

Appendix A

Nautical Reference Library

Hundreds of nautical reference publications and calculators are available as free downloads on the Internet. Below is a sample of important U.S., Canadian, and World government publications, reference texts, and nautical calculators. The approximate hard-copy cost is included for comparison (in parentheses).

American Practical Navigator - Bowditch (\$75)

Complete text and illustrations describing the principles of navigation, including piloting, electronic navigation, celestial navigation, mathematics, safety, oceanography, and meteorology.

Atlas of Pilot Charts Publications 105 to 109 (\$165)

Pilot Charts depict averages in prevailing winds and currents, air and sea temperatures, wave heights, ice limits, visibility, barometric pressure, and weather conditions at different times of the year. The charts are intended to aid the navigator in selecting the fastest and safest routes with regard to expected weather and ocean conditions. The charts are not intended to be used for navigation.

Pub. 105: South Atlantic Ocean (\$30) (not yet available for download pending digital conversion)

Pub. 106: North Atlantic Ocean (including Gulf of Mexico) (\$45)

Pub. 107: South Pacific Ocean (\$30)

Pub. 108: North Pacific Ocean (\$30) (not yet available for download pending digital conversion)

Pub. 109: Indian Ocean (\$30)

Canadian Coast Guard Radio Aids to Navigation (\$18.95)

Presents information on radio communication and radio navigational aid services provided in Canada. Also includes radio facilities of other government agencies that contribute to the safety of ships in Canadian waters.

Chart No. 1 (\$9.95)

A description of the symbols, abbreviations, and terms that appear on nautical charts.

Distances Between Ports Pub. 151 (\$19)

Tabulated distances between an alphabetical listing of departure ports, junction points, and arrival ports worldwide.

Distances Between U.S. Ports (\$59)

Similar to Publication 151 (Distances Between Ports), but produced by NOAA and only covering U.S. port distances.

Federal Meteorological Handbook No. 1 (Free)

Twelve chapters and four appendices covering topics such as observation records, wind, visibility, sky conditions, temperature and dew point, and pressure coding. Includes a glossary and list of abbreviations and acronyms.

International Code of Signals Pub. 102 (\$30)

Descriptions and/or graphic depictions of all signals for visual, sound, and radio communications.

Marine Weather Service Charts (\$18.75)

Lists frequencies, schedules, and locations of stations disseminating National Weather Service information and additional weather information of interest to the mariner. Consists of 16 Marine Service Charts (MSCs):

MSC-1 Eastport, ME to Montauk Point, NY (\$1.25)

MSC-2 Montauk Point, NY to Manasquan, NJ (\$1.25)

MSC-3 Manasquan, NJ to Cape Hatteras, NC (\$1.25)

MSC-4 Cape Hatteras, NC to Savannah, GA (\$1.25)

MSC-5 Savannah, GA to Apalachicola, FL (\$1.25)

MSC-6 Apalachicola, FL to Morgan City, LA (\$1.25)

MSC-7 Morgan City, LA to Brownsville, TX (\$1.25)

MSC-8 Mexican Border to Point Conception, CA (\$1.25)

MSC-9 Point Conception, CA to Point St. George, CA (\$1.25)

MSC-10 Point St. George, CA to Canadian Border (\$1.25)

MSC-11/12 Great Lakes (\$1.25)

MSC-13 Hawaiian Waters (\$1.25)

MSC-14 Puerto Rico and Virgin Islands (\$1.25)

MSC-15 Alaskan Waters (\$1.25)

MSC-16 Guam and the Northern Mariana Islands (\$1.25)

Mariner's Guide for Hurricane Awareness (Free)

Seventy-page document covering topics such as storm categories, observations at sea, hurricane motion and monitoring, and hurricane evasion. Includes a risk analysis checklist and a tracking chart.

MF and HF Channels (Free)

List of middle and high frequency marine radiotelephone channels, including information on single sideband radio-telephone channels.

Nautical Calculators (Free)

A collection of 34 calculators for marine navigation, including celestial navigation, conversions, distance, log and trig, sailings, time zones, and weather data. Each calculator is a self-contained Java script program that can be used offline.

Nautical Chart User's Manual (Out of Print)

Over 300 pages covering the details of marine cartography, with topics such as layout, scales, projections, topography, hydrography, navigation aids, landmarks, and routes.

Appendix B

Useful Web Links

The following 162 websites are mentioned within the book. For convenience, they are grouped and listed by topic, in the approximate order of the chapters. Because the locator for a web page can change over time, an URL listed may not open. If this occurs, try the domain name only, omitting the server path (e.g., www.managing-thewaterway.com instead of www.managingthewaterway.com/icwguide.htm).

Hardware and Accessories

Computer Accessories

C-Map USB Multimedia Reader
www.c-map.com

Belkin Cables
www.belkin.com/cables

Hoodman Corporation Screen Hoods
www.hoodmanusa.com

KeySpan USB High Speed Serial Adapter
www.keyspan.com

Navionics Multi Card Reader
www.navionics.com

Sony Digital Camera GPS Geo-Tagger
www.sony.com

Cellular, SSB and Satellite Internet

3G Cellular Network Information
www.evdoinfo.com

Globalstar
www.globalstar.com

iDirect
www.idirect.net

Inmarsat
www.inmarsat.com

Iridium Satellite
www.iridium.com

Port Networks
<http://portnetworks.com>

Shakespeare CruiseNet
www.shakespeare-marine.com

Syrens Onboard WiFi
www.syrens-at-sea.com

ThurayaMarine
www.thuraya.com

Antennas and Boosters

Digital Antenna
www.digitalantenna.com

WaveRV marine antenna
www.radiolabs.com

Rugged Computers, Cases, and Hoods

ARMOR Mobile Rugged Computers
www.drarmor.com

Dell Latitude Rugged Laptop
www.dell.com

Itronix Rugged Computers
www.itronix.com

Motorola Rugged Notebook
www.motorola.com

OtterBox Waterproof Cases
www.otterbox.com

Panasonic Toughbook
www.panasonic.com

Mini Computers

mp3Car
www.mp3car.com

Logic Supply 12-Volt Computers
www.logicsupply.com

Simplified Innovation
www.simplifiedinnovation.com

Apple Mac mini
www.apple.com/macmini

Tablet Computers

ARMOR Mobile Rugged Computers
www.drarmor.com

Faria Marine Tablets
www.faria-instruments.com/marine.php

Instruments and Sensors

USB GPS Sensors

USGlobalSat USB GPS
www.usglobalsat.com

Garmin USB GPS
www.garmin.com

AIS Stand-Alone Software

ShipPlotter
www.shipplotter.com

Wireless Marine Instruments

Tacktick Wireless Marine Instruments
www.tacktick.com

Electronic Charts

U.S. Chart Catalogs

U.S. Catalog of Charts & Publications
<http://nauticalcharts.noaa.gov/mcd/ccatalogs.htm>

State Chart Catalogs
<http://nauticalcharts.noaa.gov/mcd/ccatalogs.htm#state>

International Chart Catalogs

IHO List of Available ENC Cells
<http://services.ecc.as/ihocc/public/>

International Centre for ENCs Worldwide ENC Catalog
www.ic-enc.org

U.S. Free Chart Downloads

Army Corps of Engineers Inland Waterways Chart Downloads
www.tec.army.mil/echarts

ChartServer Downloads for NOAA RNCs and ENCs
<http://chartmaker.ncd.noaa.gov>

Digital Nautical Chart Downloads
www.nga.mil/portal/site/dnc

Maptech Chart Download Portal
www.freeboatingcharts.com

NOAA and NGA Online Chart Ordering
www.naco.faa.gov

Select International Hydrographic Offices

U.K. Hydrographic Office
www.ukho.gov.uk

Australian Hydrographic Service
www.hydro.gov.au

Canadian Hydrographic Service
www.charts.gc.ca

French Hydrographic Office
www.shom.fr

Land Navigation New Zealand
www.linz.govt.nz/audiences/mariners/index.html

Cartography Vendors

C-Map
www.c-map.com

Explorer Charts of the Bahamas
www.explorercharts.com

Glossary of Terms

This glossary contains over 460 navigation, electronic charting, and general computing terms. All abbreviated or acronym terms are listed in their full form and by their diminutive.

A

Abeam: To the side of a vessel (perpendicular to its heading).

AC: See Alternating Current.

Accuracy: The level of match between a GPS-measured position, time, and/or velocity and the true value.

Active Leg: The segment of a route (leg) currently being traveled.

Admiralty Raster Chart Service (ARCS): Worldwide raster charts supplied by the British Admiralty, Britain's hydrographic office.

Aerial Photo: Photograph taken of the ground where the camera is located on an aircraft, helicopter, or other low-altitude object. (Compare with Satellite Photo.)

Aid to Navigation: See Navigational Aid.

Air Card: A hardware device that connects a computer to a cellular network for Internet access.

AIS: See Automatic Identification System.

Alarm: An indicator or warning.

Alarm Radius: The distance set from a point (such as a waypoint or anchor location), within which an alarm will sound and/or a note will be displayed warning of entry into (in the case of waypoints) or outside of (in the case of an anchor watch) the proximity circle.

Almanac: An annual publication containing tabular information on a topic, often arranged according to the calendar.

Almanac Data: Information transmitted by each satellite that allows a GPS receiver to acquire satellites rapidly upon startup.

Alphanumeric: A computer character that is either a letter or a number.

Alternating Current (AC): An electrical current whose magnitude and direction vary cyclically. The form in which electricity is delivered to businesses and residences in the U.S. as 120 volts. (Compare with Direct Current.)

American Practical Navigator: A classic reference text describing the principles of navigation, including piloting, electronic navigation, celestial navigation, mathematics, safety, oceanography, and meteorology. Named after Nathaniel Bowditch, the author of the first edition in the 1800s. Also called Bowditch.

Analog: An indication that is presented on a continuous scale rather than with binary digits. (Compare with Digital.)

Anchor Watch: An alarm function that warns if the vessel moves outside a preset proximity circle.

Anemometer: An instrument that measures wind speed and direction.

Annotation: A text box linked to a location on an electronic chart. Also called a note.

Application: See Software.

Approaching Waypoint: An alarm function that warns when the vessel is within a preset distance of a waypoint.

ARCS: See Admiralty Raster Chart Service.

ARPA: See Automatic Radar Plotting Aid.

Arrival Circle: A hypothetical radius surrounding a destination point, used to detect an approaching waypoint.

Arrival Radius: The distance from a waypoint location used by the GPS to mark that a waypoint has been reached, shifting navigation to the next leg in an active route.

Artifact: Degradation associated with a process. For example, a computer image may show display artifacts caused by the software code rather than actual data.

ASCII: American Standard Code for Information Interchange. A simple computer format for representing alphanumeric information such as waypoint names, latitude, and longitude.

Atlas: A book of maps or charts. (Compare with Chartkit and Gazetteer.)

Atomic Clock: A precise clock, used by GPS satellites, that works using the decay of the elements cesium or rubidium.

ATON: See Navigational Aid.

Attribute: A characteristic of an object, either qualitative or quantitative. An example is bridge height.

Automatic Identification System (AIS): A system for identifying, locating, and communicating between vessels by integrating an electronic navigation system with a GPS and a VHF transceiver system.

Automatic Radar Plotting Aid (ARPA): A radar that is ARPA-enabled can create tracks using radar contacts—calculating the tracked object's course, speed, and closest point of approach (CPA)—in order to warn of a potential collision.

Autopilot: A device that automatically steers a vessel

B

BA: See British Admiralty.

Bandwidth: In computing, the amount of data throughput available.

Bathymetric: The data of water depth, creating a representation of the topography of the sea bottom.

Bearing (BRG): The direction, in degrees measured from true or magnetic north, from present position to the next waypoint.

Blog: A website (usually maintained by an individual) that serves as an online journal with regular entries of text or images, commonly displayed in reverse chronological order. An abbreviation of weblog or web log.

Bluetooth: A short-range wireless connectivity standard used for computer peripherals.

Bowditch: See American Practical Navigator.

British Admiralty (BA): The hydrographic office of Great Britain.

BSB or BSB3: A digital file format for raster charts co-developed by Maptech and NOAA. Now the standard format for North American raster chart files.

BSB4, BSB5: Proprietary versions of BSB files requiring a user license.

C

Cache: Auxiliary computer memory from which high-speed retrieval is possible. Also used as a verb, meaning to store data in cache memory.

Canadian Coast Guard Radio Aids to Navigation: Government publication with information on radio communication and radio navigational aid services provided in Canada.

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