RESOLUTION OF THE BOARD OF TRUSTEES
OF THE AMERICAN PILOTS' ASSOCIATION
October 19, 2012

GUIDELINES FOR COURSES IN THE OPERATIONAL USE
OF ELECTRONIC CHART DISPLAY AND INFORMATION SYSTEMS (ECDIS)
FOR MARITIME PILOTS

WHEREAS, on July 1, 2012 the phase-in of IMO's mandatory carriage requirement for Electronic Chart Display and Information Systems (ECDIS) began, and over the next five years pilots will be encountering more and more ships equipped with an ECDIS;

WHEREAS, on October 22, 2004, the Board of Trustees of the American Pilots Association (APA) adopted a resolution on Emerging Electronic Navigation Technologies, including ECDIS;

WHEREAS, in that 2004 Resolution, the Trustees of the APA recommended, even in advance of the mandatory carriage requirements, that APA member pilots be familiar with the capabilities and limitations of ECDIS and other electronic navigation technologies in order to make the necessary professional judgments as to the use of information from these technologies;

WHEREAS, the APA's Navigation and Technology Committee (NAVTECH) has examined available training courses in the operational use of ECDIS and has concluded that there should be ECDIS training that is specifically designed for pilots, that recognizes that many pilots already have extensive knowledge and understanding of Electronic Charting Systems gained through their use of Portable Pilot Units, and that addresses not only the operation of an ECDIS but also how to incorporate ECDIS into a pilot's bridge practices;

WHEREAS, in order to assist in making such training available for pilots, on October 17, 2012 NAVTECH adopted a set of guidelines for ECDIS training courses for pilots;

WHEREAS, NAVTECH's objective in developing the guidelines was to give each APA member group a useful reference tool in working with training providers to design courses for the pilots in the group given the particular needs of the pilots and their existing knowledge and familiarity with ECDIS concepts;

WHEREAS, NAVTECH envisions that a pilot group may have other needs and considerations in designing ECDIS training for its pilots, and, in that respect, the guidelines might be supplemented by other explanations and information concerning the desired components of an ECDIS training course or courses for the group's pilots; and

WHEREAS, the Board of Trustees of the APA has reviewed the guidelines developed by NAVTECH and believes that they should be recognized as the official policy of the APA.

NOW THEREFORE, BE IT RESOLVED that the Board of Trustees of the American Pilots'Association hereby adopts, as official findings and policies of the APA, the "Guidelines for Courses in the Operational Use of Electronic Chart Display and Information Systems" dated October 17, 2012 and attached as an Annex hereto.

AMERICAN PILOTS' ASSOCIATION
NAVIGATION TECHNOLOGY COMMITTEE
October 17, 2012

GUIDELINES FOR COURSES IN THE OPERATIONAL USE OF ELECTRONIC
CHART DISPLAY AND INFORMATION SYSTEMS (ECDIS)
FOR MARINE PILOTS

Introduction

The following guidance should be considered in developing courses for pilots in the operational use of Electronic Chart Display and Information Systems (ECDIS).

In addition to the recommended classroom training, demonstrations and practice in operation of ECDIS should be undertaken through the use of simulators. Training exercises should preferably be conducted in real time in order to increase the participant's awareness of the hazards of the improper use of ECDIS. Accelerated timescale should be used only for demonstrations.

ECDIS simulation equipment should be capable of simulating navigation systems equipment and bridge operational controls and should incorporate features to generate soundings and create a real-time operating environment, including navigation control, communications instruments, and other equipment appropriate to the navigation tasks to be carried out.

Pilot training in the use of ECDIS should also address how to incorporate ECDIS into a pilot's bridge practices. This could be done either asa topic or module in a pilot-specific ECDIS course or separately as part of a BRM-P course, a hybrid BRM-P/ECDIS or BRM-P/E-Navigation course, or a general E-Navigation course.

General

Objectives of an ECDIS training course for pilots

By the end of the ECDIS course, the participant should be able to:

1. Understand the navigational functions of ECDIS,

2. Direct the selection of, and assess, relevant information, including understanding the potential errors of displayed data and the common errors of interpretation,

3. Explain why ECDIS should not be relied upon as the sole source of navigational information,

4. Be familiar with the features that are common to all ECDIS systems, and

5. Properly incorporate ECDIS into normal piloting practices (if the ECDIS training course addresses this subject).

Course Content

The course should include instruction/training in the following subject areas:

1. Overview of ECDIS carriage requirements
   a. Implementation schedule
   b. Compliance
   c. Terminology (this includes ECS)
   d. ECDIS performance requirements (i.e., what is required vs. what is actually in use)

2. Electronic Charts
   a. Types: Raster and Vector
      i. Detail differences in data acquisition and display
   b. S-57, S-100 and unofficial charts
      i. Hydrographic sources
   c. Datum issues
      i. Horizontal
         1. WGS-84
         2. Other datum and their effect on the system
      ii. Vertical
   d. S-52 : Symbology and Colors
      i. Chart colors
      ii. Symbol overview
         1. Traditional
         2. Simplified
      iii. Conditional symbology
         1. SCAMIN and temporary or seasonal
   e. Errors and limitations

3. ECDIS Navigational Functions
   a. Modes
      i. Planning
      ii. Monitoring
   b. Displays
      i. Display, Standard, all other information
      ii. True and relative
      iii. North up and head up
   c. Chart scale

        i. Issues related to overscale and SCAMIN
- d. Information query
    - i. Scope of information available
- e. Depth contours
    - i. Safety contours, depth and coloring
- f. Routes
    - i. Display and verification
    - ii. Waypoints
- g. Navigation tools
    - i. Description of required tools (EBL, VRM, track, etc.)
    - ii. "Look ahead" functions
- h. Vessel footprint
- i. Positioning device
    - i. ECDIS tools used for position fix
    - ii. Verification of device in use
- j. Predictors
    - i. Inputs used to device predicted path
- k. Recording

4. Sensor integration
- a. Required vs. available
    - i. GPS
    - ii. Gyro
    - iii. Speed input
    - iv. Radar/ARPA
        1. Overlay issues
    - v. AIS
    - vi. Echo sounder

5. Integrated Navigation Systems (INS)
- a. Track Pilot
- b. Predictors

6. Alarms
- a. Overview of alarms

7. Errors
- a. Displayed data
- b. Interpretation
- c. Over-reliance

Simulation exercises can be done in two parts:

1. Initial familiarization on desktop computer simulators, in which the instructor can walk participants through functionality and features as a class. Each participant should be required to perform these functions at his/her individual station.

2. Full mission simulation allowing the student to integrate use of ECDIS in piloting in a simple exercise. This would require proficiency in understanding available features.