

From: ENG Committee  
To: ARM Committee

ENG4-11.1.13  
14 April 2015

## **LIAISON NOTE**

### **ENG NAVGUIDE Update Progress**

#### **1 INTRODUCTION**

ENG Liaison Note ENG3-11.1.8 outlines the plan and status of NAVGUIDE updates being undertaken by ENG.

#### **2 DISCUSSION**

ENG notes the ARM committee's request to update the IALA NAVGUIDE on the IALA Wiki and to have a standing work item for updating the NAVAGUIDE on an as required basis. To this effect, ENG NAVGUIDE Update Plan in Annex 1 details progress to date and timing for completion of the ENG sections of the NAVGUIDE.

ENG also is seeking input from ARM regarding the NAVGUIDE as outlined in Annex 2.

The ARM Committee is also asked to note that a series of suggested revisions were sent by the WWA to the ENG Committee. A copy of the requested revisions, along with details of any changes actually made, are attached as Annex 3.

#### **3 ACTION REQUESTED**

ARM is requested to:

- 1 Note revised ENG NAVGUIDE Update Plan – Annex 1.
- 2 Note ENG NAVGUIDE Questions Sheet – Annex 2, and provide feedback.
- 3 Comment on proposed modifications to Chapter 3 of the NAVGUIDE as outlined in ENG3-11.1.8.
- 4 Note WWA's suggested revisions and actions taken by the ENG in relation to those requests – Annex 3.



## ENG Navguide Update Plan

Chapter		Working Group	Expected sessions for completion							Comments from ENG3	Comments from ENG4
Chapter 3 - Aids to Navigation			ENG1	ENG2	ENG3	ENG4	ENG5	ENG6	ENG7		
3.1	Operational Requirements	2				x	x			Added to Chapter -Introduction Required	ARM to provide
3.2	Visual and Audible Aids to Navigation Design Theory	1 and 2		x	x					Was section 3.1 - renamed from Visual Aids to Navigation	
3.2.1	Visual Perception	1				x	x			Brief Introduction required	
3.2.1.1	Signal Colours	1			x	x	x			Was section 3.1.1	
3.2.1.2	Meteorological Visibility	1		x	x	x	x			Was section 3.1.3	
3.2.1.3	Atmospheric Transmissivity	1		x	x	x	x			Was section 3.1.4	
3.2.1.4	Atmospheric Refraction	1			x	x	x			Was section 3.1.5	
3.2.1.5	Contrast	1			x	x	x			Was section 3.1.6	
3.2.1.6	Use of Binoculars	1			x	x	x			Was section 3.1.7	
3.2.1.7	Geographical Range	1			x	x	x			Was section 3.1.9	
3.2.2	Daymarks					x	x			Brief Introduction required	
3.2.2.1	Visibility of a Mark	1			x	x	x			Was section 3.1.2	
3.2.2.2	Range of a Visual Mark	1			x	x	x			Was section 3.1.8	
3.2.3	Lights	1				x	x			Brief Introduction required	
3.2.3.1	Photometry of Marine Aids to Navigation Signal Lights	1				x	x	x		Was section 3.2.3	
3.2.3.2	Rhythms/Character	1				x	x	x		Was section 3.2.4	
3.2.3.3	Meteorological Optical Range	1			x	x	x			Was part of section 3.1.9/3.2.4	
3.2.3.4	Visual Range	1			x	x	x			Was part of section 3.1.9/3.2.4	
3.2.3.5	Luminous Range	1			x	x	x			Was part of section 3.1.9/3.2.4	
3.2.3.6	Nominal Range	1			x	x	x			Was part of section 3.1.9/3.2.4	
3.2.4	Miscellaneous	1				x	x			Brief Introduction required	
3.2.4.1	Audible Signals	1			x	x	x			Was section 6.5 through 6.5.3	
3.2.4.2	Illumination of Structures	1				x	x	x		Expand Section - Currently a brief mention in section 3.2.2	
3.2.4.3	Retroreflective materials	1				x	x	x		New Section	
3.3	Visual Aids to Navigation Technology	1 and 2			x	x	x			Was section 3.2	
3.3.1	Daymarks	1				x	x	x		Expand Section - Currently a brief mention in section 3.2.4	
3.3.2	Light Sources	1			x	x	x	x	x	Was section 3.2.2	
3.3.3	Optics	1			x	x	x	x	x	Was section 3.2.2	
3.3.4	Light Control Systems	1				x	x	x		Added to Chapter	
3.4	Maritime Buoyage System (MBS)	2			x	x	x	x		Was part of section 3.2.6	Should this not read MBS and Other AtoNs? ARM to answer
3.4.1	Lateral Marking System	2				x	x	x		Added to Chapter - Introduction Required	There is no info to add here
3.4.2	Cardinal Marking System	2			x	x	x	x		Was part of section 3.2.6	
3.4.3	Isolated Danger Marks	2			x	x	x	x		Was part of section 3.2.6	
3.4.4	Safe Water Marks	2				x	x	x		Added to Chapter - Introduction Required	There is no info to add here
3.4.5	Special Marks	2			x	x	x	x		Was part of section 3.2.6	
3.4.6	Emergency Wreck Marking Buoy	2			x	x	x	x		Was part of section 3.2.6	
3.4.7	Other Marks	2				x	x	x		Added to Chapter - Introduction Required	Completed
3.4.7.1	Leading Lines/Ranges	1		x	x	x	x			Was part of section 3.2.7	
3.4.7.2	Sector Lights	1		x	x	x	x			Was part of section 3.2.7	
3.4.7.3	Fixed Aids to Navigation - Lighthouses and Beacons	2			x	x	x			Was section 3.2.5	Merged with 3.4.7.4
3.4.7.4	Floating Aids to Navigation - Minor and Major	2			x	x	x	x		Was section 3.2.6	Renamed and included Major Floating aids. Reviewed by Buoy Sub-working Group.
3.4.7.5	Auxiliary Marks	2				x	x	x		Added to Chapter - Introduction Required	Renumbered

<b>Chapter 6 - Other Services and Facilities</b>											
6.5	Audible Signals	1			x	x	x			Move to section 3.2.4.1	
6.5.1	Hazard Warning	1			x	x	x			Move to section 3.2.4.1	
6.5.2	Augmentation of Floating Aids to Navigation	1			x	x	x			Move to section 3.2.4.1	
6.5.3	Range	1			x	x	x			Move to section 3.2.4.1	
<b>Chapter 7 - Power Supplies</b>											
7.1	Types	2				x	x	x			
7.2	Electric - Renewable Energy Sources	2				x	x	x			
7.2.1	Solar Power (Photovoltaic cell)	2				x	x	x			
7.2.2	Wind Energy	2				x	x	x			
7.2.3	Wave Energy	2				x	x	x			
7.3	Rechargeable Batteries	2				x	x	x			
7.3.1	Principal types	2				x	x	x			
7.3.2	Primary Cells	2				x	x			Rearrange section on batteries	
7.3.3	Internal Combustion Engine/Generators	2			x	x	x				
7.4	Electrical Loads and Lightning Protection	2			x	x					Reviewed by Power System Sub-working Group.
7.4.1	Electrical Loads	2			x	x					Reviewed by Power System Sub-working Group.
7.4.2	Lightning Protection	2			x	x					Reviewed by Power System Sub-working Group.
7.5	Non-Electric energy sources	2			x	x					Reviewed by Power System Sub-working Group.
<b>Chapter 8 - Provision, Design and Management of Aids to Navigation</b>											
8.10	Environment	2					x	x			
8.10.1	Hazardous Materials	2				x	x				
8.11	Preservation of Historic Aids to Navigation	2			x	x	x				
8.11.1	Lens Size and Terminology	1 and 2				x	x				
8.11.2	Third Party Access to Aids to Navigation Sites	2				x	x				
8.12	Human Resources Challenges	2				x	x				
8.12.1	Source of Skills	2				x	x				
8.12.2	IALA World Wide Academy	2			x	x	x	x	x	Move to Section 1 of the Navguide - discuss with IALA WWA Vice Dean	Moved.

Legend

Modified at ENG4

Completed at ENG4

## ANNEX 2 - ENG NAVGUIDE Questions

### NAVGUIDE and the IALA Dictionary

1. The Dictionary is currently a separate wiki from the NAVGUIDE, should the terms defined in the NAVGUIDE link to the Dictionary?
2. There are numerous definitions found in the NAVGUIDE (for example in Section 1.8). Should definitions appear in the NAVGUIDE? Is there concern that these definitions could become inconsistent with those in the Dictionary?

### General NAVGUIDE Items

3. Should all recommendations/guidelines be referenced in the NAVGUIDE? If not, how would a user find recommendations/guidelines not referenced?
4. How will the move to 7 standards be reflected in the NAVGUIDE?

### Content Requests

5. WWA has highlighted that Figure 4 Vertical Datum is not strictly in compliance with INT1. Can ARM provide an updated Figure 4?
6. If the proposed changes to Chapter 3 from ENG3 (ENG3-11.1.8) are acceptable...
  - a. Should the new Section 3.4 be titled “Maritime Buoyage System” or “Maritime Buoyage System and Other Aids to Navigation”? It is noted that title of Annex D is the former, but the title of the document within Annex D is the latter.
  - b. Can ARM please provide a couple paragraphs be drafted for 3.1 Operational Requirements?
7. Section 7.5 Non-Electric Energy Sources contained a reference to ‘Practical Notes’ for the safe handling of gases, October 1993. The document was not found on the IALA website. Is it still available? The reference has been removed until the document can be found.

### NAVGUIDE Wiki Items

8. Can the auto numbering system in the Wiki Table of Contents be turned off?

## ANNEX 2 - ENG NAVGUIDE Questions

The fourth paragraph on page iv of the 7<sup>th</sup> Edition of the NAVGUIDE (2014) states that is one of the key guidance documents for the IALA World-Wide Academy. As part of a complete update of Level 1 AtoN manager lectures, the NAVGUIDE has been reviewed in detail and the following amendments and minor corrections are proposed.

Page	Para/Subject	Amendment	L1 Module	L1 lecture
12/210	1.6.5/8.12.2 IALA WWA	Move Ch 8 article to Ch 1 and combine with 1.6.5  <b>Combined with 1.6.5 then moved to 1.5</b>	1	1a
13/30	The definition of AtoN is different from that in Ch 3	Use Ch 3 definition on both pages. Note that the Royal Institute of Navigation (UK) uses <i>"Any device or system, external to a vessel, which is provided to help the mariner determine position and course, to warn of dangers or obstructions, or to give advice about the location of a best or preferred route"</i> . <i>[Seamus – please use the definition from the IALA constitution.]</i>  <b>Done.</b>	1	1a
22	Table 2 – "GPS" accuracy	Amend to read GNSS and check accuracy of non-GPS as other sources give accuracies as $\pm 13\text{m}$ ( $2\sigma$ )  <b>Forward to eNAV.</b>	2A	2
24	Figure 4 – vertical datum	Not strictly in accordance with INT1. "Charted NW" etc. Modify diagram  <b>Forward to ARM.</b>	2A	4
46	Metal Halide - disposal	Correct "CConsult " to read "Consult"  <b>Done already.</b>	4A	27
55; 56	Colour measurement	Details on pages 55 and 56 might be better placed after page 51 as part of 3.2.3  <b>Discuss.</b>	4A	28
66	Glare	2 <sup>nd</sup> bullet point after IALA references. Change "illuminance" to read "intensity"	4A	28

		<b>Done.</b>		
68	Figure 13	The example quoted on page 70 refers to Figure 13 and should be moved immediately after Figure 13  <b>Done.</b>	4A	28
79	Position of floating AtoN	Amend DGPS to read DGNSS  <b>Done.</b>	4A	32
91	4.2 e-Nav Communications	Amend DGPS to read DGNSS  <b>This section has already been updated.</b>	4C	43a
95	4.5.1 MSPs	Line 1. Amend to read “Portfolio”  <b>Done.</b>	4C	43a
115	4.9.9	The correct name for MEMS is micro-machined electromechanical systems. Include a short explanation of nuclear magnetic resonance (NMR) principles too. Both are independent inertial technologies  <b>MEMS fixed. NMR item forward to eNAV.</b>	4B	34
119-120	4.12.1	Final paragraph and first on page 120 refers to LRIT and is a copy of that on the top of page 118. Delete duplicate text  <b>Done.</b>	4B	38
136	Introduction to pilotage	Amend GPS/DGPS to GNSS/DGNSS  <b>Done.</b>	2B	12
139	Footnote 30	Amend to read 10 <sup>th</sup> Edition  <b>Already says 2015 edition.</b>	4C	40

IALA working document