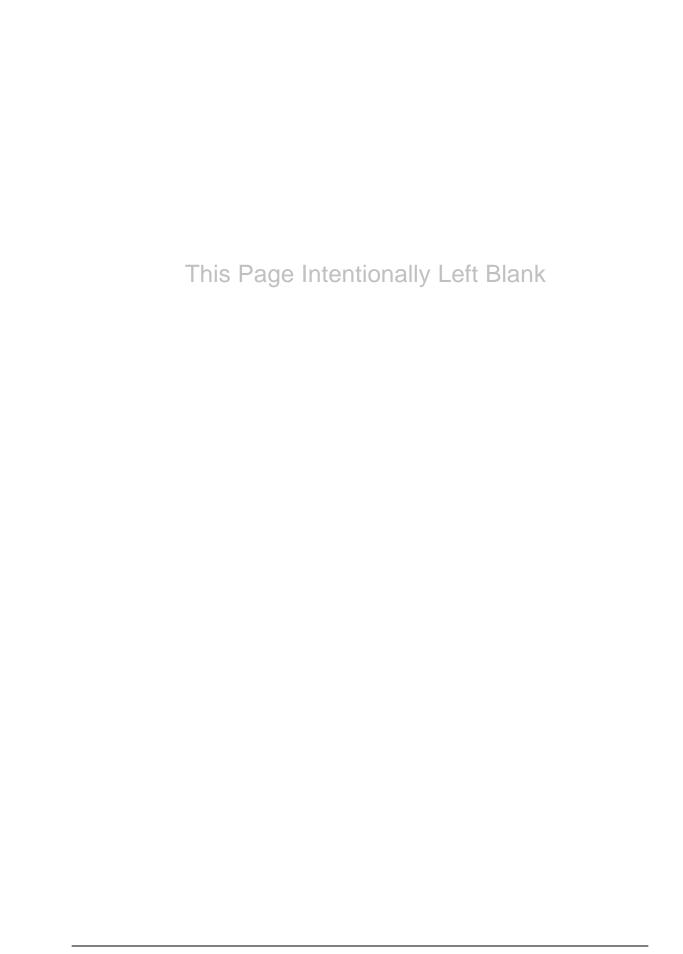
ELECTRONIC FLIGHT BAG (EFB) TRAINING

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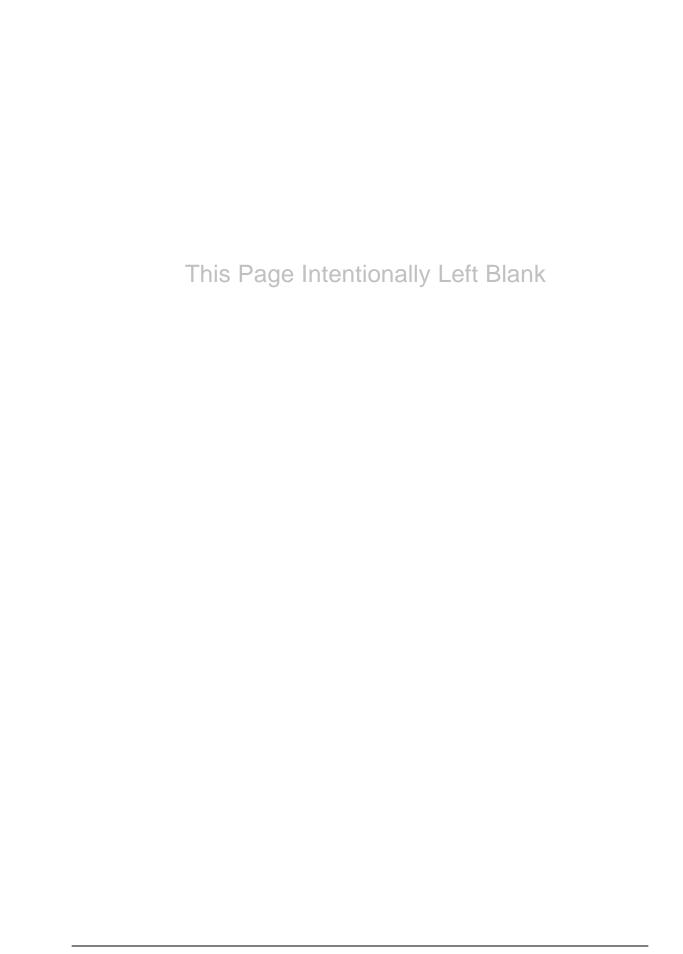
STANDARD OPERATING PROCEDURES

Using the Fujitsu ST4121 Tablet PC with Jeppview3 Software



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Electronic Flight Bag (EFB) Curriculum Segment

CURRICULUM SEGMENT: EFB GROUND AND FLIGHT TRAINING

OBJECTIVE:

Except when under the supervision of an appropriately trained check airman, the flightcrew must complete this approved training program before being authorized to use the EFB equipment. Training is not required of crewmembers who are not authorized to use the equipment, unless it is operated under the supervision of a check airman. Initial qualification with the EFB require that the flight crewmembers demonstrate satisfactory proficiency with the EFB.

The scope of training includes a description of what an EFB is, its capabilities, and the applications for use, including its components and peripherals. This includes theory of operation. Training ensures that flightcrews understand the dependencies associated with the sources and limitations of the information.

TESTING/CHECKING:

Written or Oral exam

Practical in-cockpit Exercises

SUBJECT MODULES

Hardware Written Test

JeppView Software for Printing Charts Written Test Review

on the ground

JeppView FliteDeck Software for Viewing Charts in the aircraft during ground and in flight

Operational Use Using of Paper Charts as Backup if FFB Fails

INTRODUCTION

The FAA has recognized the benefits of using portable electronic computing devices, to perform a variety of functions traditionally accomplished using paper references. EFB systems replace some or all of the hard copy material that pilots typically carry in their flight bags.

The transition from using familiar paper approach plates, to tablet PC's requires standardized operating procedures, in order to maximize the use of PC's in a manner will compliment CRM. This transition from paper approach plates, to tablet PC's is referred to as the Electronic Flight Bag, or EFB Transition.

This training provides instructions and standard operating procedures for crewmembers in the use of tablet PC's and JeppView Software applications. This training also outlines procedures that define how the flightcrew is expected to use each required EFB function during ground operations and under all flight conditions.

JeppView FliteDeck Software runs on Fujitsu Tablet PC's. This combination is referred to as "Type B Software" running on "Class 1 Hardware." These classifications are defined in the FAA Advisory Circular 120-76a.

EFB HARDWARE

EFBs can electronically store and retrieve documents required for flight operations, such as Enroute, Terminal and Approach Charts, the company's Operations Manual, Minimum Equipment Lists Operations Specifications, and control documents. Today there are laptop-style EFBs in use during revenue operations at many airlines both in the United States and in Europe (e.g., Southwest Airlines, JetBlue Airways, FedEx, Finnair, and Lufthansa). These EFBs are often used to calculate flight performance and/or view airline documents such as the Pilot's Operating Handbook and Flight Operations Manual. EFBs may host a range of other functions, such as electronic checklists, surface moving maps, and even cabin video surveillance.

Development of EFBs has accelerated rapidly in the past few years. The business case for deploying EFBs considers many types of benefits. EFBs are attractive because, relative to traditional avionics, they come at a low initial cost, they can be customized, and they are easily upgraded. EFB benefits include reduction in costs associated with data management, distribution and updates, reduction in costs associated with performing manual chart revisions, and the avoidance of medical costs associated with pilot injuries from carrying heavy flight bags filled with paper. Some airlines are currently working directly with vendors to architect EFB solutions for their specific needs.

By using tablet PC's in the cockpit, flight crews have the most current and up-to-date flight and navigation information readily available, eliminating the necessity of carrying large, heavy boxes containing numerous binders, with paper approach plates that must be manually updated every 2 weeks. By not having to manually update large volumes of paper approach charts, every 2 weeks, you are avoiding possible repetitive stress injuries from occurring.

With Tablet PC's, most paper documents are eliminated, and revisions are made electronically, decreasing pilot workload, while improving the accuracy and efficiency of flight operations. When flight crews are away from their home bases during the time that revisions become effective, the crew can update the Tablet PC over the Internet. This guarantees the crew will always have the most current flight data available and eliminate the possibility of misplaced or damaged charts.

JEPPVIEW SOFTWARE

JeppView is a true electronic Airway Manual, containing enroute chart and text data in addition to your terminal charts. With JeppView, you can:

- 1- Display and print Jeppesen terminal charts, enroute charts, NOTAMs, airport information, and text data.
- 2- Build, store, and retrieve routes; and then print charts for those routes in the sequence you would use them.
- 3- Quickly locate commonly-used airports and charts.
- 4- Point and click on a map to create a route graphically.
- 5- Update the terminal charts and the enroute data in your coverage area online or by CD.

FliteDeck SOFTWARE

FliteDeck is the in-flight portion of JeppView that does the following:

- 1- Displays Jeppesen terminal charts in a screen-friendly view.
- 2- Displays a screen-readable Jeppesen enroute chart.
- 3- Provides airport, FSS, ATC frequencies, and other information you might need during flight.

JeppView FliteDeck is designed for use in an aircraft while the aircraft is flying. Proper use of FliteDeck can enhance positional awareness, assist with in-flight replanning, and provide valuable information for normal and emergency operations.

The FliteDeck cockpit interface is simple and easy to use. FliteDeck eliminates the normal menu you would find in most Windows programs. Tests have shown these types of menus are difficult to use in the cockpit during flight.

FliteDeck contains no pop-up windows to block your view of essential information on the screen. You cannot resize the FliteDeck window during use. FliteDeck uses a fixed amount of space on the screen.

DEFINITIONS

Class 1 EFB Hardware. Class 1 EFB hardware may:

- Be used on the ground and during flight except during takeoff and landing.
- Connect to ship's power through a certified power source
- Recharge batteries onboard the aircraft
- Require quick-disconnect from power and/or data sources for egress
- Have read-only data connectivity to other aircraft systems
- Have receive/transmit data connectivity for AAC only

Class 2 EFB Hardware. same as above except:

- Connected to an aircraft mounting device during normal operations
- Required to go through an administrative control process to add, remove, or use in the aircraft

Type B software applications are such that:

- May be hosted on any of the hardware classes
- Require FSDO/PI approval
- Require AEG evaluation
- Do not require an AIR design approval

Examples of "Type B" electronic flight bag (EFB) Applications requiring aircraft evaluation group (AEG) Evaluation in addition to principal operations inspector (POI) approval

- Non-interactive electronic approach charts in a pre-composed format from accepted sources
- Panning, zooming, scrolling, and rotation for approach charts.
- Pre-composed or dynamic interactive electronic aeronautical charts (e.g., en route, area, approach, and airport surface maps) including, but not limited to, centering and page turning but without display of aircraft/own-ship position.

Electronic Flight Bag Ground School Lessons

Fujitsu ST4121 Tablet PC with Jeppview3 Software

OVERVIEW:

These lessons are components of the **EFB Ground School Course**, valid for the **Fujitsu ST4121 Tablet PC's**, running the JeppView 3 Software Application.

Lessons are arranged in a logical learning sequence and use the building-block technique. Upon completion of this ground school and written test, the pilot will possess the knowledge to conduct safe flight operations using the Fujitsu ST4121 Tablet PC, running JeppView 3 Software.

OBJECTIVE:

To develop proficiency in the operation of the Fujitsu ST4121 Tablet PC, running JeppView 3 Software, including Crew Resource Management.

ELEMENTS:

Equipment Orientation
EFB Terminology
Using JeppView Software for Printing Charts on the ground
Using JeppView FliteDeck Software for viewing charts in the air
Written Test

SCHEDULE:

Ground Lessons 3 Hours (estimated)

EQUIPMENT:

Fujitsu ST4121 Tablet PC JeppView 3 Software CD-ROM Drive Office Printer CD-DISC

STUDENT ACTIONS:

Completes all lessons contained in this ground school course.

INSTRUCTOR ACTIONS:

Instructs pilots in the elements of each lesson as indicated in the lesson plans.

COMPLETION STANDARDS:

The student will demonstrate through oral tests, written tests and school records that they are proficient in areas of knowledge and skill for use of the Fujitsu ST4121 Tablet PC, running JeppView 3 Software.

LESSON – 3.0 HOURS (estimated)

Lesson 1 Equipment

Lesson 2 JeppView Application

Lesson 3 FliteDeck Application

Written Test and Review

0.5 Hour estimated

1.5 Hours estimated

0.5 Hour estimated

OBJECTIVES:

To develop a basic level of knowledge and skill in the understanding and the use of the EFB, including terminology, button and knob function, navigation, deviations, and holds. The lesson will conclude upon the successful completion of the written test.

COMPLETION STANDARDS:

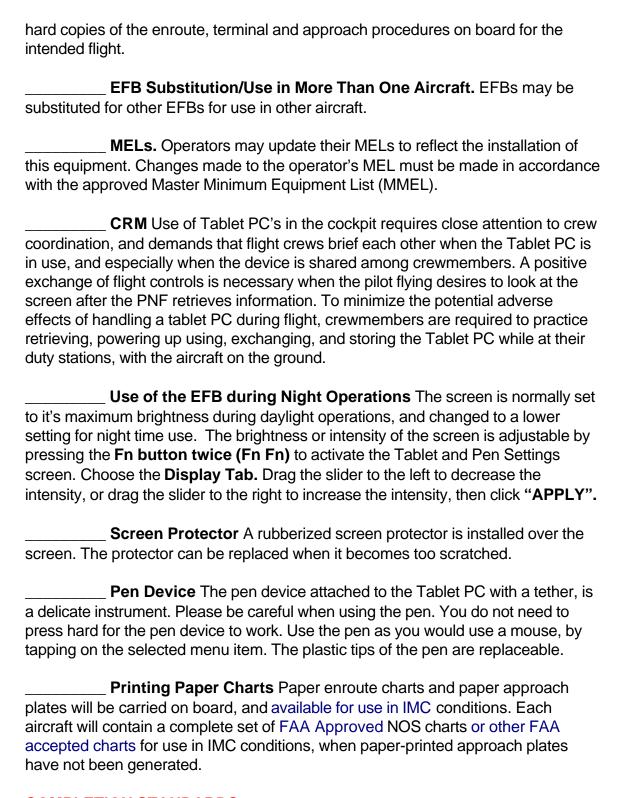
The pilot will demonstrate, through participation in classroom practical exercises, and through oral and written tests that he or she has an advanced level of knowledge and skill in the understanding and the use of the EFB Hardware and Software, during the ground, departure, enroute and arrival phases of flight, including use of the EFB during instrument approaches. In addition, the pilot will complete the EFB written test with a score of at least 70%.

Lesson # 1 EFB Equipment

OBJECTIVE:

To develop an overview of the Fujitsu ST4121 EFB Hardware with a thorough understanding of the equipment, terminology and functionality of all required components.

SCHEDULE:
0.5 Hour
ELEMENTS:
Overview of class Curriculum Requirements; Overview of training materials and resources.
EFB Introduction & Terminology Fujitsu ST4121 hardware
components. Power Requirements. Start up Shut down, Suspend and Hibernate.
Power to the unit can be verified by illumination of the green external
power indicator LED on the upper right side of the Tablet PC. The power button on
he upper right hand corner of the PC turns it on and off. When the unit is powered off, it is shut down completely, and does not use battery energy. The approximate
pattery life is 2-1/2 hours.
satisfy in the 2 1/2 hours.
Printing Charts from the EFB when IFR you must have paper charts n hand when at an IFR departure or destination. Use the EFB and the office printer, to print charts prior to flight.
EFB Stowage and use during flight. The unit shall be stowed in a
manner so that it does not interfere with the flight controls, and must be stowed during takeoff and landing.
anning tartoon and randing.
EFB Specifics Powering up the EFB, on board the aircraft.
1. How to use the input device.
2. How to increase or decrease the screen brightness.
3. Care of the screen and of the pen device.
4. Custody of the EFB before and after the flight.
5. Maintenance of the EFB
EFB Failure When the unit fails, shutdown and restart if time permits,
otherwise revert to paper copies. When time permits, fill out and submit the EFB
Maintenance Record located at the back of this manual. There must be approved



COMPLETION STANDARDS:

The student will demonstrate, through oral questioning, an understanding of the Fujitsu ST4121 EFB equipment, and functionality of all required components.

Lesson # 2 JEPPVIEW APPLICATION

OBJECTIVE:

To develop a practical understanding of how the JeppView application operates, including how to print charts how to determine whether the application requires updating, and how to update the application.

SCHEDULE: 0.5 Hour
ELEMENTS:
Shut-down and Restart PC Start computer after full shut down, then aunch the JeppView Application. (Not already running).
Office Printer Specifics Ink Cartridges, Loading Paper, Paper jams.
Opening Warning each time JeppView is opened, it displays a warning and the effective dates of your data. You are responsible for the accuracy of your navigation information, as well as the currency of your data. Click OK to start.
Electronic Airway Manual terminal charts, enroute chart, text data
RoutePack collect IFR flight information in electronic briefcase, and use it in other Jeppesen programs such as JeppView FliteDeck
JeppView Components and Default Screen Layout. The main JeppView window displays on the right with five view tabs across the top. Each tab displays a different view in the main JeppView window. Click a tab to access the set of information or features associated with that view. JeppView defaults to the Enroute Charts View, which displays a black box to depict your coverage area, unless you have world-wide coverage.
Locate commonly-used airports and charts

Point and click on a map to create a route graphically.
Print Commands All printing options are selected from the print dialog box, which can be opened from the Print menu, the Print toolbar button, the Print command from the right-click menu of any printable item, or the Print button in the Print Preview dialog box. The configuration of the print dialog box varies according to whether a RoutePack or route, terminal chart, enroute chart, or airport is selected for printing.
Page Settings Options When no selection is made, JeppView prints charts scaled to fill an entire page. To print in single-page mode, clear the Two per page check box. Two per page prints two charts on each page, maximizing each chart on its half of the page, in one of four ways:
 Kneeboard prints with standard margins, designed for use with chart clipboards Jeppesen Paper (2 up) prints to Jeppesen 8.5-by-1l-inch paper with 7-hole punches down the center and edge (Jeppesen part # AJV33003) for placement in Jeppesen binders. Booklet prints charts in a sequence that allows you to fold all the printed sheets in the middle and place the charts in an 8.5-by-5 inch binder. Oversize charts, such as certain arrival procedures for large airports are printed separately for easier handling.
Printing Charts with a Printer How the printer works, printer troubleshooting. See directions for printing charts in the appendix of this document.
Print Preview feature displays the order and layout of charts to be printed, or the current view to be printed.
To open the Print Preview dialog box, do the following:
Click the Print Preview button in any print dialog box. Click Print > Print Preview.

3. To print charts from the Print Preview dialog box, click Print.

Printing Selected Terminal Charts Terminal charts can be printed by
selecting them from the Terminal Charts View, RoutePack List, or Airport List.
Printing Airport Information Select the Airport Information check box when printing an Airport, or RoutePack, and use the airport Properties dialog box as follows:
 Right click an airport and choose Properties. Click the Print button. Select the information (tabs) to be printed. Select the Page Settings in which to print. Click OK.
Printing Text JeppView uses a combination of HTML and Adobe PDF files for text data. To print text from the Text View:
 Click the Text View tab. Display the desired text and click the Print button on the Adobe Acrobat toolbar Only the page currently displayed is printed.
Note: While in the Text View, the Print toolbar button on the Standard toolbar is disabled. To print a RoutePack, route, airport, or terminal chart with the Text View displayed, click File > Print or right-click the object in the RoutePack List or Airport List and choose Print.
TEXT AND NOTAMS This covers two additional views: Text View, and the NOTAMS View. You can access both of these views with the tabs at the top of the main JeppView window.

_____ **TEXT View** JeppView now includes all the text information from the front of an airway manual that was previously only available with the paper version. Text data is arranged by region.

_____ Opening Text To open text:

- 1. Click the Text tab for the main window.
- 2. Click the desired region and then the desired category in the menu.
- 3. Once a category is selected, JeppView displays an index.
- 4. Click the underlined links to the right of the topics to open text pages with the desired information.

_____ Electronic Airway Manual Text

Red buttons are active, while gray ones are inactive.

Home displays the main menu of the text pages.

Region displays the Content page for the region currently displayed.

TOC displays the table of contents for the text pages and NOTAMs.

Previous Page and Next Page moves through the text pages. You can also type the page number in the Page box and then press ENTER to jump to that page.

Pending displays text pages that will become active on the date in the header. When pending text pages are displayed, this button changes to Current. **Current** displays the text page that is currently active.

Note: Since text data is stored as individual pages, use the scroll bars and arrow keys to navigate within each text page.

To view enroute chart NOTAMs

- 1. Click the Text View tab.
- 2. Click a region.
- Click Chart NOTAMS.

Note: Electronic text data updates separately from Electronic Chart Data (which contains airport data). Unless both text data and terminal charts are updated to the same version, their NOTAMs may not match.

	Opening NOTAMs To open the NOTAMS View:
	Click the NOTAMS View tab. Select an airport in the Airport List; or an airport, route, or RoutePack in the
3.	RoutePack List. Terminal chart NOTAMs for the selected airport, as well as the airport's country, display in the main view window. If no chart NOTAMs exist for the airport, JeppView displays the message No Chart NOTAMS for airport.
	Printing NOTAMS To print NOTAMs, do any of the following:
1.	Click File > Print > Print NOTAMs when the NOTAMs are displayed in the main window.
2.	Click the Print button on the Standard toolbar when the NOTAMs are displayed in the main window.
-	Keeping Programs up-to-date JeppView service includes a one- ar subscription to Electronic Chart Data (ECD) and Electronic Text Pages (ETP). ou can update this data either by CD or using the Internet.
	DTE: There is a 10-week grace period in which to update your Electronic Chart ata, after which time JeppView and FliteDeck will no longer display charts.
yo pro Yo CF	arning: Since the 10-week grace period allows usage when you are away from ur home base and do not have access to the current Chart Data CD, use of the ogram within the 10-week grace period should only be done with great caution. The must ensure that you are flying with current flight information, and comply with all FR's regarding pre-flight planning and flight information. Use the Internet to edate your chart data when you do not have access to the latest CD.
	Update the charts with the CD and the enroute data in your by CD.
in the	long as your subscription service is current, you will get a new ECD and ETP CD the mail every two weeks. Just follow the installation instructions shown earlier for ese CDs on each computer on which the program is installed. On the desktop imputer, load the CD and follow the prompts on the screen. On the Tablet PC, use Flight Deck or JeppView if running, then connect the CD-ROM Drive via the CB cable, and run SETUP on the root directory of the CD.

	_ Update the charts from the Internet If your subscript	ion service is
current, you	ou can choose instead to update from the Internet. Keep in	mind

there is a lot of data to download, so the desirability of this method depends on your connection speed. Set your CDs aside and do the following:

- 1. Connect to the Internet.
- Run the following update agent: Click Start > Programs > Jeppesen > JeppView3 > JeppView3 Update Client
- 3. Choose to update JeppView.
- 4. Click Next as needed to move through the Update Client wizard.

_____ Using the EFB/PC Maintenance Record Describe the problem or complaint you are having with the unit. Include as much detail as possible about the problem. The computer administrator will enter the corrective action either needed to remedy the problem, or what the operator must do to prevent the problem from reoccurring.

COMPLETION STANDARDS:

The student will demonstrate, through oral questioning, a practical understanding of how the JeppView application operates, including how to print charts how to determine whether the application requires updating, and how to update the application.

Lesson # 3 FliteDeck APPLICATION

OBJECTIVE:

To develop a practical understanding of how the FliteDeck application operates, including how to display screen-readable terminal charts, enroute charts, airport, FSS, ATC frequencies, and other information needed during flight, for normal and emergency operations.

Using Components FliteDeck uses the concept of an active component, highlighted by a colored border. In a page with multiple components, keyboard commands act on the active component. To make a component active, click inside it, until it is highlighted. If a component is active, press the ENTER KEY to perform the same action as clicking on it. Other actions may be available, such as zooming in and out on a chart component. FliteDeck marks an active component by drawing a colored box around it If you use a mouse or pointing device, just click the buttons.
Information Blocks such as those on the Enroute Nav Page, normally toggles between different types of information available in that block. When the text on a button is greyed out, it means that button is inactive. For example, in the Plan page, clearing the Enter Waypoint text box grays out the first four buttons down the right side of the page, since there is no waypoint on which to perform these actions.
The Plan Page The Plan page is where you do the following:

- Plan and replan routes.
- Insert, delete, or move waypoints within routes.
- Set altitudes on routes.

The basic components on the Plan page (clockwise) are:

- The Routes and Waypoints block.
- The Chart.
- Waypoint function buttons that perform actions on a selected waypoint.
- The Enter waypoint text box.

Depending on what you selected in the FliteDeck Setup program, you may also have:

- An on-screen keyboard.
- A Supplemental Track Indicator (STI).

Once you have used FliteDeck, this page opens with the most recently-used or saved route.

The Chart Pane You can build routes using either the Chart or the Enter Waypoint text box. FliteDeck's chart provides aeronautical information to assist in planning and flying your route. On the Plan page, you can click on waypoints on the chart to create and edit routes visually. On the Enroute Nav, Enroute Map, and Emergency pages, the chart provides situational awareness as you fly your planned route.
When you zoom in enough to see meaningful detail, the chart typically provides a window on just one small piece of the coverage area. When you are flying with tracking mode enabled, the area you need normally moves into the window automatically.
You move in and out on the chart by zooming, and horizontally and vertically by panning or scrolling. You use the same procedures to move around enroute and terminal charts. Movement on a terminal chart is called scrolling, because the chart is a fixed size, similar to a document in a word processing program. Movement on an enroute chart is called panning. It differs from scrolling in that the chart is a moreor-less unlimited size.
Moving Around the Chart Click the Zoom buttons to zoom in and out on the chart. You can draw a box to zoom in to a specific area of the chart. To pan the chart, point near the edge of the chart window so that the pointer changes to an arrow. Click to move a short distance in the direction of the arrow, or press and hold to move a longer distance.
You can also pan diagonally by pointing to the corner of the chart window. You could discuss whether the chart moves under the window or whether the window moves over the chart. It doesn't really matter. When you click to pan a certain direction on the chart, you will perceive that you are moving that direction over the chart.
To pan on the chart, point near the edge or corner of the window. When your pointer turns into an arrow, you can then click to pan in the direction of the arrow. Just click on the transparent aircraft symbol to re-enable tracking mode. The range ring shows the distance from the aircraft to the edge of the ring ahead, as well as the time to get to the edge of the ring at your current ground speed.

The Virtual Keyboard The Jeppesen Virtual Keyboard button is at tright side of the Enter Waypoint text box.	the
To use the virtual keyboard:	
1. Click the Virtual Keyboard button.	
2. Click the letters and numbers of the waypoint to be entered.	

3. To close the virtual keyboard, click the X button in the top right corner.

_____ Enter Waypoint Text Box This allows you to create or change a route by typing in waypoints. You can type the name, city, identifier, latitude/longitude, or distance and bearing from a VOR or NDB.

Entering a Waypoint that is in the Database

- 1. Type the waypoint name, identifier, or city name. FliteDeck will not match a partial entry here, and does not accept wildcard characters. FliteDeck displays the most likely match for that waypoint to the right of the Enter Waypoint text box. Tip: Click on the Airport symbol for the matched airport to automatically position the chart to this airport and mark it with a red arrow. Click the text of the airport identifier and name to display information for that airport.
- 2. If the message [No Waypoint] appears, it means there is not a match for the entry in your data coverage.
- 3. If the Select Waypoint button is visible on the right side of the screen, it means FliteDeck has found more than one match for what you typed in. Press ENTER or click this button to see a list of matches. The Routes and Waypoints block in the upper left corner of the screen shows the Select Waypoint list matching what you entered.
- 4. Select the waypoint you want by clicking on the waypoint.
- 5. Perform the desired action on the waypoint (direct to, insert, append...) using the buttons on the right side of the Plan page. If the name you are looking for has more than one word (e.g. "Colorado Springs"), put it in quotation marks.

If the chosen waypoint to the right of the Enter Waypoint text box is not the one you want, press ENTER or click Select Waypoint to choose from a list.

If the chosen waypoint is the one you want, you can use the waypoint buttons to immediately insert or perform other actions with that waypoint.

To abandon entering a waypoint click Cancel (ESC).

Entering a Waypoint by Latitude/Longitude You can enter a waypoint that is not in the Jeppesen database by typing in a latitude and longitude.

_____ **Preflight and Taxi** Before taxiing out, you look at the airport chart to study the runway layout and determine the ATIS, ground, and tower frequencies. Tap the Split/Unsplit view to see a large version of briefing strip.

______ Viewing the Airport (Runway) Chart Select the Terminal page. Click Select Airport. Click Dep Arpt. The airport chart containing the airport diagram displays by default. To view additional airport chart pages or to display the airport chart after viewing another chart, you must click Runway. Click SplitView/SingleView to switch between the close-up plan view with the separate information pane and a single view of the chart. You will look at the information pane first and then the plan view.

_____ The Information Pane this pane enables you to:

Enter degrees, minutes, and decimal minutes.

- 1. Get your frequencies from the chart header in the information pane.
- 2. Click inside the information pane to activate this portion of the chart. Active panes are highlighted by a colored border.
- 3. Click inside the information pane to switch to Additional Runway Information. click the Zoom In (+) button one or more times to zoom in closer on this information.
- 4. Click in the information pane again to switch to the Obstacle Departure Procedures and click one more time to switch back to the Chart Header.
- 5. Press the ENTER key to switch between the Chart Header, Additional Runway Information, and the Obstacle Departure Procedures.

The Plan View The plan view shows the geo-referenced portion of the
chart. This is the part that is drawn to scale and on which FliteDeck can plot the aircraft position.
Before Takeoff As you run through your before-takeoff checklist, you need to set your navigation and communication radios. Copy all frequencies and clearances on paper first, then set the data on the tablet PC. Always use a piece of paper for copying flight information received on the radio, or from the FliteDeck Application.
 Obtaining VOR Frequencies You can get VOR frequencies and courses from the Plan Page or from the Enroute Nav Page. On the Plan Page: Click the Plan tab or button. Click Clear Waypoint (CLR) to clear the Enter Waypoint text box (if appropriate In the Route Waypoints list, click XXX. (where xxx is the waypoint). The status bar provides information about XXX VOR.
The Enroute Nav Page Some chart themes, such as the Low Altitude Enroute theme, show VOR frequencies in boxes next to the symbol. If you don't see the frequency, just click the symbol for the facility, and you will see its frequency on the status bar. The Enroute Nav Page also show's the VOR's bearing and distance from your present position.
On certain chart themes when the VOR is visible on the chart, you can get the

course and frequency directly from the chart.

You can also use the Flight Information Blocks on the Enroute Nav Page.

- Block 1 contains information about the active waypoint and other waypoints that follow it.
- Block 3 contains information on nearest facilities, including VORs.
- Block 5 contains information about your entire route.

_____ Tower and Departure Frequencies There are a couple of places to find the tower and departure frequencies. You could find them on the Airport (Runway) diagram you displayed earlier. Or you can look in the Airport Information page. Here's how:

- 1. Click the Terminal button or tab to go to the Terminal page.
- 2. Make sure XXX airport is selected.
- 3. Click Airport Info.

______ Viewing Approach Plates do the following:

- 1. Click Approach Charts.
- 2. Select the approach you want from the Select Approach list:

FliteDeck displays the approach chart in the terminal window, and shows the aircraft position on the Plan view. You can split the chart as you did the Airport (Runway) Diagram into a Plan view and an Information pane, on which you can cycle between the Chart Header (Briefing Strip), Profile, and Minimums sections.

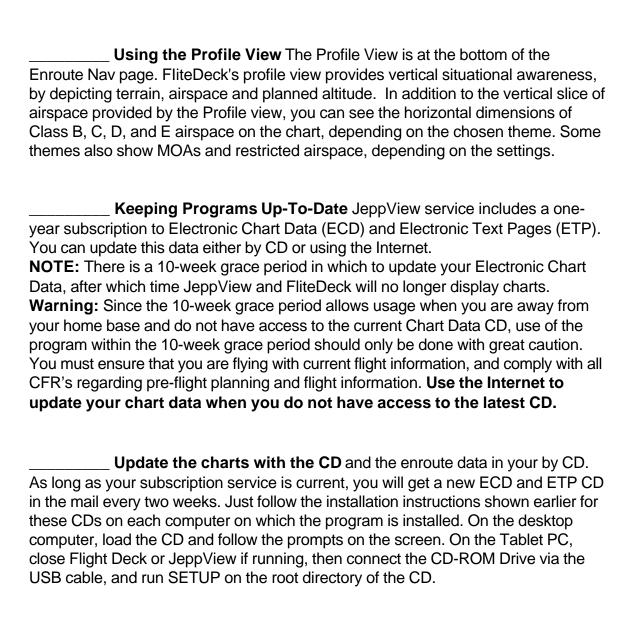
The Approach Chart with the chart header (Briefing Strip) is in the information pane and aircraft position is shown in the Plan View. If you select another type of terminal chart and then select Approaches again, FliteDeck returns to the same previously viewed approach plate, so you don't have to select it again from a list. If you need to select a different approach chart, click the Approaches button a second time bring up the Select Approach list.

_____ **Terminal Chart Overlay** This feature allows you to see the selected terminal chart overlaid on the Enroute Nav or Enroute Map pages.

- 1. Click the Enroute Nav button or tab to go to the Enroute Nav page.
- 2. Locate the Terminal Chart Overlay button. In the standard notebook computer style, the Terminal Chart Overlay button is on the status bar at the bottom of the screen.
- 3. Click the Terminal Chart Overlay button several times to switch between full view, plan view, or chart display off.

Flight Service Station and Nearest Frequencies

- 1. Make sure you are on the Enroute Nav page.
- 2. Click in Block 3 until it shows the nearest FSS remote communication outlet (RCO).
- 3. Click Flight Information Block 3 to cycle through various Nearest things.
 - (a) Nearest airport bearing and distance
 - (b) Nearest airport frequencies
 - (c) Nearest VOR
 - (d) Nearest Center
 - (e) Nearest FSS



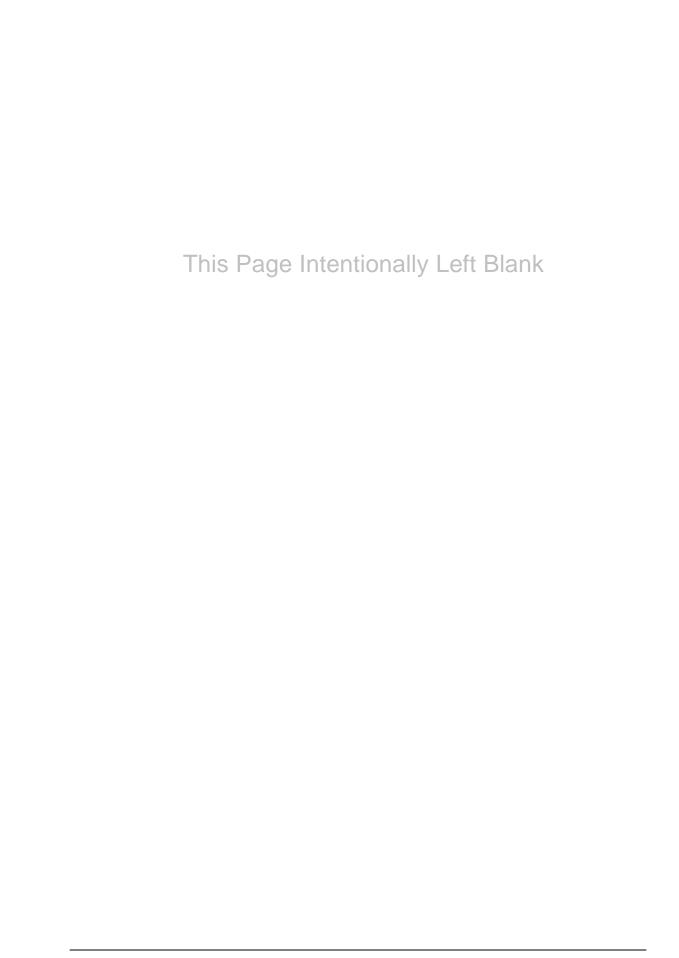
_____ **Update the charts from the Internet** If your subscription service is current, you can choose instead to update from the Internet. Keep in mind there is a lot of data to download, so the desirability of this method depends on your connection speed. Set your CDs aside and do the following:

- 1. Connect to the Internet.
- 2. Run the following update agent: Click Start > Programs > Jeppesen > JeppView FliteDeck3 > FliteDeck3 Update Client
- 3. Choose to update FliteDeck.
- 4. Click Next as needed to move through the Update Client wizard.

_____ Using the EFB/PC Maintenance Record Describe the problem or complaint you are having with the unit. Include as much detail as possible about the problem. The computer administrator will enter the corrective action either needed to remedy the problem, or what the operator must do to prevent the problem from reoccurring.

COMPLETION STANDARDS:

The student will demonstrate, through oral questioning, a practical understanding of how the FliteDeck application operates, including how to display screen-readable terminal charts, enroute charts, airport, FSS, ATC frequencies, and other information needed during flight, for normal and emergency operations.



EFB OPERATIONAL OUTLINE

SUBJECT MODULES

Stowage	Stow the unit with the cover closed. vertically, between the seat and the center console, with the handle facing forward. This is the best way to keep the unit out of the way of your feet and legs, while getting into and out of the crew station. The unit should remain in the aircraft, connected to the aircraft power supply, stowed after each flight.
Power Source	When on board the aircraft, the unit is powered through a 28 VDC to 16VDC aircraft power adapter that connects to the 28VDC outlet installed in the aircraft. When the unit is removed from the aircraft, it is powered through a 120VAC adapter that plugs into a standard 120VAC receptacle. Power to the unit is indicated by the lighted battery symbol on the power panel.
Database	The database expires every 2 weeks. When the unit is turned on, the database expiration message is shown. Data will remain current for 10 days after the expiration date shown. Database updates are available on the Internet when the EFB unity is connected either through an 80211b wireless connection, or through a CAT5 wire.
EFB Failure	The EFB unit runs Microsoft Windows XP Tablet PC Version. The best way to try and correct a malfunctioning unit is to turn it off completely, by powering the unit down, then turning it back on. If this does not solve the problem, fill out and submit an EFB/PC Maintenance record to the Director of Operations. At no time should EFB failure distract the flight crew from their primary responsibility to operate safely. In all cases of EFB Failure, the unit should be written up with the specific problem indicated on the maintenance form.

Preflight

During preflight, you can use the desktop PC located in the pilot's office to print charts for your departure, destination, and alternate airports. Hard copy current charts will be available on board whether or not an EFB is used. When on board the aircraft, the EFB unit should always be connected to the ship's power, and when powered up, always check the power indicator on the power panel of the unit. If there is no power to the unit, one of the 2 battery symbols will be dark when the unit is powered-up. After powering up the unit, the operating system will load, and Flight Deck will launch. Check to see when the database will expire. Data is valid for 10 days after the expiration date shown on the splash screen during startup. After acknowledging the expiration date, your route can be programmed on the virtual keyboard from the PLAN page. Individual waypoints can be loaded manually, or your individual route pack can be copied from the desktop machine in the pilot's office over to the EFB via a flash drive, or through a wireless network. Once the route is loaded, all your charts and airport diagrams will be available through the menu.

If the EFB unit fails, it should be written up, and either substituted for another unit at the base of operations, or turned in for repair.

Departure

After the airport and taxi information is reviewed by the crew, the cover to the unit should be closed, and the unit placed on the floor between the seat and the center console until the aircraft is stabilized in the climb, or enroute phase of flight.

If the EFB unit fails during this phase of flight, it should be shut down and re-started. If the unit is still in a failure mode, it should be stowed.

Enroute

During the enroute phase of flight, the EFB can be used to locate and identify fixes and routes on the enroute charts, SID/STARs and Airport diagrams.

If the EFB unit fails during this phase of flight, it should be shut down and re-started. If the unit is still in a failure mode, it should be stowed.

Approach

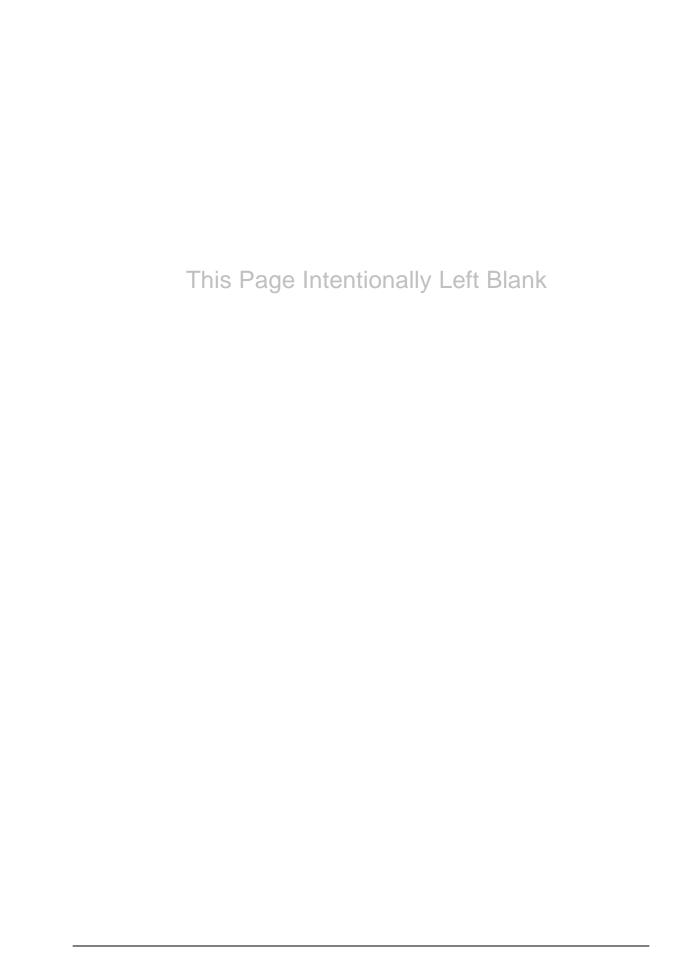
During the approach phase of flight, the EFB should be referred to prior to beginning the final approach for landing. *Terminal and Approach data from the EFB is to be copied on paper and used during an instrument approach briefing in IMC. The copied briefing shall contain at least: COMM Frequencies, NAV Frequencies, Inbound Course, DH or MDA.* The EFB shall be stowed no later than the beginning of the final approach segment.

If the EFB unit fails during this phase of flight, it should be stowed until the completion of the flight.

Postflight

After the flight, the EFB can be retrieved to locate taxi routes, runway incursion hotspots, and airport information. When in doubt, request progressive taxi instructions from ground control. Special vigilance must be employed when operating at uncontrolled fields. One crewmember must always be "eyes outside" during taxi operations. Positive transfer of controls is a must while taxiing and using any form of chart electronic, or paper.

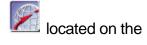
If the EFB unit fails during this phase of flight, it should be stowed until the completion of the taxi procedures.



Directions For Printing Charts

If JeppView is not already running

1. Using the Mouse, Double Click in the **JeppView** Icon desktop.



If JeppView is already running

Click Tools, RoutePack Wizard from the menu

- Enter the Departure, En-Route Fixes, and Destination airport into the fields of the RoutePack Wizard. (ex. Departure: KELP Route: RUTER TCS Destination: KABQ) then click NEXT.
- **3.** Enter the alternate airport, if required, or click **NEXT**.

Enter the name of the RoutePack, such as CYO226 then click **FINISH.** The name of the RoutePack will appear in the RoutePack List.



<u>File Edit View Chart Tools Help</u>

4. Double-click on the name of the chart in the RoutePack List list that you DO NOT

want to print, such as the ACOLI TWO ARRIVAL. The chart appears on the right side of the screen. Use the Zoom-In button on the menu to zoom-in, if necessary.



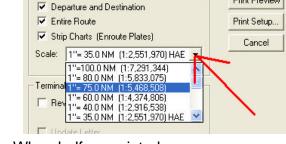
6. Scroll back up to the name of your route, and click on it to highlight the route. **Right-Click** on the Route and Choose **Print.**

Printing 226.

Vector Charts

Theme: High Altitude Enroute

7. The Printing Dialogue box will appear. Choose the Theme High Altitude Enroute, and select the desired scale for strip charts.



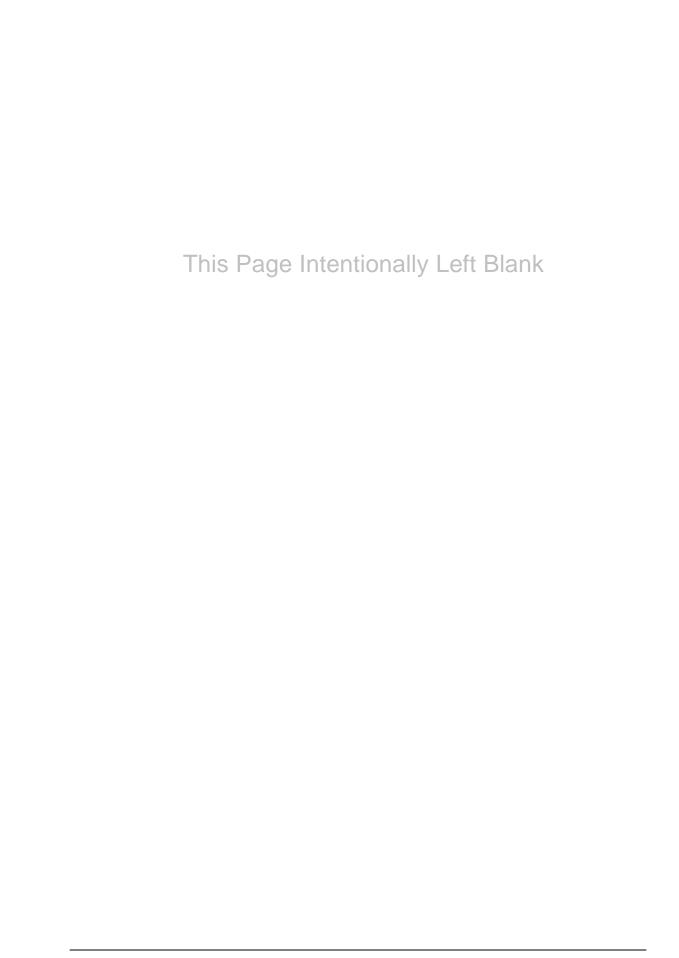
Print

Print Preview

- **8.** Click **Print Preview** to see what the printed charts will look like. Note the number of pages on the lower left side. What is the printed charts will look like.
 - number of pages on the lower left side. When half are printed, you can remove the pages, flip them over, and re-insert them into the printer.
- **9.** Pages will print 2 per page, Kneeboard style. When printing is completed, examine the pages to see whether any pages have printed across the entire page, such as fold-out STAR's. If so, remove the full-span page from the pile, before cutting them in half.

EFB Written Test Answer Sheet

Name		Date	
Inetru	ctor	Grade	
msuu	Instructor Grade		
SCHE	DULE	5 Hour	
Instru	ictions	: Mark the most correct answer in the box.	
1.			
2.			
3.			
4.			
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7.			
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11.			
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22.			
23.			
24.			
25.			



EFB Written Test Questions

- 1. When is EFB training not required?
 - A) Whenever the crewmember receives self-study.
 - B) When it is operated under the supervision of a check airman.
 - C) When it is used only during ground operations
- 2. When is JeppView Software used?
 - A) For printing charts on the ground.
 - B) For printing charts from the Internet.
 - C) For viewing approach plates only.
- 3. When the EFB is powered down using the Power Button
 - A) The unit consumes very little power, and can remain in the Standby mode for long periods of time.
 - B) The unit draws only a small amount of power.
 - C) The unit is shut off and consumes no power whatsoever.
- 4. The EFB Unit shall be powered up in flight using
 - A) The aircraft's DC Electrical system through a converter.
 - B) The aircraft's AC Electrical system through a converter.
 - C) The aircraft's Standby Power system through a power adapter.
- 5. The EFB is stowed in such a manner as to
 - A) not be visible during ramp inspections
 - B) not interfere with flight controls
 - C) not consume any power during flight
- 6. If the EFB unit fails during flight
 - A) the unit should be re-started using the Start Menu
 - B) the unit should be powered down using hibernation
 - C) the unit failure should be written up
- 7. When the EFB unit fails
 - A) request assistance from ATC
 - B) Remain VFR and land as soon as possible
 - C) use paper copies

8. If the units fails in IMC

- A) You may continue in IMC conditions to your clearance limit
- B) Utilize paper copies or a written transcript of the of the required navigation and approach procedure.
- C) Do not continue in IMC conditions, unless paper copies of the approach procedures are available.

9. EFBs may

- A) be substituted for other EFBs for use in other aircraft.
- B) not be substituted for other EFBs for use in other aircraft.
- C) be substituted for other EFBs for use in other aircraft, provided the other aircraft are operated only on the ground.
- 10. To minimize the potential adverse effects of handling an EFB during flight,
 - A) crewmembers are not required to practice retrieving, powering up using, exchanging, and storing the Tablet PC while at their duty stations, with the aircraft on the ground.
 - B) crewmembers are encouraged to practice retrieving, powering up using, exchanging, and storing the Tablet PC while at their duty stations, with the aircraft on the ground.
 - C) crewmembers are required to practice retrieving, powering up using, exchanging, and storing the Tablet PC while at their duty stations, with the aircraft on the ground.

11. You are

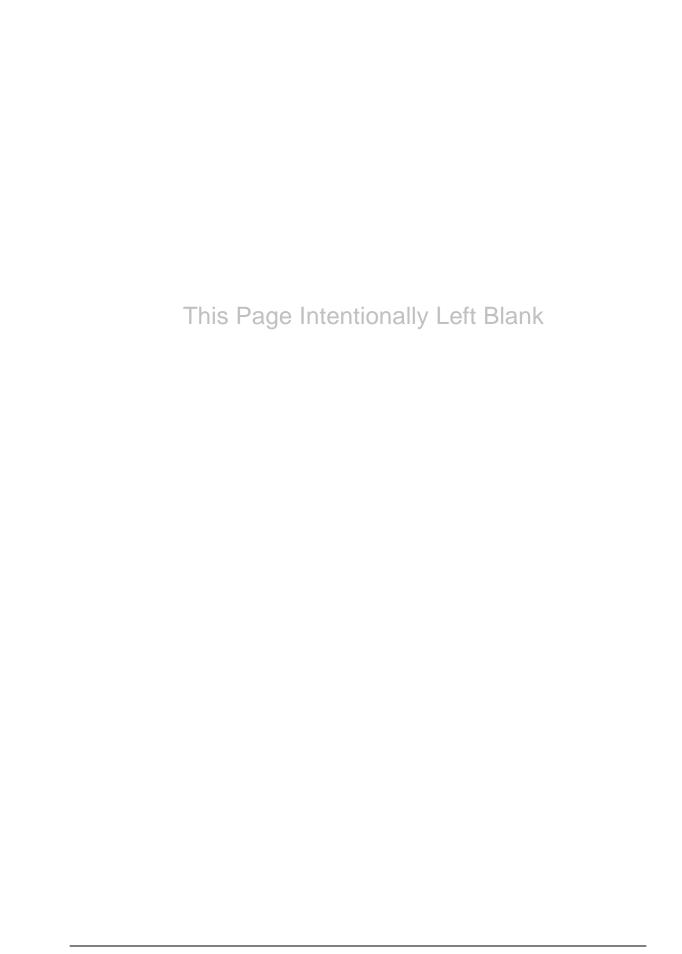
- A) responsible for the accuracy of your navigation information, as well as the currency of your data.
- B) responsible for the accuracy of your navigation information, as well as the currency of your obsolete data.
- C) responsible only for the accuracy of your navigation information, the currency of your data is automatically updated.
- 12. All JeppView printing options are selected from the print dialog box
 - A) which can only be opened from the Show Print Diagram menu control panel box icon picture
 - B) which can be opened from the Print menu
 - C) which cannot be opened from the Print menu
- 13. When no selection is made,
 - A) JeppView prints charts scaled to fill an entire page.
 - B) JeppView prints charts scaled to fill an entire ream of paper.
 - C) JeppView prints charts scaled to fill an entire book on one sheet of paper.

- 14. Two per page prints two charts on each page,
 - A) maximizing one chart on one page
 - B) maximizing half of each page on its other side of the chart
 - C) maximizing each chart on its half of the page
- 15. Text View, and the NOTAMS View
 - A) can be accessed with the tabs at the top of the main JeppView window.
 - B) cannot be accessed with the tabs at the top of the main JeppView window.
 - C) can be viewed, but not printed.
- 16. JeppView service includes a one-year subscription to Electronic Chart Data (ECD) and Electronic Text Pages (ETP).
 - A) You can update this data only by CD.
 - B) You can update this data either by CD or using the Internet.
 - C) You cannot update this data either by CD or using the Internet.
- 17. When the text on a FliteDeck button is grayed out, it means
 - A) that button is useable after upgrading the subscription.
 - B) that button is active.
 - C) that button is inactive.
- 18. Movement on a terminal chart is called scrolling, because the chart is a fixed size, movement on an enroute chart is called
 - A) panning. It differs from scrolling in that the chart is a more-or-less unlimited size.
 - B) planning. It differs from scrolling in that the chart is a small size.
 - C) pannini. It differs from scrolling in that the chart is a more-or-less edible size.
- 19. To pan on the chart, point near the edge or corner of the window.
 - A) When your pointer turns into a duck, you can then shut off and re-start the application.
 - B) When your pointer turns into an arrow, you can then double click to pan in the direction opposite of the arrow.
 - C) When your pointer turns into an arrow, you can then click to pan in the direction of the arrow.
- 20. To use the virtual keyboard:
 - A) Click the Virtual Keyboard button, then click the letters and numbers of the waypoint to be entered.
 - B) Click the numbers of the waypoint to be entered.
 - C) Click the waypoint to be entered.

- 21. Click SplitView/SingleView to
 - A) switch between the close-up plan view with the separate information pane and a single view of the chart.
 - B) switch between the plan view and a single view of the chart.
 - C) switch between the far-out plan view with a separate tablet PC connected to the Internet.
- 22. The Information Pane enables you to:
 - A) Get your frequencies from the chart header in the information pane.
 - B) Click inside the information pane to switch to Additional Runway Information. click the Zoom In (+) button one or more times to zoom in closer on this information.
 - C) Both A & B are correct.
- 23. Before Takeoff
 - A) Copy all frequencies and clearances on paper first, then set the data on the tablet PC.
 - B) Always use a piece of paper for copying flight information received on the radio, or from the FliteDeck Application.
 - C) Both A & B are correct.
- 24. You can get VOR frequencies and courses
 - A) from the Plan Page or from the Enroute Nav Page.
 - B) only from the Plan Page.
 - C) only from the Enroute Nav Page.
- 25. The Approach Chart with the chart header (Briefing Strip) is in the information pane and aircraft position is shown in the Plan View. If you select another type of terminal chart and then select Approaches again,
 - A) FliteDeck reboots the computer.
 - B) FliteDeck returns to the same previously viewed enroute chart, in order to confuse you.
 - C) FliteDeck returns to the same previously viewed approach plate, so you don't have to select it again from a list.

Answer Key -- EFB

- 1. B
- 2. A
- 3. C
- 4. A
- 5. B
- 6. C
- 7. C
- 8. B
- 9. A
- 10. C
- 11. A
- 12. B
- 13. A
- 14. C
- 15. A
- 16. B
- 17. C
- 18. A
- 19. C
- 20. A
- 21. A
- 22. C
- 23. C
- 24. A
- 25. C



EFB/PC MAINTENANCE RECORD

Read directions for use on reverse side

PROBLEM OR COMPLAINT		CORRECTIVE ACTION TAKEN	
EFB UNIT NUMBER		AIRCRAFT N#	
Description of problem or cor detail as possible.	mplaint. Fill in with as much	Description of how to remedy the problem. Leave this space blank. This will be filled in by the administrator.	
Entered By (print)	Date	Date Completed	By (Print)

PROBLEM OF	R COMPLAINT	CORRECTIVE ACTION TAKEN	
EFB UNIT NUMBER		AIRCRAFT N#	
Description of problem or cor detail as possible.	nplaint. Fill in with as much	Description of how to remedy the problem. Leave this space blank. This will be filled in by the administrator.	
Entered By (print)	Date	Date Completed	By (Print)

PROBLEM OR COMPLAINT	CORRECTIVE ACTION TAKEN
EFB UNIT NUMBER	AIRCRAFT N#
Description of problem or complaint. Fill in with as much detail as possible.	Description of how to remedy the problem. Leave this space blank. This will be filled in by the administrator.

Entered By (print)	Date	Date Completed	By (Print)

Directions for filling out EFB/PC MAINTENANCE RECORD

1. PROBLEM	OR COMPLAINT	2. CORRECTIVE ACTION TAKEN	
3. EFB UNIT NUMBER		4. AIRCRAFT N#	
Description of problem or complaint. Fill in with as much detail as possible.		Description of how to remedy the problem. Leave this space blank. This will be filled in by the administrator.	
5.		6.	
7. Entered By (print)	8. Date	9. Date Completed	10. By (Print)

- **1.** Problem or complaint column (filled out by crewmember).
- 2. Corrective action taken column (filled out by computer administrator).
- **3.** EFB Unit Number is located on the unit underneath the protective case, next to the silver power button.
- **4.** Enter the aircraft number, if the problem occurred while on board.
- **5.** Describe the problem or complaint you are having with the unit. Include as much detail as possible about the problem.
- **6.** The computer administrator will enter the corrective action either needed to remedy the problem, or what the operator must do to prevent the problem from reoccurring.
- **7.** Name of crewmember creating the discrepancy.
- **8.** Date of discrepancy.
- **9.** Date completed.
- **10.** Name of computer administrator entering the corrective action.

EFB STANDARD OPERATING PROCEDURES

INTRODUCTION

The following standard operating procedures have been appended to the Standard Operating Procedures Manual Flight Procedures.

General

- 1. Only the PNF will operate the EFB, unless a positive exchange of controls has taken place.
- 2. Stow the unit with the cover closed. vertically, between the seat and the center console, with the handle facing forward. The EFB shall always be stowed during takeoff and landing.
- The screen format is set to Landscape (the horizontal distance is greater than the vertical distance.) This permits the width of the EFB screen to be visible while resting on the lap of PNF.
- 4. Always stow the pen device in it's holster immediately after use, and prior to stowing the EFB.

Taxiing

- 1. Anticipate your taxi route. The PNF will brief the PF regarding the taxi route, and both pilots shall verify and agree on the route before proceeding.
- 2. Utilize the zoom feature to expand the taxi route, zoom into runway incursion hot spots, and other features on the taxi chart.
- 3. Maintain a "sterile cockpit" during taxi.
- 4. The PF should transfer aircraft controls with a positive exchange prior to focusing on details inside the aircraft.
- 5. While moving on the ground, the PNF will have custody, and when in use, will hold the EFB. The Airport Diagram will be displayed and Taxi Progress monitored by the PNF. Prior to takeoff the PNF will select and display the appropriate chart for the procedure being flown. (I.e. Departure Procedure, Departure Alternate or Return Procedure)

Takeoff

Prior to takeoff, the PNF shall stow the EFB. When SID instructions need to be reviewed, the SID procedure may be read directly from the EFB. The EFB unit must then be stowed prior to beginning the takeoff roll. Takeoff Operation: From "Line"

Up" on the runway until completion of the second segment, the EFB shall be stored in the designated storage location.

Climb

During climb, the EFB can be looked at, and data from the electronic enroute charts can be verified. Segments of the departure procedures can be read and verified, and enroute VOR frequencies can be looked up and entered into the VHF radios.

Cruise

During the cruise or enroute phase of flight, the EFB may remain stored in the designated storage location prescribed for each aircraft. Flightcrews shall select and review the anticipated arrival and approach procedures for the destination airport, leaving the next needed chart displayed.

Descent

The EFB can be used during this portion of the flight.

Approach

Terminal Arrival Operation: If a published Arrival Procedure is being flown, the PNF will have custody and will hold the EFB. The Arrival Procedure will be displayed and position on the procedure monitored by the PNF. During the approach phase of flight, the EFB should be referred to prior to beginning the final approach for landing. Terminal and Approach data from the EFB is to be copied on paper and used during an instrument approach briefing in IMC. The copied briefing shall contain at least: COMM Frequencies, NAV Frequencies, Inbound Course, DH or MDA. The EFB shall be stowed no later than the beginning of the final approach segment. If the EFB unit fails during this phase of flight, it should be stowed until the completion of the flight. After Landing: Follow the procedure in the Taxiing section above.

Post Flight

Upon completion of the flight, the JeppView application should be closed by clicking on the X in the upper right-hand corner. When prompted to save the route, choose NO. After the application closes, stow the pen in the holster, turn the EFB off, by pressing the silver power button in the upper corner of the unit, and close the case. Stow the unit vertically between the seat and the center console, with the carrying handle facing forward, or remove it from the aircraft if parking where extreme (colder than 32°F or greater than 100°F) temperatures are expected.