Aircraft Electronics Association (AEA)
Wi-Fi Summit

EFB Wireless Connectivity & Security Considerations

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Federal Aviation Administration

Briefing Objectives

- ➢ **EFB Policy**
  - ✓ EFB Security Considerations
  - ✓ EFB "Gateway" System Function
  - ✓ EFB Classes and Approval Process
  - ✓ EFB Type "A" & "B" Software Applications
- ✓ **Discussion and wrap-up**

What is EFB Security Policy Today ?

➢ **Future directions on EFB security**

- ✓ The FAA currently does not have specific policy and guidance for EFB system security

- ✓ EFB manufacturers and operators determine security implementations on a case-by-case basis

- ✓ What are the risks associate with EFB system and security ?

- ✓ What is the regulatory basis for EFB security ?

- ✓ Should the FAA develop specific prescriptive policy and guidance for EFB systems or identify general security issues for operators to mitigate ?

Possible EFB System Risk Assessment

➢ **Risk assessment is used to determine the extent of the potential threat and risk associated with an EFB system throughout its System Development Life Cycle.**

➢ **Risk is a function of the likelihood of a given threat-sources exercising a particular potential vulnerability, and the impact of that adverse event on the EFB system and aircraft operation.**

1) **System Characterization**
2) **Threat Identification**
3) **Vulnerability Identification**
4) **Control Analysis**
5) **Likelihood Determination**
6) **Impact Analysis**
7) **Risk Determination**
8) **Control Recommendations**
9) **Results Documentation**

EFB "Gateway" System Functions

➤ EFB may be used for data communications between the aircraft and the National Airspace System (NAS)

➤ Primary use for Airline Administrative Communications (AAC)

➤ Possible to exchange large volumes of information between aircraft and airline operations centers

➤ Possible to eliminate millions of paper copies
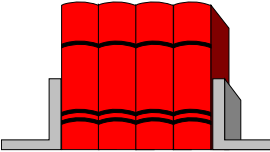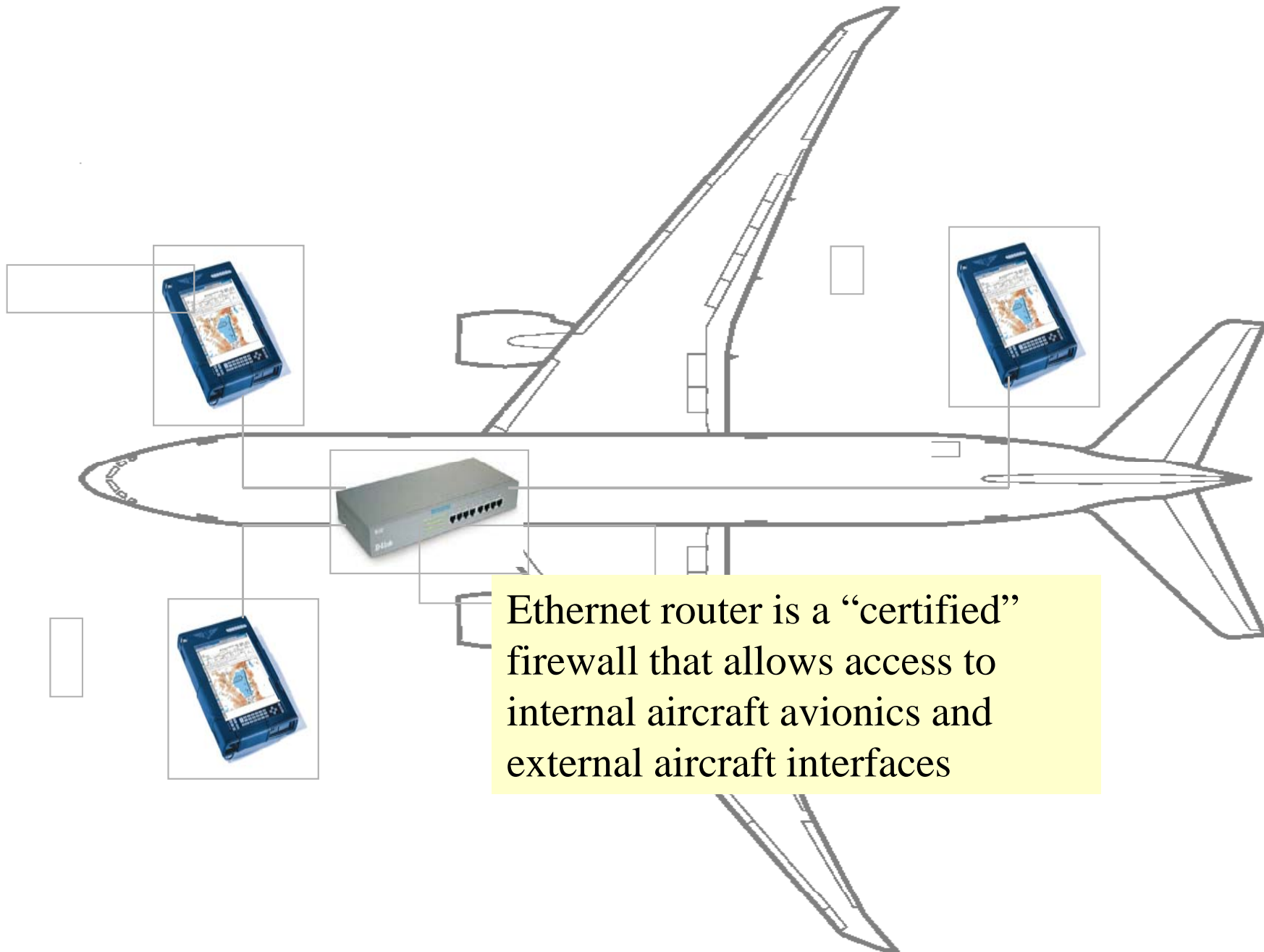
Typical Application & Services

Attendant EFB

Cockpit Terminal - EFB

Wireless Cabin Distribution

Server

Airborne Communication Links (ACARS, XM, Sirius,JetConnect)

Air to Air Data Link (Sirius/XM or JetConnect)
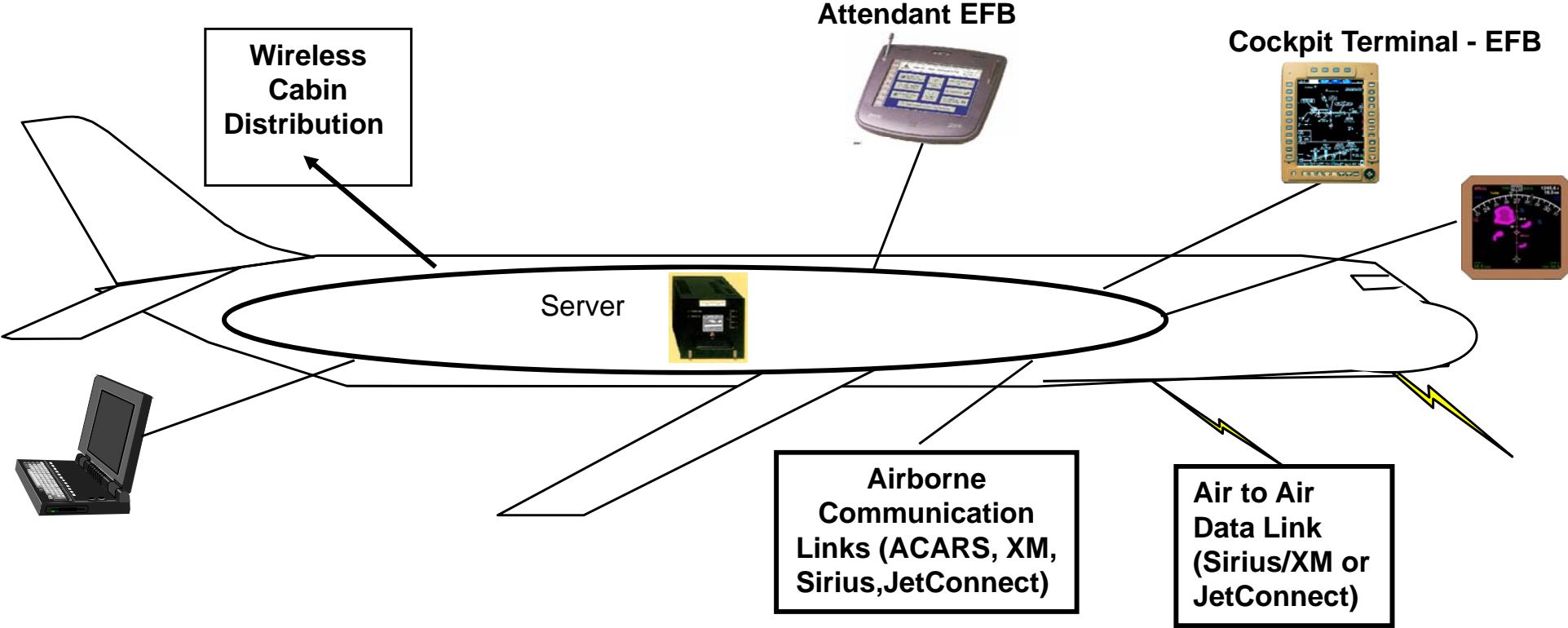
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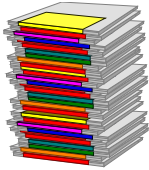
Flight Ops
- Weather
- Electronic Manuals/Charts
- Cabin Surveillance
- Surface Moving Maps
- Flight Papers/Data

Onboard/Passenger
- Rebooking/IRROPS
- Customer Profiles
- Buy On Board
- Live Audio
- Email/WAP Browsing

Maintenance
- *FIX
- Flight Data Downloads
- Electronic Logbook
- Maintenance Data Collection
- Electronic MEL

EFB Data Connectivity

Ethernet router is a "certified" firewall that allows access to internal aircraft avionics and external aircraft interfaces

Possible Architecture & Infrastructure

Satellite comms

VHF/HF comms

1st Officer

CSD, SCCM or Engineer

Captain

Ethernet router

Antenna

Wireless bridge

Fileserver (optional)

802.11 ground comms

Mobile device for refueller/dispatcher

Wireless link at head of stand

BA Network

BRITISH AIRWAYS
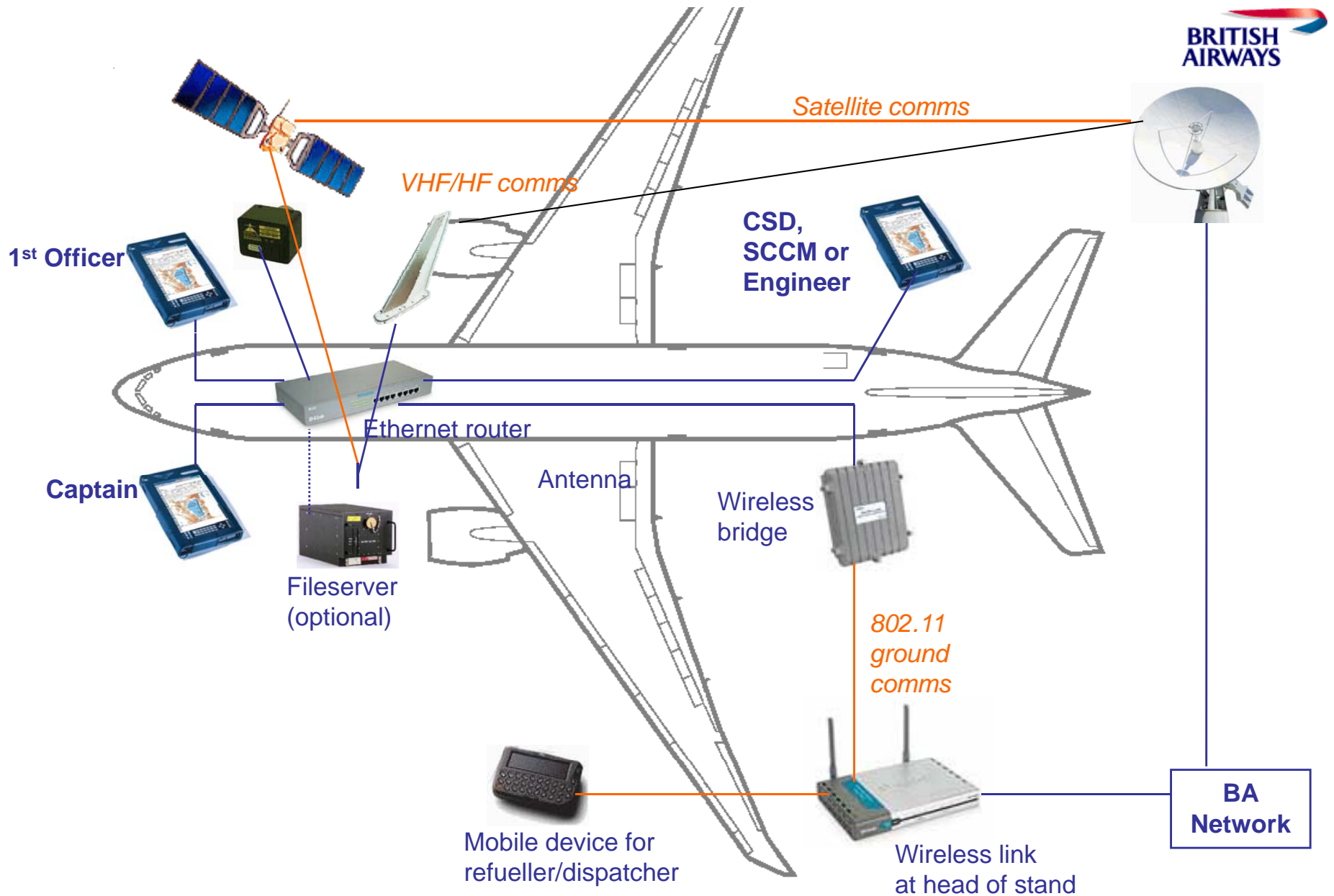
EFB Classes and Approval Process

Portable Equipment | Installed Equipment

Class 1
- Portable
- Usable above
- 10,000 ft. and Airport surface
- Limited by AC 120-76A

Class 2
- Portable devices
- Crashworthy-mounted
- EMI approval required
- All phases of flight
- Ships power
- Read only airplane data
- Video interface
- Limited by AC 120-76A

Class 3
- Installed
- Ships power
- All flight phases
- Datalink
- Interactive Apps
- Video interface
- Increased Functionality

Type A & B Applications

Certified applications

Operations approval

EFB (Type A & B) Applications

Electronic Document Browser

Federal Aviation Administration

Electronic-Logbook

Aeronautical Charts – Access Methodology
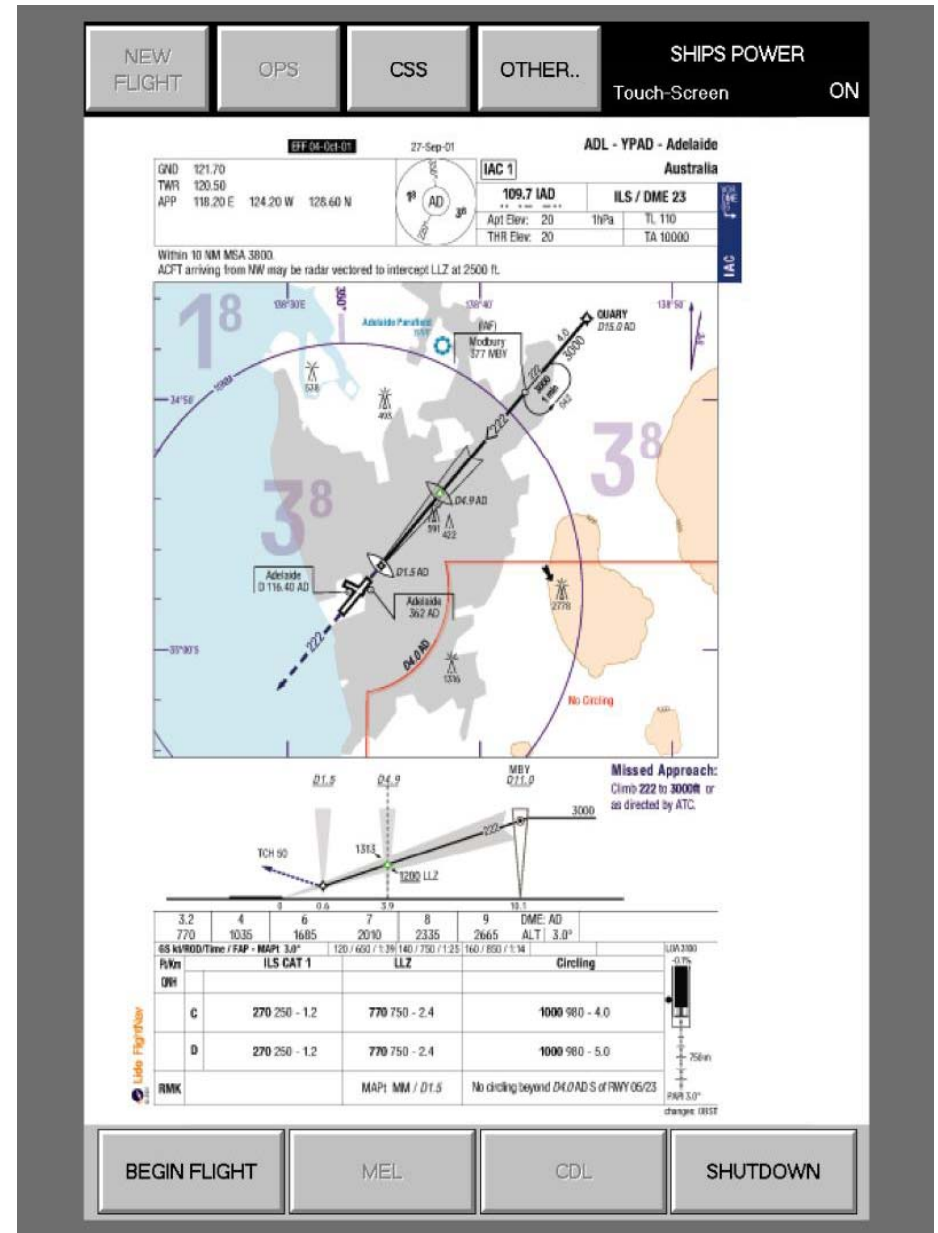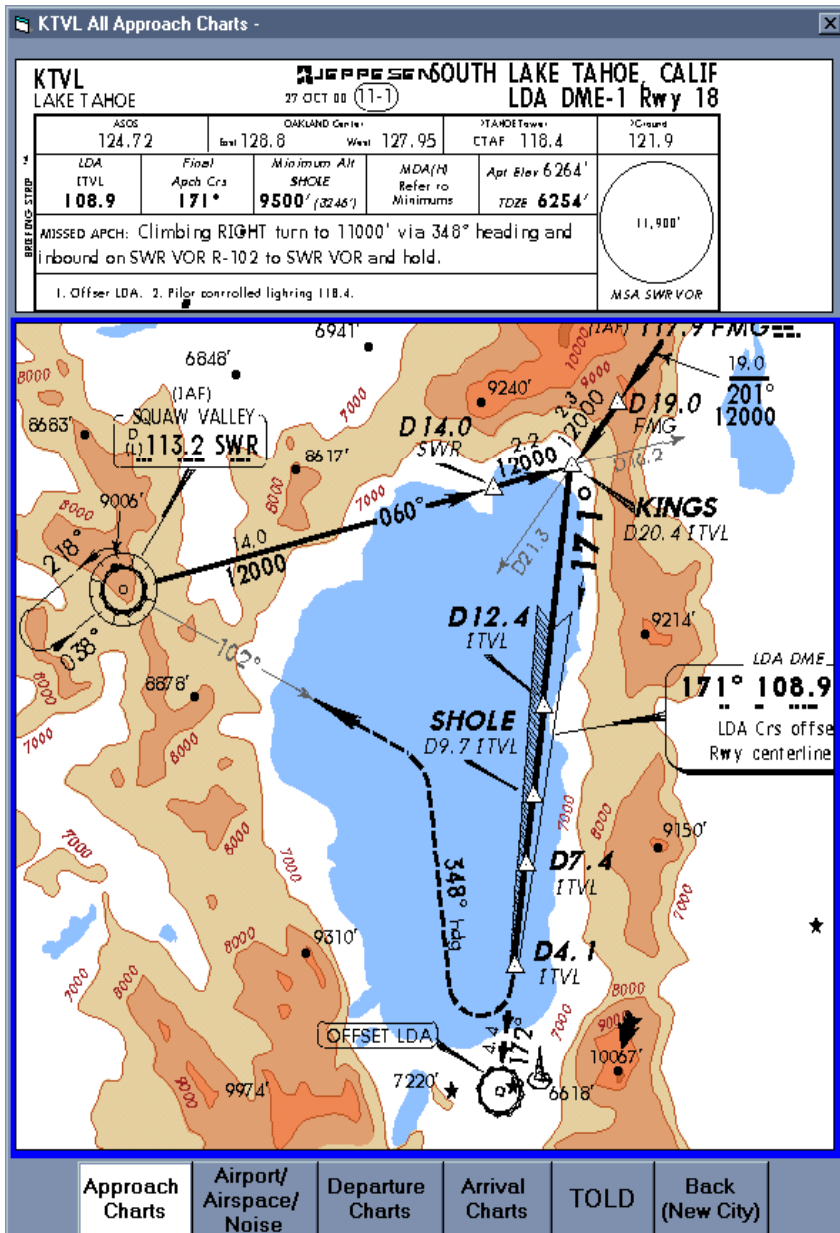
Questions

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