of a ship actually points or heads at any instant, expressed in angular units from a referenced direction.

Heading Monitor – Comparison of the heading source in use with a second independent heading sensor.

Helmsman – Person who steers the vessel.