

For Distribution Only With a New PC

Microsoft[®]

Pilot's Handbook



Microsoft[®]
Flight Simulator 98

As Real As It Gets

Here's a list of basic keyboard shortcuts for Microsoft Flight Simulator 98. For a complete list of keyboard shortcuts see the "Using Flight Simulator" section of Help. To change these shortcuts or assign other actions to keyboard shortcuts or joystick buttons, click **Custom Controls** on the **Options** menu.

Simulation Controls

<i>Pause/resume flight</i>	<i>P</i>
<i>Sound on/off</i>	<i>Q</i>
<i>Restart flight</i>	<i>CTRL+;</i>
<i>Save flight</i>	<i>SEMICOLON (;)</i>
<i>Land me</i>	<i>X</i>
<i>Exit</i>	<i>CTRL+C</i>

Views

<i>Change view direction</i>	<i>SHIFT+KEYPAD 1-9</i>
<i>Toggle cockpit, interior tower, spot views</i>	<i>S</i>
<i>Toggle full screen view</i>	<i>W</i>
<i>Show/hide instrument panel</i>	<i>SHIFT+[</i>
<i>Show coordinates</i>	<i>SHIFT+Z</i>

Aircraft Controls

Ailerons (roll)

<i>Bank left</i>	<i>KEYPAD 4</i>
<i>Bank right</i>	<i>KEYPAD 6</i>
<i>Center ailerons</i>	<i>KEYPAD 5</i>

Elevator (pitch)

<i>Nose up</i>	<i>KEYPAD 2</i>
<i>Nose down</i>	<i>KEYPAD 8</i>
<i>Trim nose up</i>	<i>KEYPAD 1</i>
<i>Trim nose down</i>	<i>KEYPAD 7</i>

Rudder (yaw)

<i>Nose left</i>	<i>KEYPAD ZERO (0)</i>
<i>Nose right</i>	<i>KEYPAD ENTER</i>
<i>Center rudder</i>	<i>KEYPAD 5</i>

Flaps

<i>Extend in increments</i>	<i>F7</i>
<i>Retract in increments</i>	<i>F6</i>
<i>Extend/retract spoilers</i>	<i>/</i>

Engine Controls

<i>Increase power</i>	<i>F3 or KEYPAD 9</i>
<i>Decrease power</i>	<i>F2 or KEYPAD 3</i>
<i>Set full power</i>	<i>F4</i>
<i>Set idle power</i>	<i>F1</i>
<i>Reverse thrust</i>	<i>F2 (hold down)</i>

Aircraft System Controls

<i>Apply/release wheel brake</i>	<i>PERIOD (.)</i>
<i>Apply/release parking brake</i>	<i>CTRL+PERIOD</i>
<i>Extend/retract landing gear</i>	<i>G</i>
<i>Lights on/off</i>	<i>L</i>
<i>Landing light on/off</i>	<i>CTRL+L</i>
<i>Strobe lights on/off</i>	<i>O</i>
<i>Autopilot on/off</i>	<i>Z</i>

Radio Controls

<i>Increase/decrease value</i>	<i>+/-</i>
<i>Select digits in ADF</i>	<i>A or AA or AAA</i>
<i>Select digits in com 1</i>	<i>C or C,C</i>
<i>Select digits in nav 1 or 2</i>	<i>V+1 or N+2, NN</i>
<i>Select digits in transponder</i>	<i>T, TT, TTT, or TTTT</i>
<i>Select OBI or 2</i>	<i>V+1 or V+2</i>
<i>Select DME</i>	<i>F+1 or F+2</i>
<i>Toggle speed display</i>	<i>+/-</i>

Slew Control

<i>Turn slewing mode on/off</i>	<i>Y</i>
---------------------------------	----------

Movement

<i>Forward</i>	<i>KEYPAD 8</i>
<i>Backward</i>	<i>KEYPAD 2</i>
<i>Left</i>	<i>KEYPAD 4</i>
<i>Right</i>	<i>KEYPAD 6</i>
<i>Freeze</i>	<i>KEYPAD 5</i>

Altitude

<i>Increase altitude</i>	<i>Q</i>
<i>Decrease altitude</i>	<i>A</i>
<i>Freeze altitude</i>	<i>F2 or F3</i>
<i>Increase altitude quickly</i>	<i>F4</i>
<i>Decrease altitude quickly</i>	<i>F1</i>

Heading

<i>Left</i>	<i>KEYPAD 1</i>
<i>Right</i>	<i>KEYPAD 3</i>
<i>Freeze</i>	<i>KEYPAD 5</i>
<i>Orient north/straight and level</i>	<i>SPACEBAR</i>

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Contents



Welcome to Microsoft Flight Simulator 98	1
Installing Flight Simulator	1
Starting Flight Simulator	2
What's New in Flight Simulator.....	2
Area Charts, Airport Diagrams, and Approach Charts.....	6
Atlanta	8
Charlotte	10
Chicago.....	12
Cleveland.....	15
Dallas	17
Denver	19
Detroit.....	21
Hawaii.....	23
Houston.....	28
Los Angeles	30
Miami.....	34
New Orleans	36
New York	38
San Diego	41
San Francisco.....	43
Seattle	45
Caribbean.....	48
London.....	57
Munich.....	59
Paris	61
Japan.....	63

Welcome to Microsoft Flight Simulator 98



Welcome to Microsoft® Flight Simulator 98. Follow these simple installation and starting instructions, and you'll be ready for takeoff before you know it.

Installing Flight Simulator

1. Turn on your computer and start Microsoft Windows 95 or Windows NT Workstation 4.0.
2. Place the Flight Simulator CD-ROM in the disc holder (if required), and insert it in your CD-ROM drive.
3. Follow the instructions when the installation screen appears.

NOTE If your CD-ROM drive does not support automatic installation, follow these steps:

4. Click **Start**.
5. Point to **Settings**, and then click **Control Panel**.
6. Double-click **Add/Remove Programs**.
7. Windows 95 or NT Workstation 4.0 displays the **Add/Remove Programs Properties** dialog box.
8. On the **Install/Uninstall** tab, click **Install**.

Follow the instructions on your screen.

During Setup, you can select a **Typical** or **Custom** installation. If you need to conserve hard disk space, choose the **Typical** setup option. To optimize flying performance, choose **Custom**. If you are an advanced user and want to select and configure components yourself, choose **Custom**.

If you experience any performance problems once you're up in the air (for example, slow response time or jerky screen displays), check the "Using Flight Simulator" section of Help for suggestions on fine-tuning Flight Simulator.

Starting Flight Simulator

- To start Flight Simulator automatically, place the Flight Simulator CD-ROM in the disc holder (if required), and insert it in your CD-ROM drive.
-or-
- If you created a shortcut to Flight Simulator on your desktop, double-click the icon.
-or-
- Click the **Start** button, point to **Programs**, point to **Microsoft Games**, point to **Flight Simulator**, and then click **Flight Simulator 98**.

What's New in Flight Simulator 98

The best gets better with Flight Simulator 98. Here are some of the exciting features and technological improvements you'll find in Flight Simulator 98.

Three New Aircraft

Your hangar of eight aircraft now includes a challenging Bell 206B JetRanger III helicopter, the latest Cessna Skylane 182S, and the Learjet 45. You'll also find improved versions of Flight Simulator veterans, including a Cessna Skylane RG, an Extra 300S, a Boeing 737-400, a Schweizer 2-32 sailplane, and a Sopwith Camel. The flight models for these aircraft have been validated by experts, including Cessna, Learjet, FlightSafety International, and Patty Wagstaff. To find detailed information about each aircraft, click **Aircraft Handbooks** on the **Help** menu.



Improved Instrument Panels

New photorealistic panels put you in the pilot's seat. Developed from photographs of the actual cockpits, the new panels are easier to read and feature more sophisticated avionics, autopilots, and other systems. The panels scale automatically to match your screen resolution, and on many panels you can display radios, detailed engine controls, and other items in separate windows as you fly. When you master the basic instruments in the Cessna Skylane 182S, try to keep up with the latest electronic displays in the Learjet 45. If you feel a bit overwhelmed, just point to an instrument or control to see a pop-up label, or click an item to learn more about how it works.

Feel the Force

If you have a force-feedback joystick like the Microsoft SideWinder® Force Feedback Pro joystick, you can experience a new level of realism in Microsoft Flight Simulator 98. You'll feel your wheels rolling down the runway and the stick shake in a stall, sense trim forces as you change speeds and power settings, and encounter other effects that make pulling Gs more than a game. To set options for a force-feedback joystick, click **Custom Controls** on the **Options** menu and then click the **Forces** tab.

New Sights and Sounds

3-D acceleration using DirectX and other advanced graphics technology make scenery pop to life. Flight Simulator supports the latest graphics hardware to show you more detail and improved performance. Even if you don't have 3-D hardware, new mip-mapping and image-smoothing techniques improve the out-the-window view. Of course, what you see is just part of the picture. New digitized sounds—from wind noise and tire squeals to whining jet turbines and electronic warnings—immerse you in a realistic flying environment. To set sound options, click **Preferences** on the **Options** menu and then click the **Display & Sound** tab.



Multiplayer

Multiplayer capability puts you in crowded skies via the Internet Gaming Zone (<http://www.zone.com>), a network, or a direct connection between two computers. Challenge other pilots to an aerobatic competition on the Internet Gaming Zone. Join a fly-in on a network. Chase other aircraft through an urban obstacle course. Practice formation aerobatics for an airshow. Enter the traffic pattern at a busy airport. Or put yourself in the control tower and try to keep everyone else organized. To join or host a multiplayer session, click **Multiplayer** on the **Flights** menu and follow the instructions on your screen.



More Airports and Scenery

Flight Simulator 98 gives you the globe. You can take off from more than 3,000 airports worldwide—10 times more than in previous versions. You'll also find detailed scenery, including atlas data (roads, rivers, lakes) for the U.S. and Europe and over 45 new metropolitan areas, including more than 20 new U.S. cities and new photorealistic scenery of Hong Kong. And if you like to fly low,

watch out for thousands of new buildings, towers, antennas, and other obstacles. To set scenery options, click **Scenery Complexity** on the **World** menu. You can also control dynamic scenery—air and ground traffic. Click **Dynamic Scenery** on the **World** menu.

New Adventures

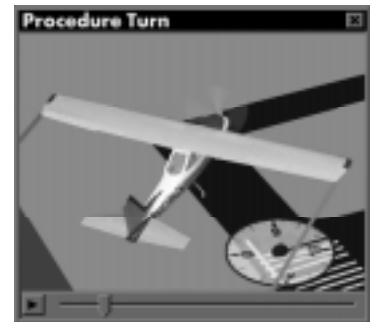
Try a cross-Channel hop from Paris to London or take command of an airline flight from LAX to JFK. A logbook full of new adventures will have you taking off on realistic flights with air traffic control instructions, emergencies, and other surprises that test your skills. To make sure you're prepared before each flight, review the Preflight Briefings. To see these topics, click **Preflight Briefings** on the **Help** menu. To fly an adventure, click **Adventures** on the **Flights** menu.

Flight School

Whether you're a novice or seasoned Flight Simulator pilot, you'll find more lessons to hone your flying skills. You can try introductory flights to learn the basics of flying a specific aircraft, or take advanced lessons on such skills as ILS approaches and holding patterns. To review background information about aerodynamics, aircraft systems, navigation, and other subjects, click **Pilot Training** on the **Help** menu. Before you take off, make sure you review the Preflight Briefings that prepare you for each lesson. To see these topics, click **Preflight Briefings** on the **Help** menu. To fly a lesson, click **Lessons** on the **Flights** menu.

An Online Aviation Library

The updated online Help includes topics on subjects from aerodynamics and advanced flying techniques to aircraft instruments and systems, weather, navigation, regulations, and human factors. Videos and animations bring key concepts to life, while more than 200,000 words of text take you deep into the real-world details of flying. To explore Help, click **Pilot Training** on the **Help** menu. If you need information about a specific aircraft, the Aircraft Handbooks section of Help includes checklists, operating procedures, and performance statistics. To see these handbooks, click **Aircraft Handbooks** on the **Help** menu.



Globe Trotting

The improved Airport/Facility Directory (A/FD) and Go To features help you enjoy the world of airports and scenery in Flight Simulator 98. The powerful search features in the A/FD make it easy to find detailed information about the airports and navigation aids in the Flight Simulator database. To use the A/FD, click **Airport/Facility Directory** on the **World** menu.

You can also start a flight quickly at any airport or at a specific location and altitude. Just click **Go To** on the **World** menu and fill in the appropriate information.

Web Links

The latest information about Flight Simulator is just a mouse click away. Links from the Help menu take you directly to the official Microsoft Flight Simulator Web site at <http://www.microsoft.com/games/fsim>. You'll find articles about flying and Flight Simulator, technical support, links to other sites devoted to Flight Simulator, and more. To see these links, point to **Microsoft On The Web** on the **Help** menu.

Get Help Fast

Help includes tips, hints, and detailed procedures to help you get the most out of Flight Simulator. Click **Using Flight Simulator** on the **Help** menu, or click **Index** to locate specific information about customizing Flight Simulator, improving performance, changing the weather, flying lessons and adventures, keyboard shortcuts, and so forth. And don't forget to check the back cover of this book for a list of basic keyboard shortcuts.

Flight Simulator in the Classroom

Flight Simulator is a terrific tool to introduce students to aviation, math, geography, physics, and related subjects. The Teacher's Activity Guide available on the Flight Simulator Web site has lesson plans, student worksheets, and links to resources that educators can use in the classroom. You can find the Teacher's Activity Guide for Flight Simulator at: <http://www.microsoft.com/games/fsim/tag/tag-intro.htm>.

Area Charts, Airport Diagrams, and Approach Charts



This Pilot's Handbook includes charts for some of the most interesting areas you can visit in Flight Simulator 98. On the pages that follow, you'll find area charts to help you navigate around major cities and geographic areas, plus a selection of airport diagrams and instrument approach charts to help you find your way to specific runways.

Airport/Facility Directory

Flight Simulator 98 includes an improved Airport/Facility Directory (A/FD) with powerful search features to help you find information about the airports and navigation aids in the Flight Simulator database. For example, you can look up airports by their official identifiers or names, or by searching global regions, countries, states or provinces, or cities. For each airport you can find the field elevation, latitude/longitude, runway numbers and lengths, and information about instrument approaches. You can also look up the location, frequency, and other information about each VOR and NDB in the database.

To use the A/FD, click **Airport/Facility Directory** on the **World** menu. For more information about using the Airport/Facility Directory, see the topic "Using the Airport/Facility Directory" in online Help.

Chart Legend

The following charts are simplified versions of real navigation charts. They include basic information to help you find airports, navigation aids, and some visual checkpoints. The legend explains the symbols on the charts.

You can quickly move your aircraft to any airport or to a specific location defined by latitude and longitude. To do so, click the **Go To** command on the **World** menu and fill in the appropriate information.

For detailed information about all the airports and navigation aids in the Flight Simulator database, check the Airport/Facility Directory (A/FD). To use the A/FD, click **Airport/Facility Directory** on the **World** menu. For more information about using the Airport/Facility Directory, see the topic “Using the Airport/Facility Directory” in Help.



NAME
CT 124.4
206

NAME
ATIS 118.0

NFCT



JOLIET
112.3

VOR (T)
KANKAKEE
111.6

KEDZI
248

Legend

Civil-Public use airport

Restricted/Private-Nonpublic use airport,
having emergency use or landmark value

Rotating light in operation, sunset to sunrise

Airport name
Control Tower (CT)-Primary frequency
Elevation in feet

Airport name
Automatic Terminal Information Service-
Communication radio frequency

Non-Federal Control Tower

VOR (VHF Omni Range)-Civilian
navigation board

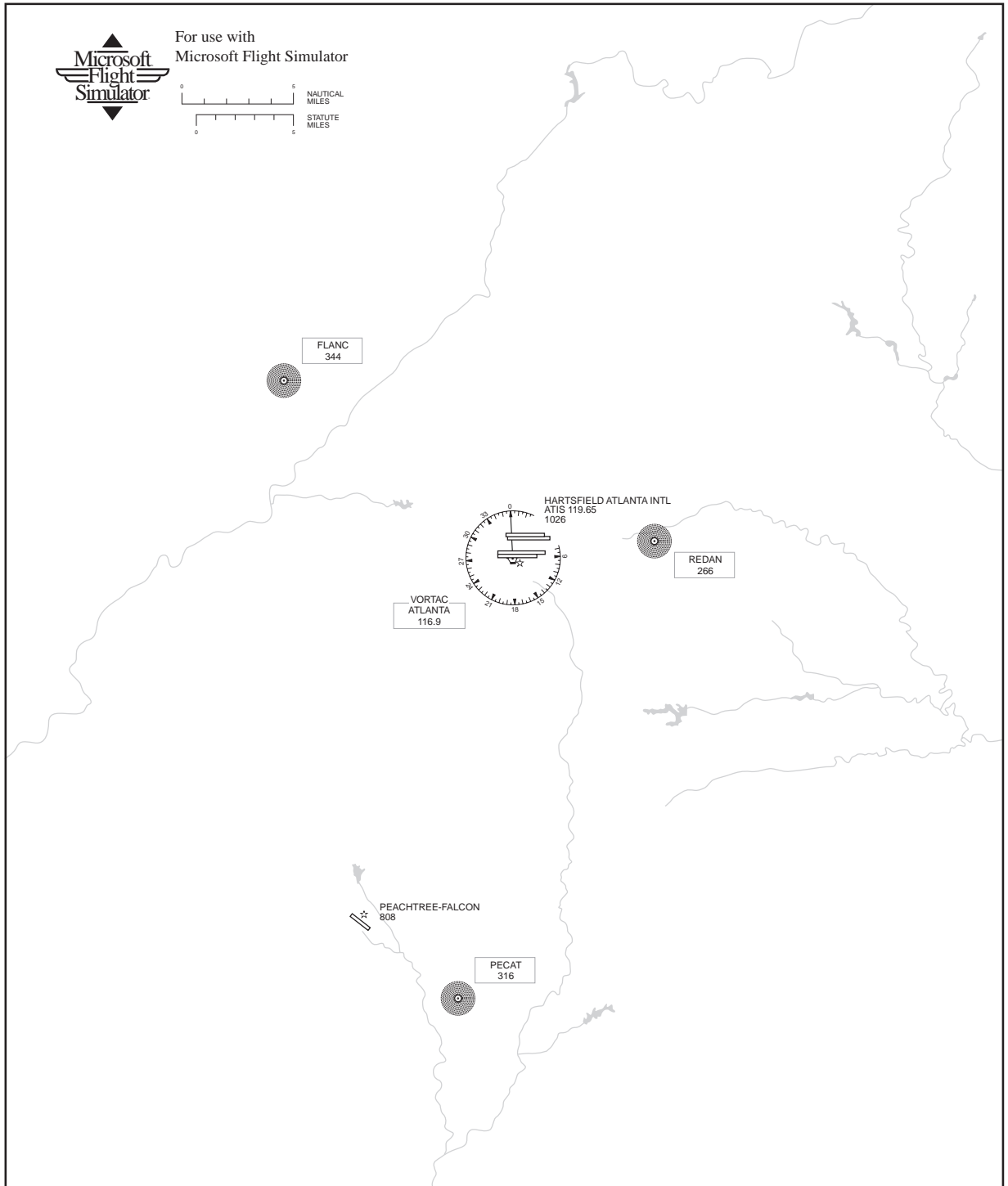
VORTAC (VHF Omni Range TACAN)-
Civilian and military navigation beacon

VOR-Navigation radio frequency

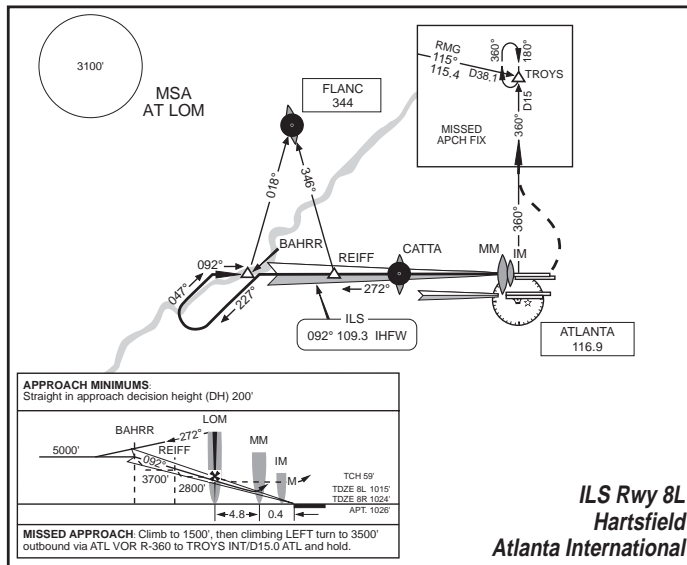
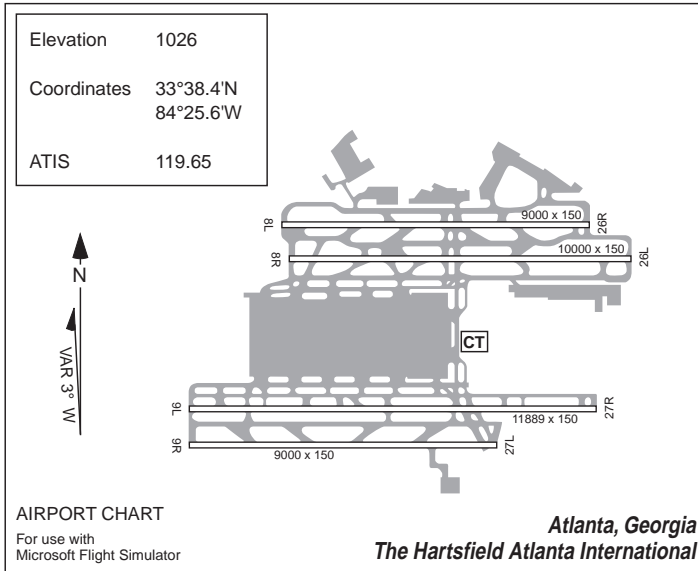
VOR(T)-Terminal VOR

NDB (Non-directional radio beacon) frequency

Atlanta



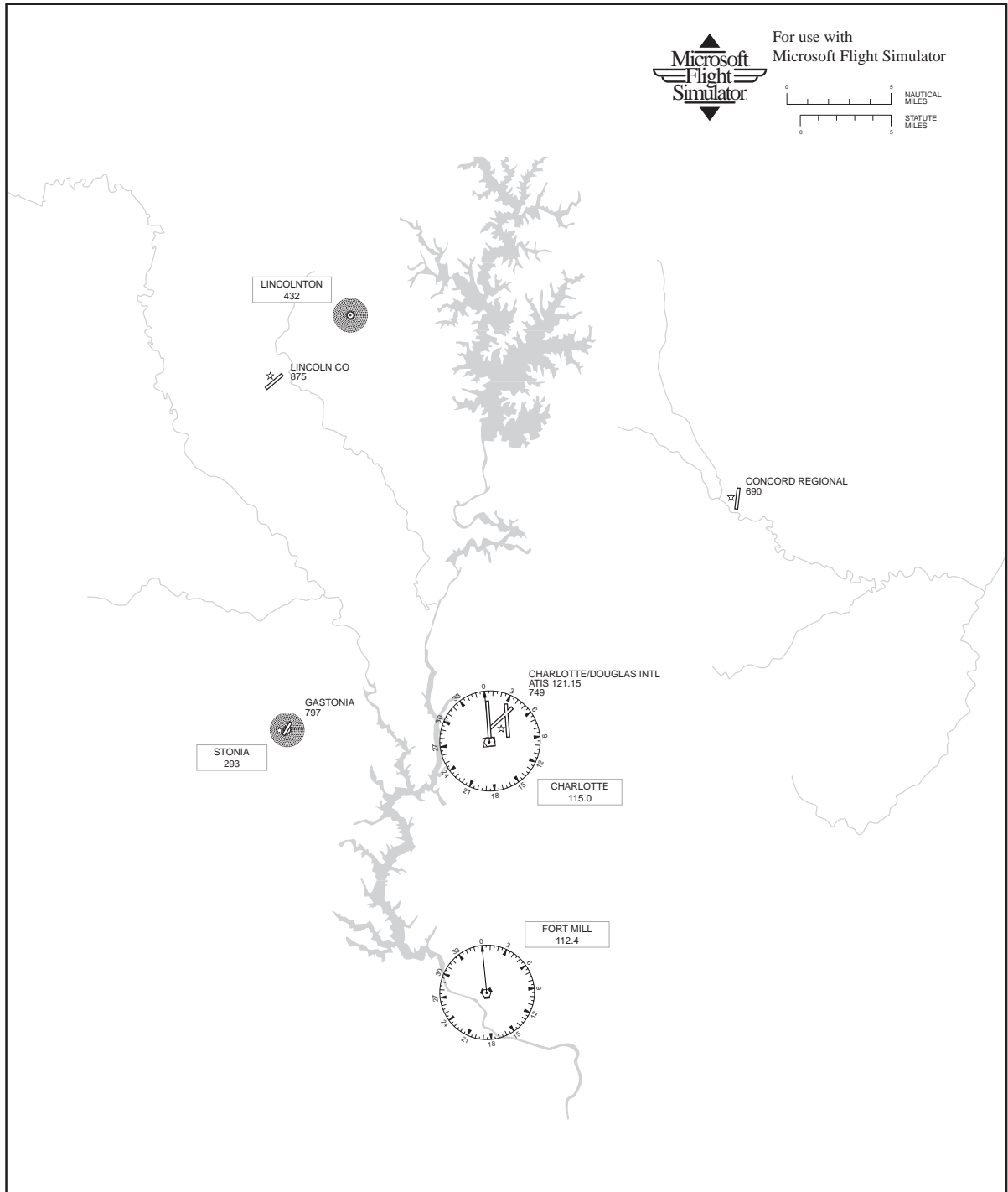
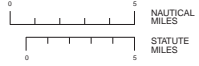
Atlanta



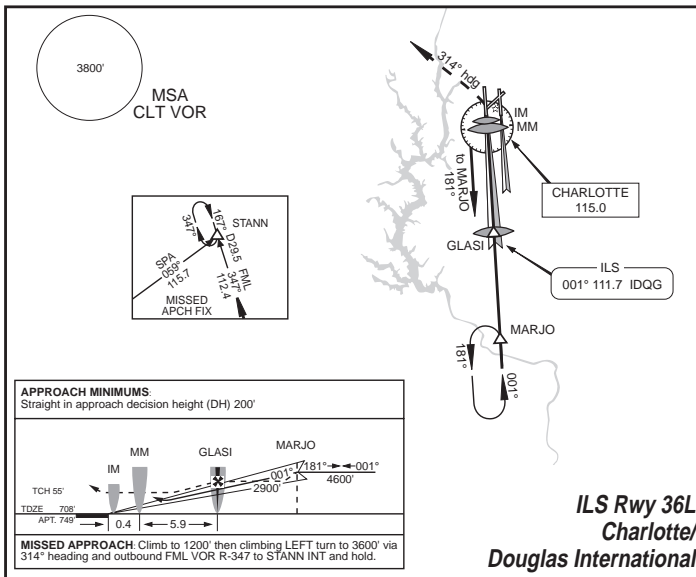
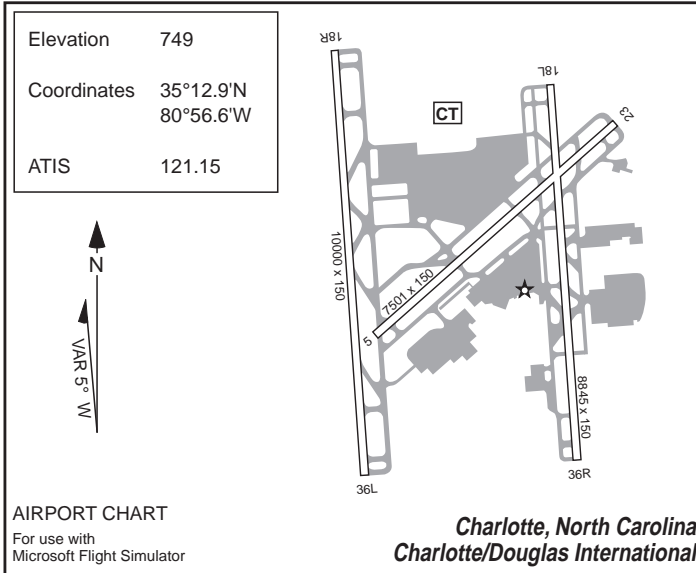
Charlotte



For use with
Microsoft Flight Simulator



Charlotte



Chicago

Lake Michigan



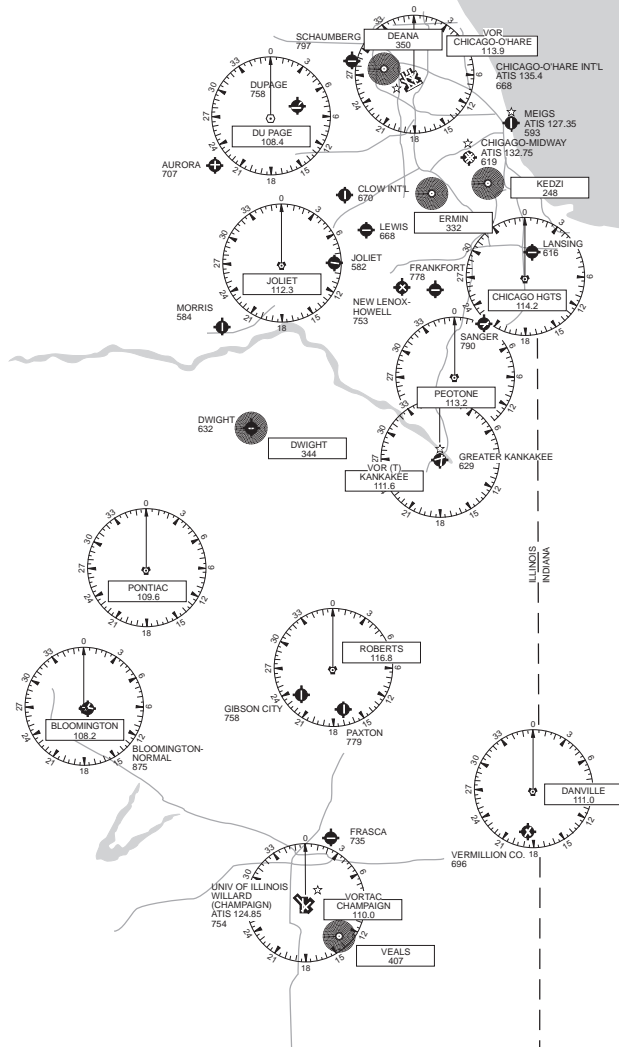
For use with
Microsoft Flight Simulator



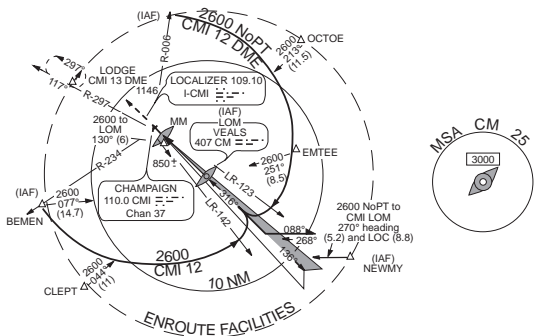
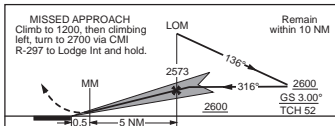
NOTAM Notice to Airmen

For details, see Chicago Sectional
Aeronautical Chart.

If no ATIS is available, tune in the
control-tower frequency (CT) for
information.

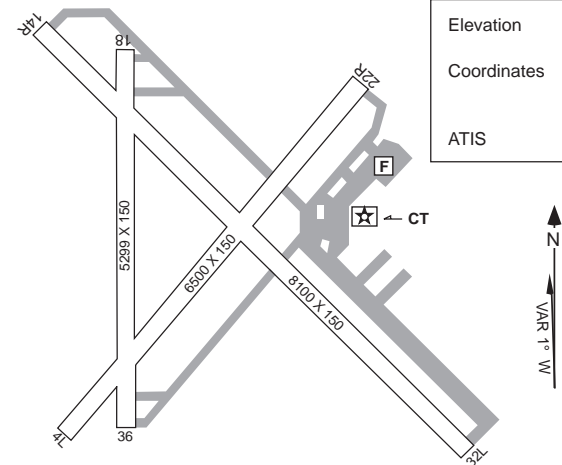


Chicago



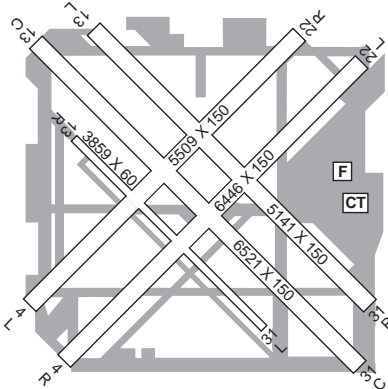
ILS Rwy 32
University of Illinois-Willard (CMI)

Elevation	754
Coordinates	40°02'N 88°17'W
ATIS	124.85



AIRPORT CHART
For use with
Microsoft Flight Simulator

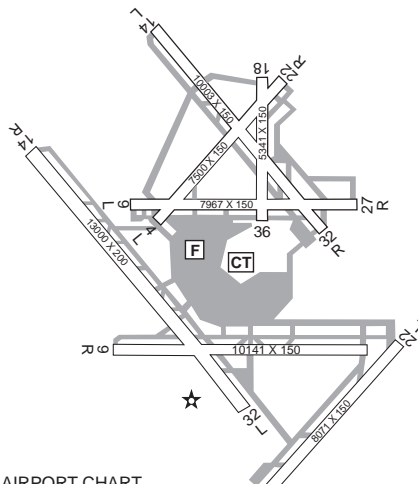
Champaign-Urbana, Illinois
University of Illinois-Willard (CMI)



AIRPORT CHART
For use with
Microsoft Flight Simulator

Elevation	619
Coordinates	41°47'N 87°45'W
ATIS	132.75

Chicago, Illinois
Chicago-Midway (MDW)

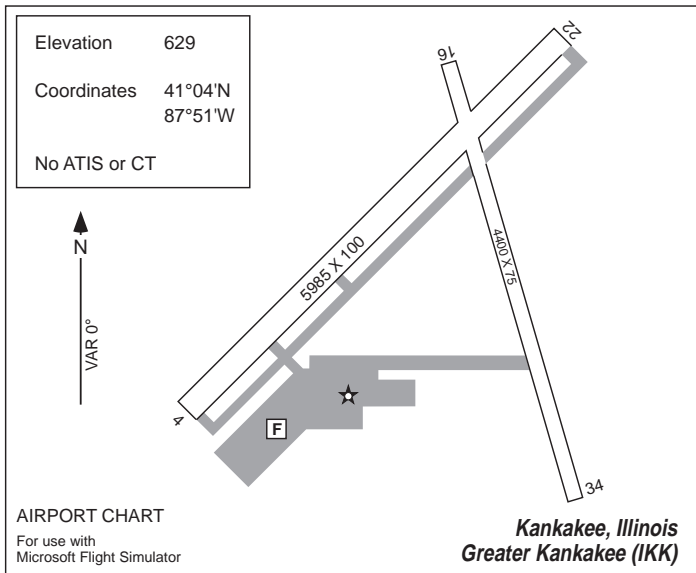
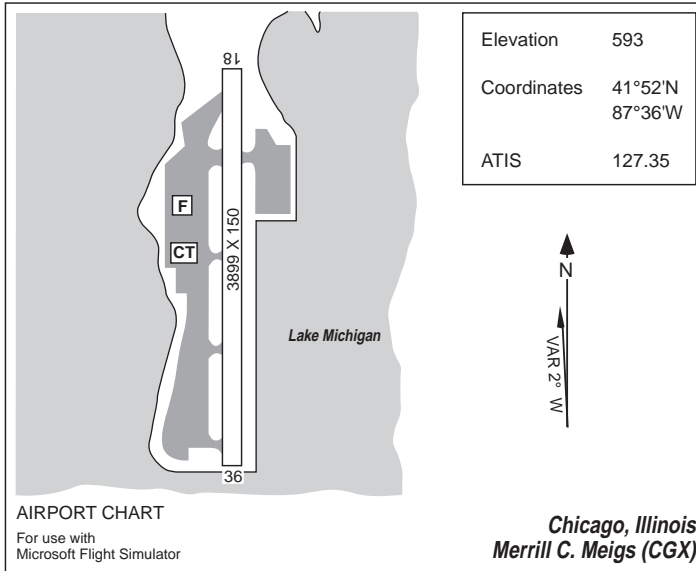


AIRPORT CHART
For use with
Microsoft Flight Simulator

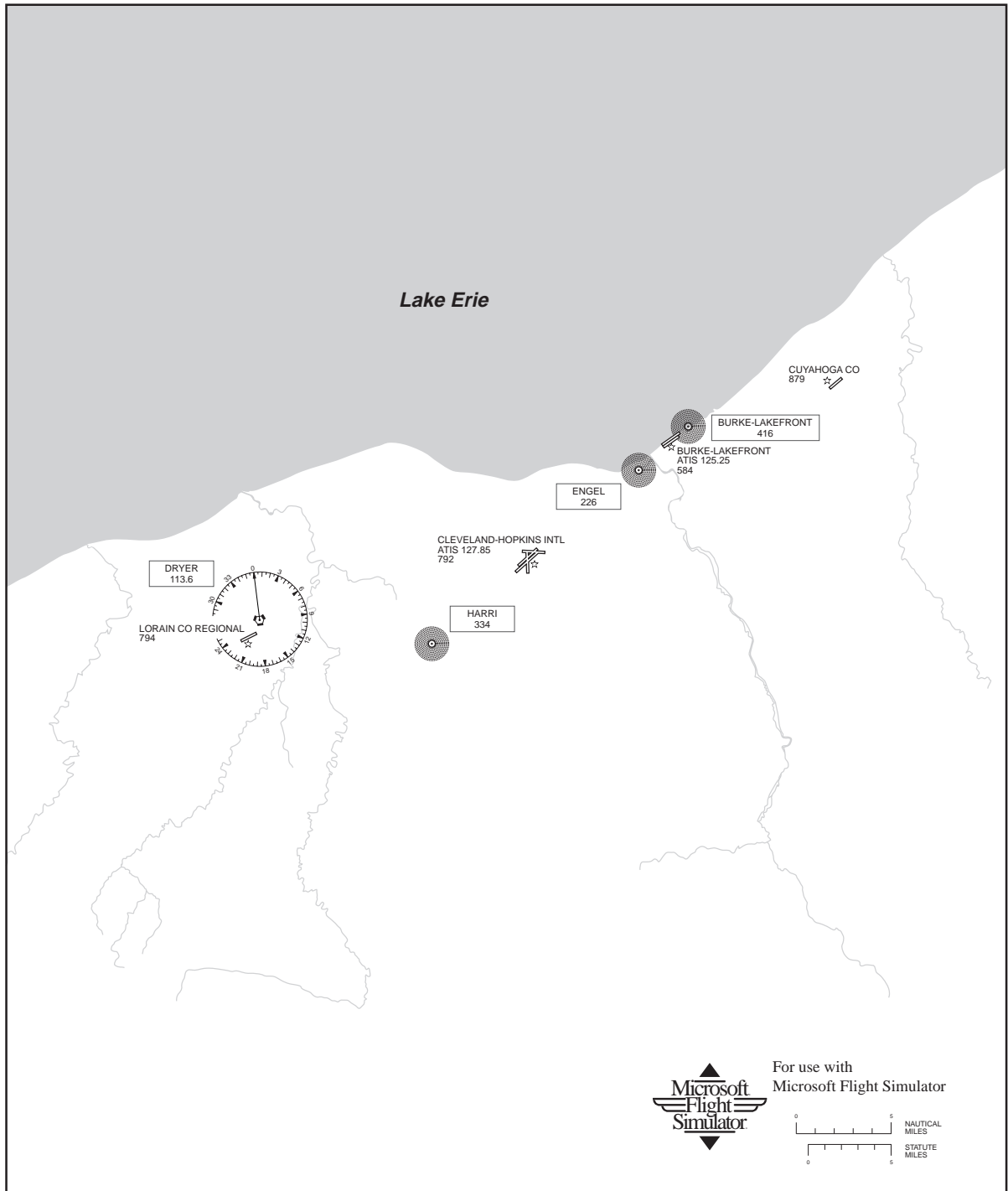
Elevation	668
Coordinates	41°59'N 87°54'W
ATIS	135.4

Chicago, Illinois
Chicago-O'Hare International Airport (ORD)

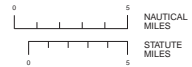
Chicago



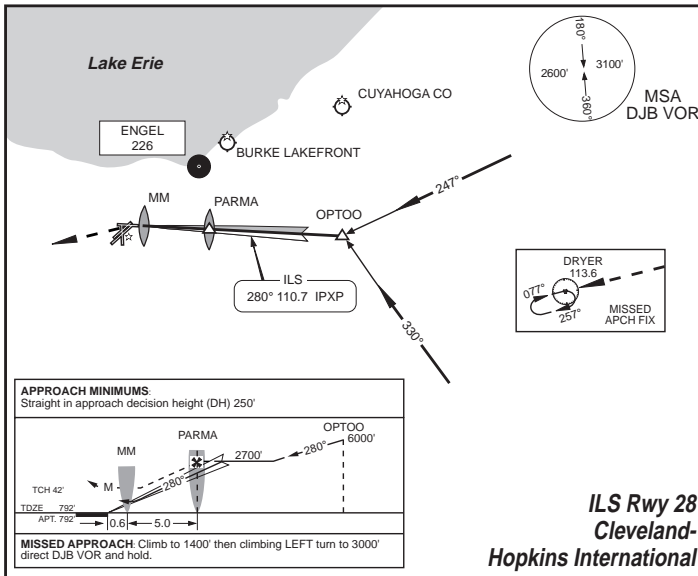
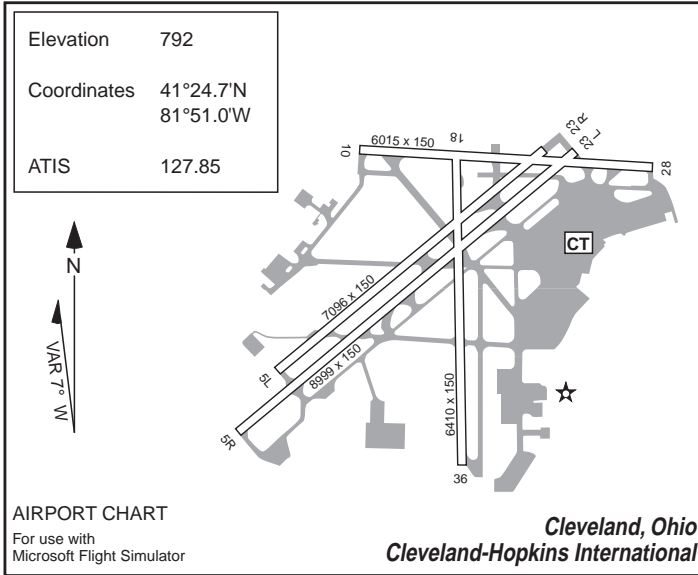
Cleveland



For use with
Microsoft Flight Simulator



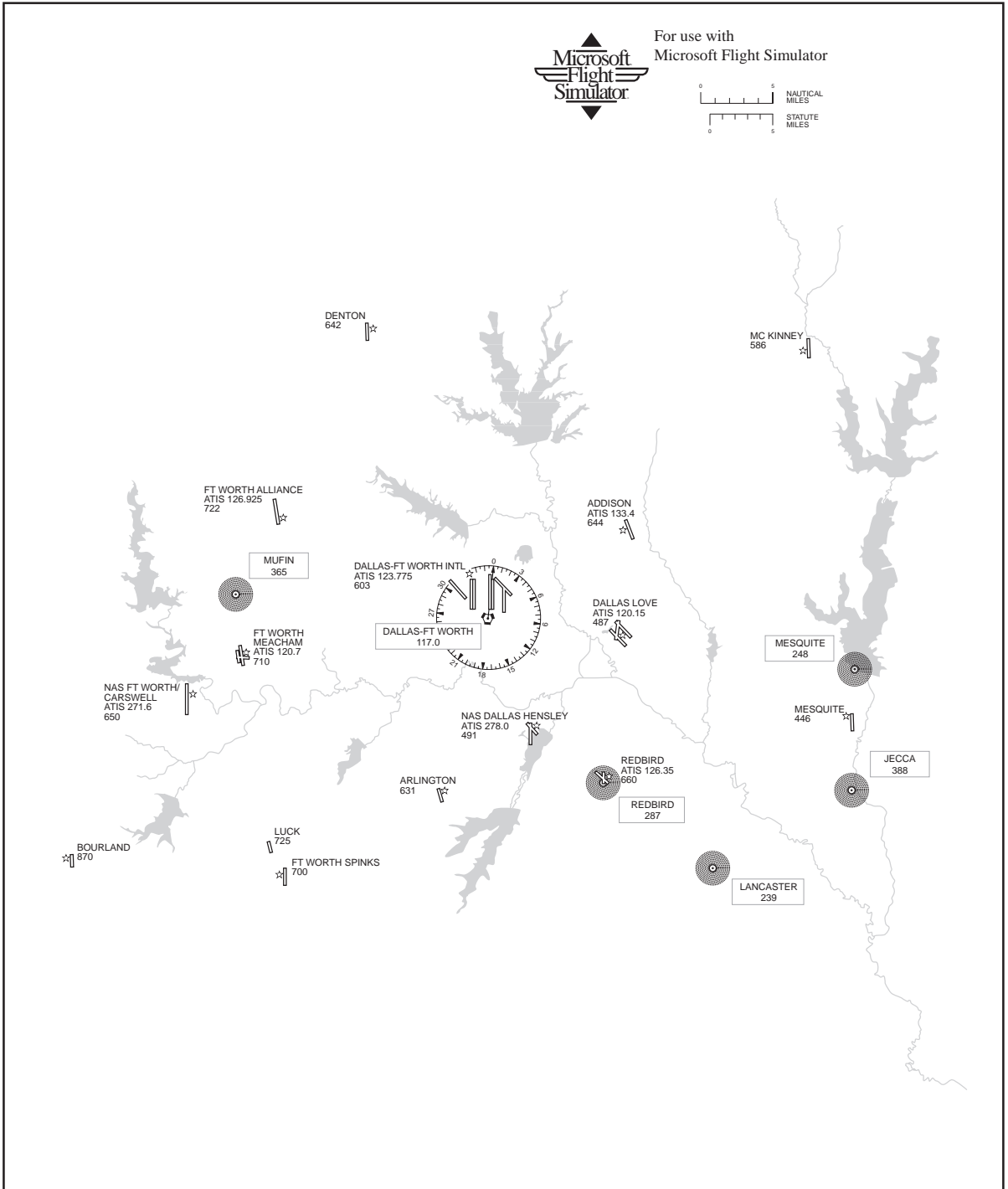
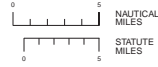
Cleveland



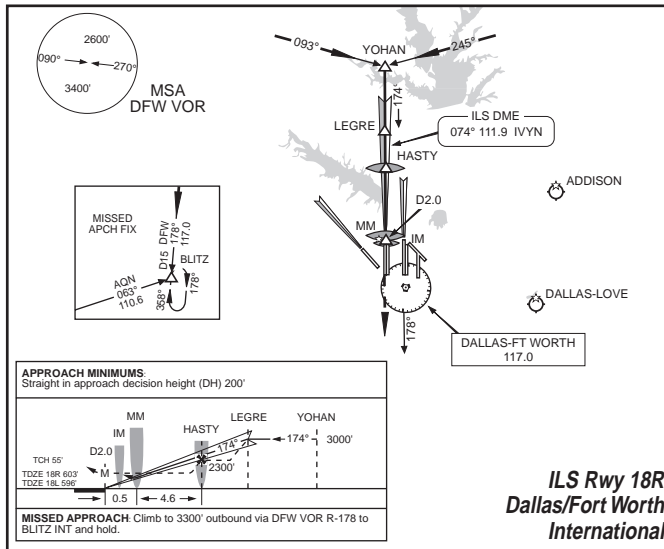
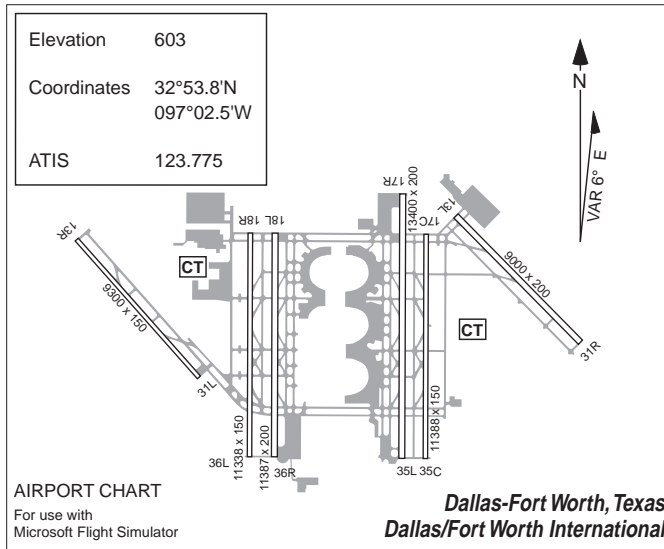
Dallas



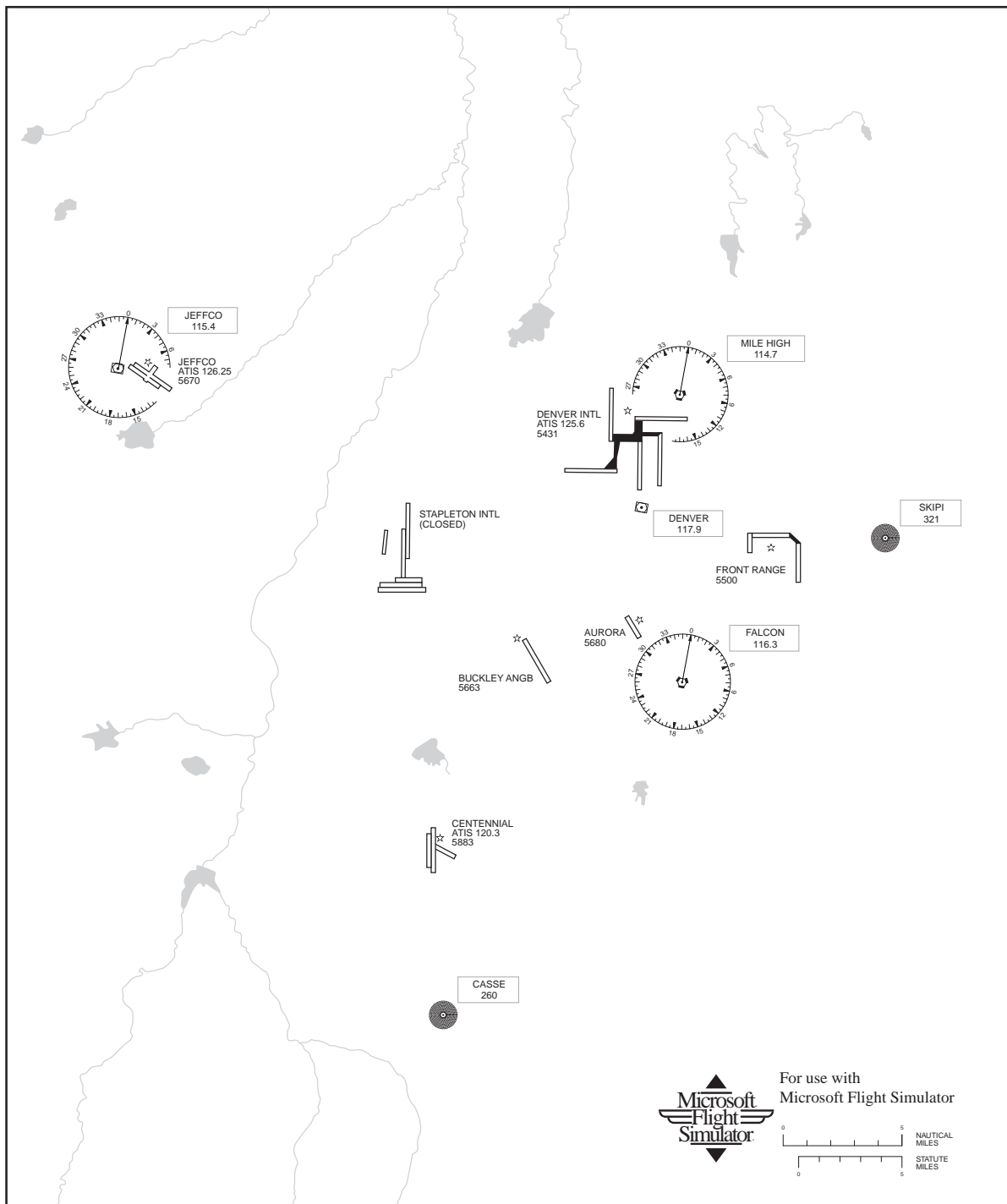
For use with
Microsoft Flight Simulator



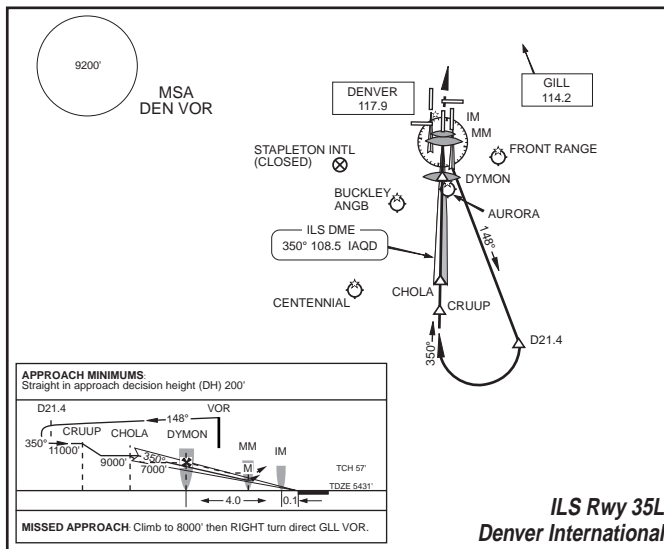
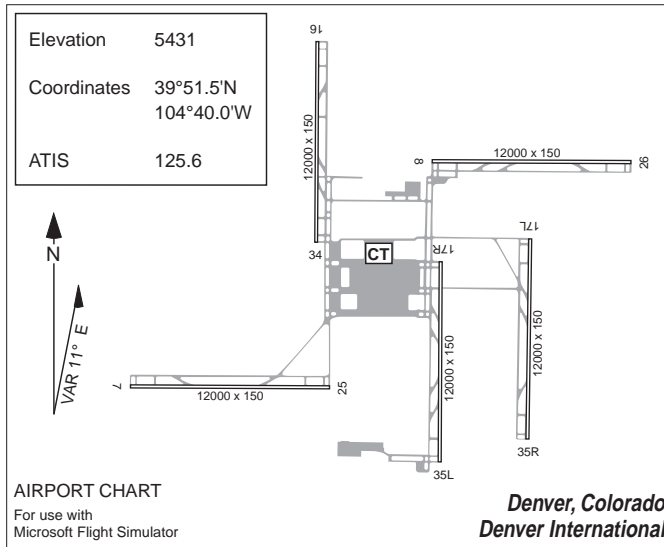
Dallas



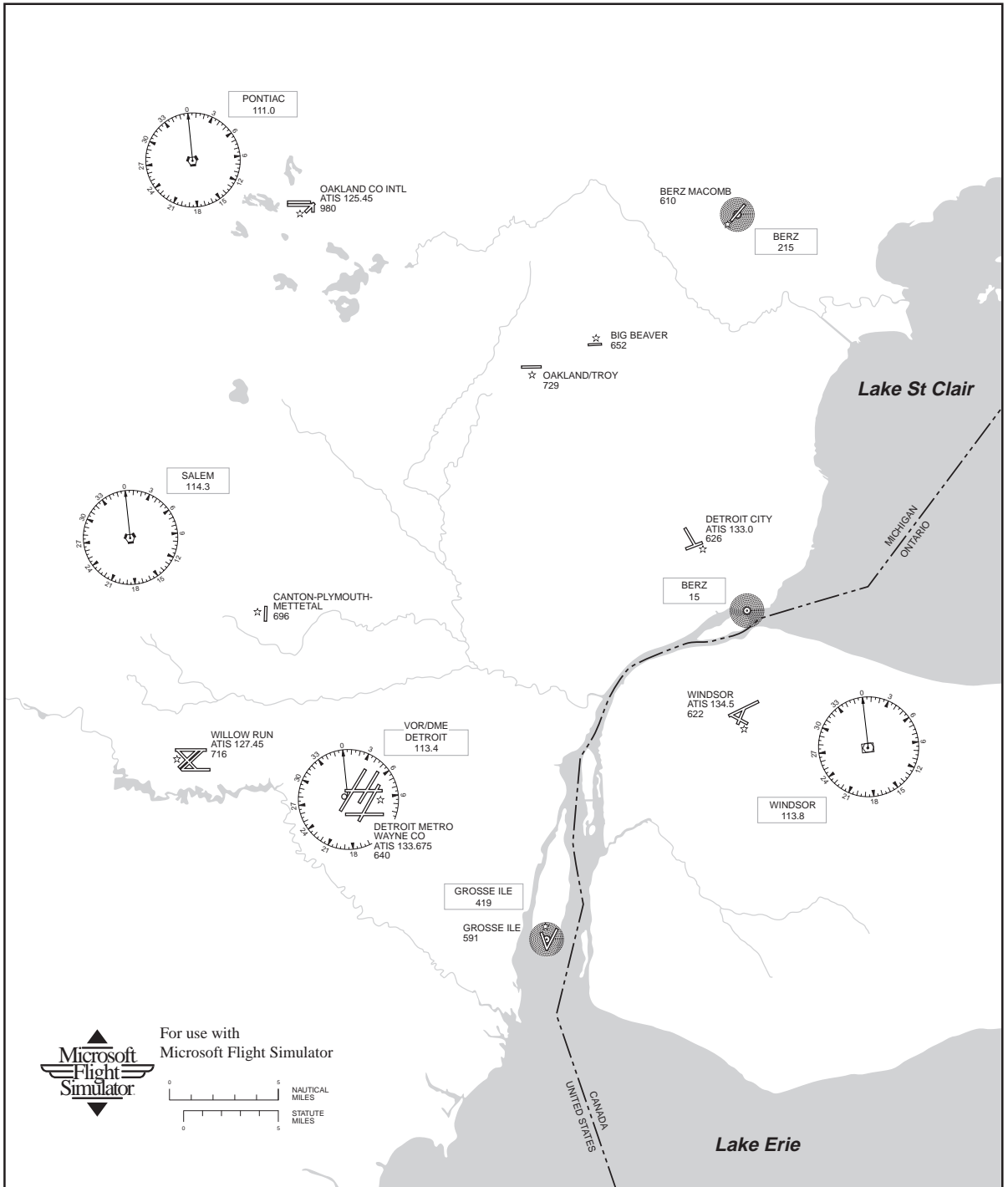
Denver



Denver



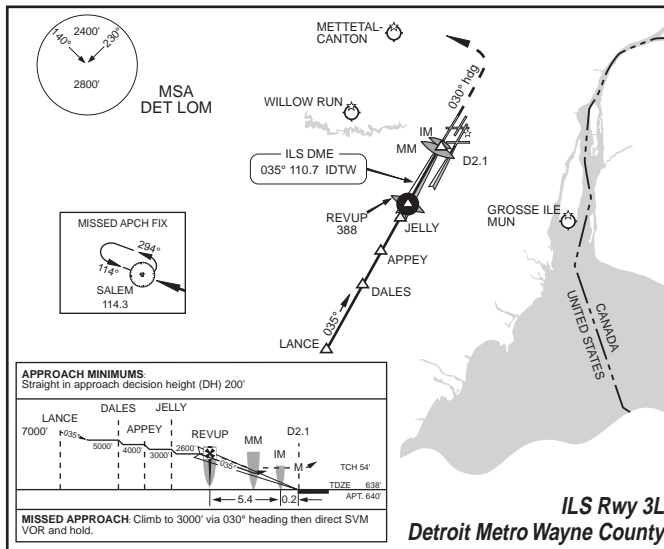
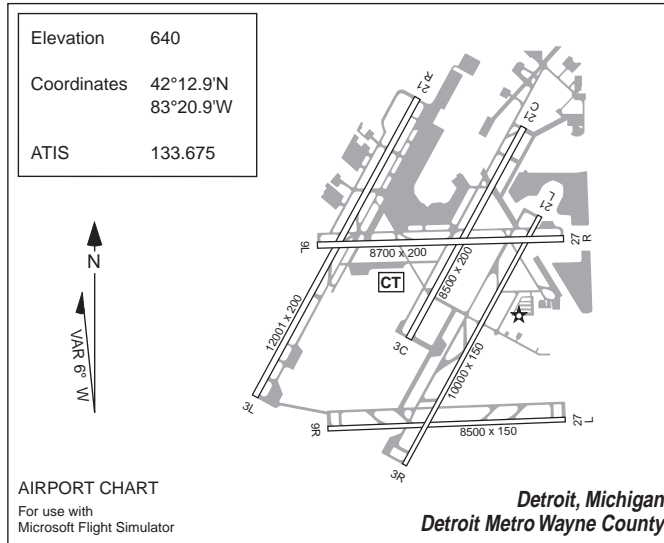
Detroit



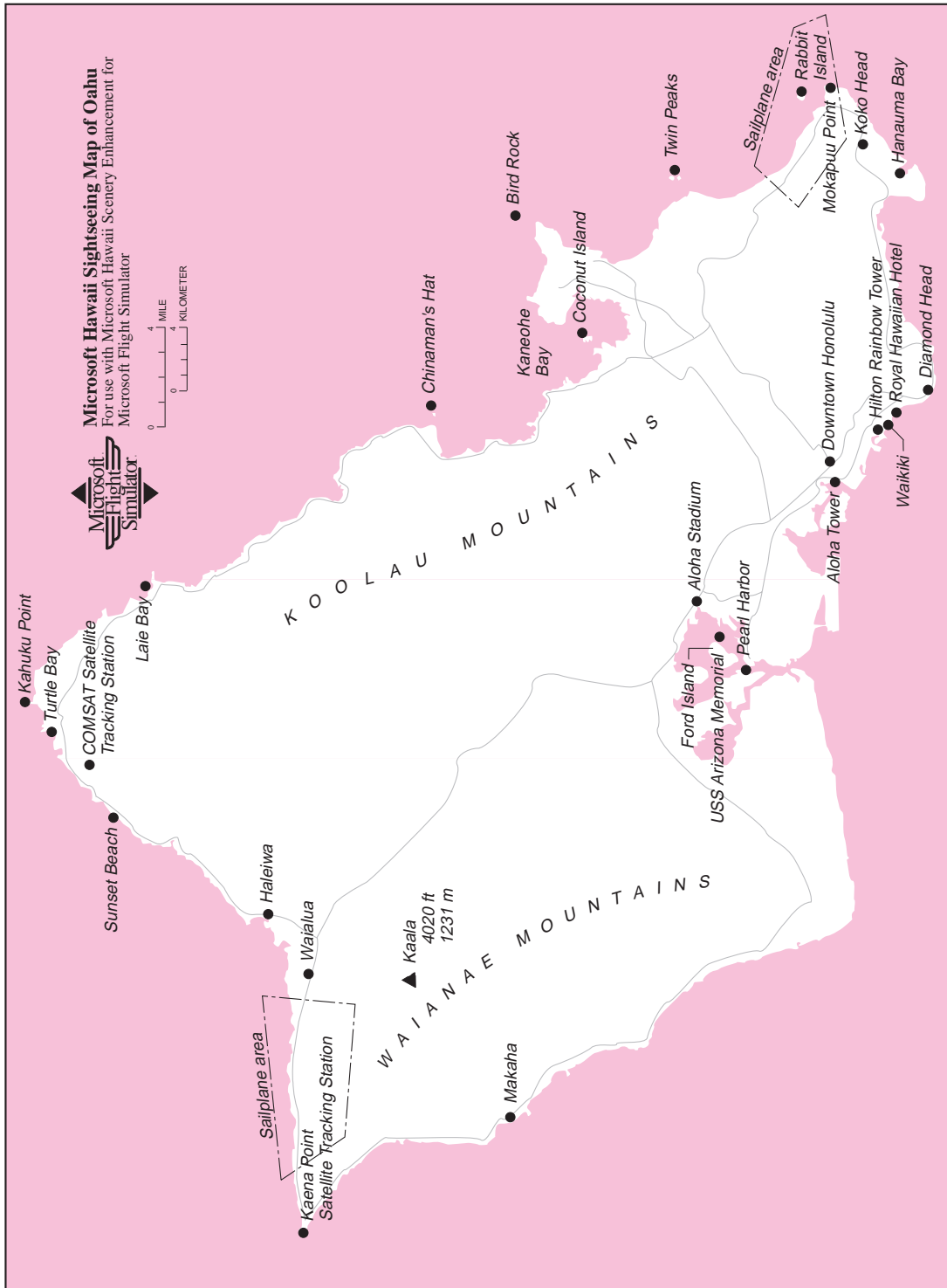
For use with
Microsoft Flight Simulator



Detroit



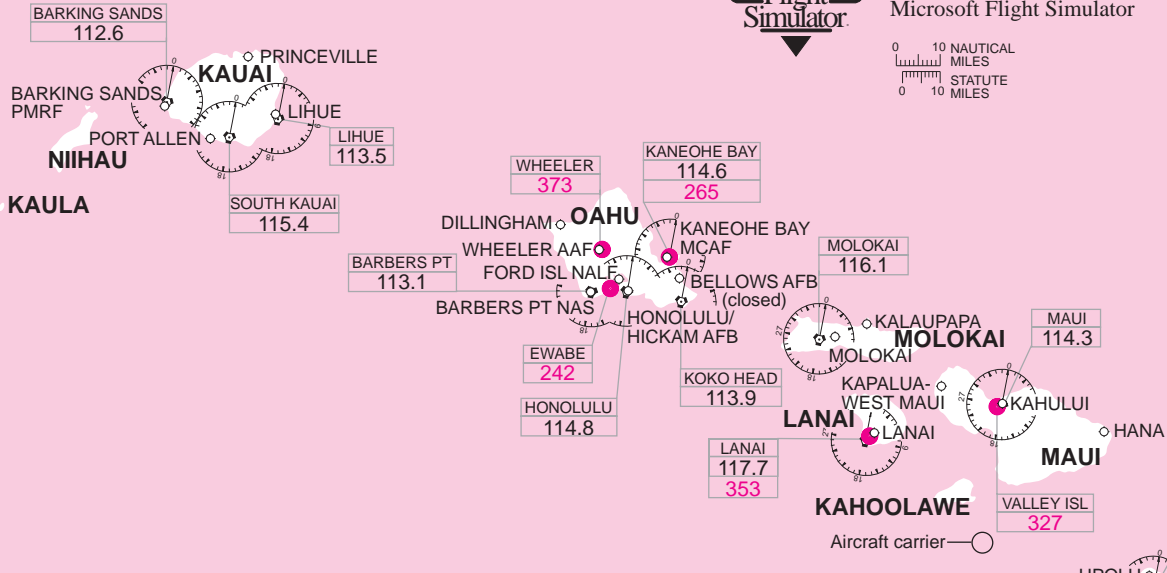
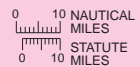
Hawaii — Oahu Sightseeing Map



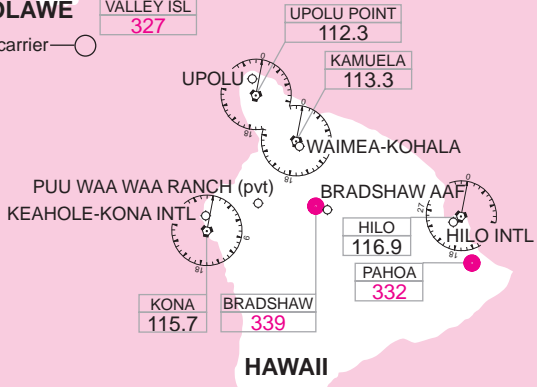
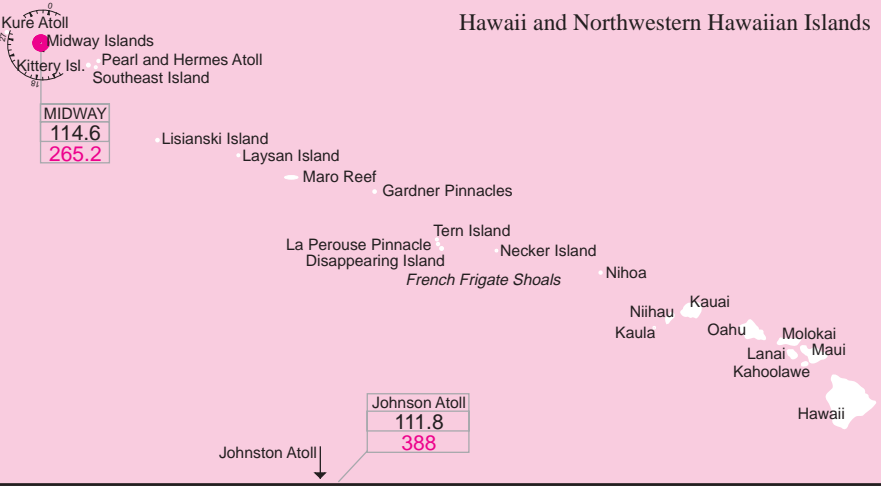


Microsoft Hawaii Sectional

For use with Microsoft Hawaii Scenery Enhancement for Microsoft Flight Simulator

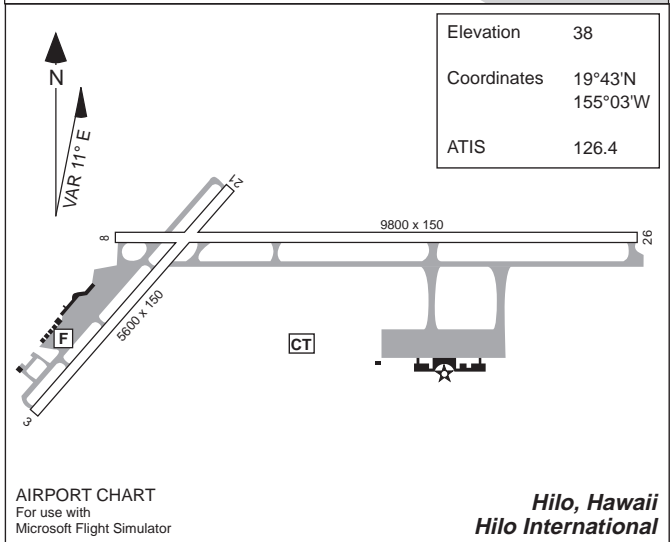
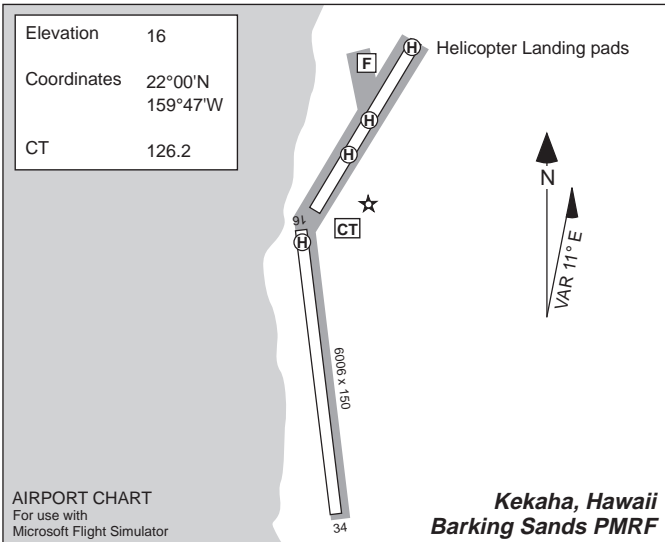
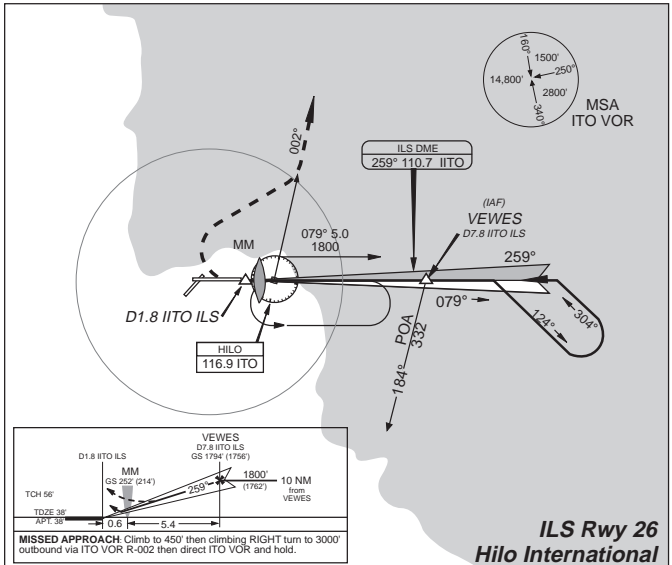
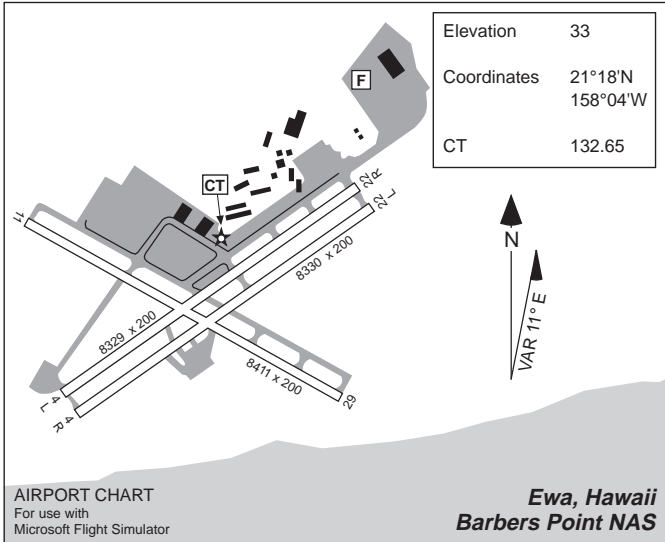


Hawaii and Northwestern Hawaiian Islands

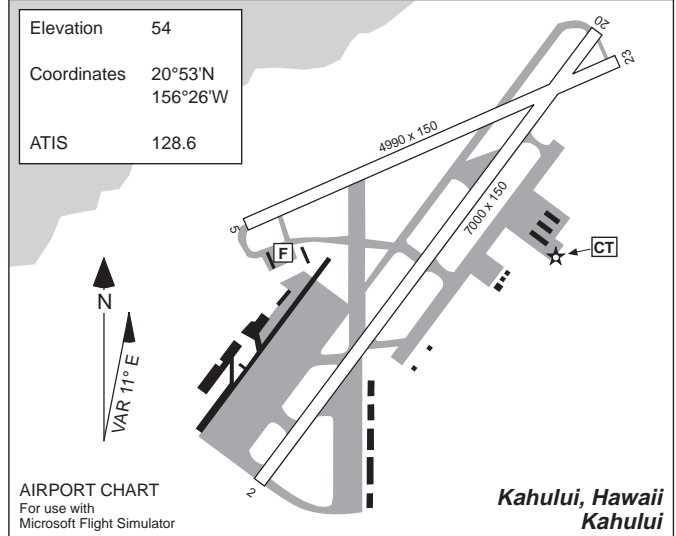
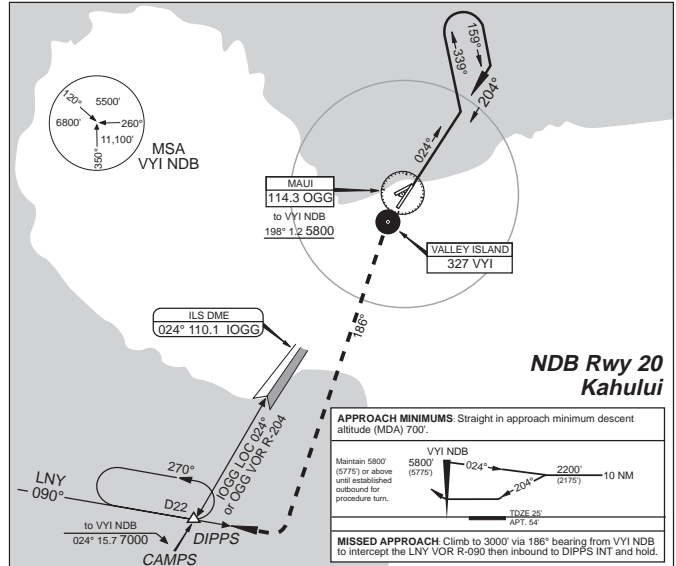
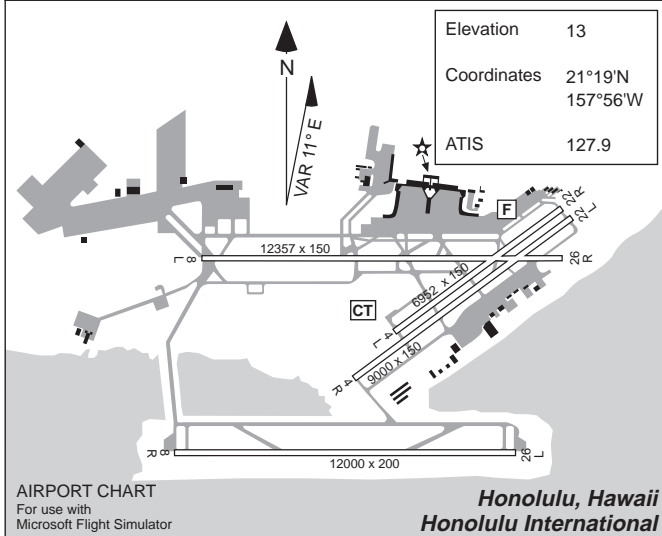
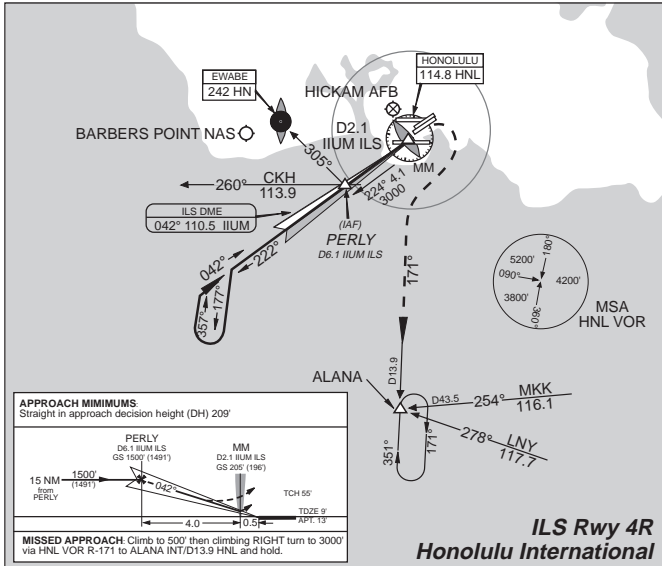


Hawaii Sectional

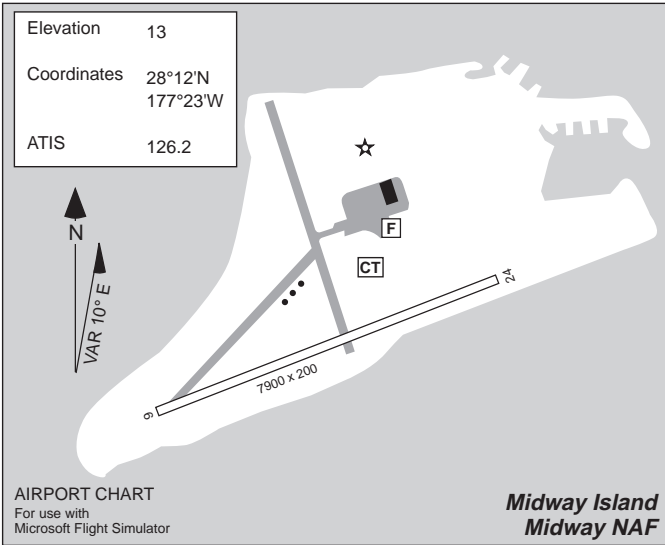
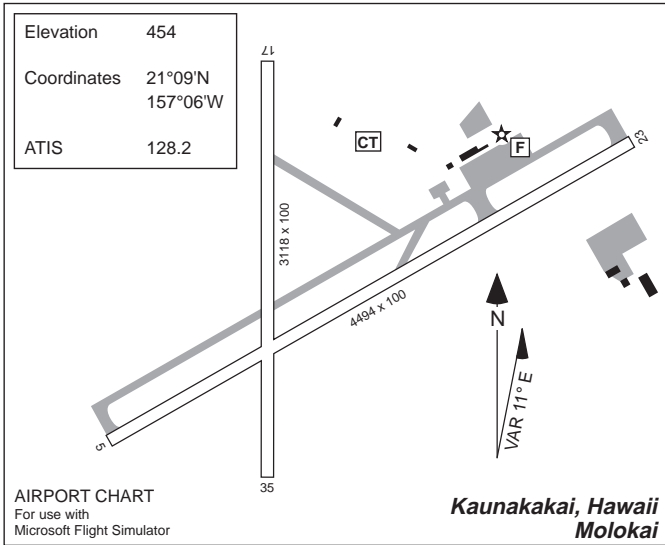
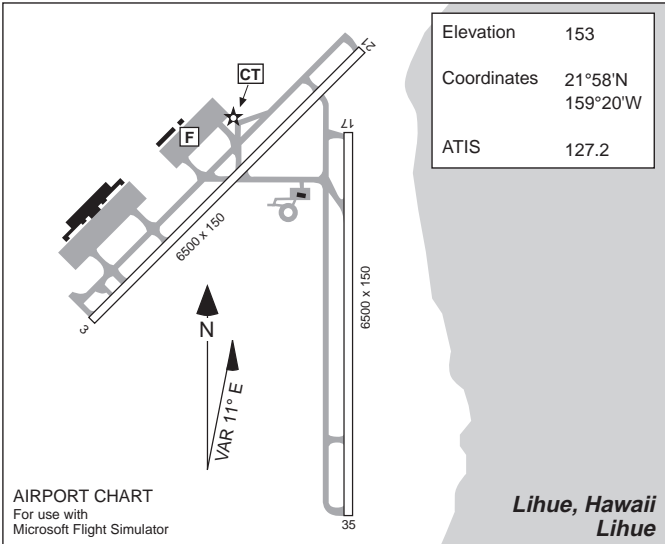
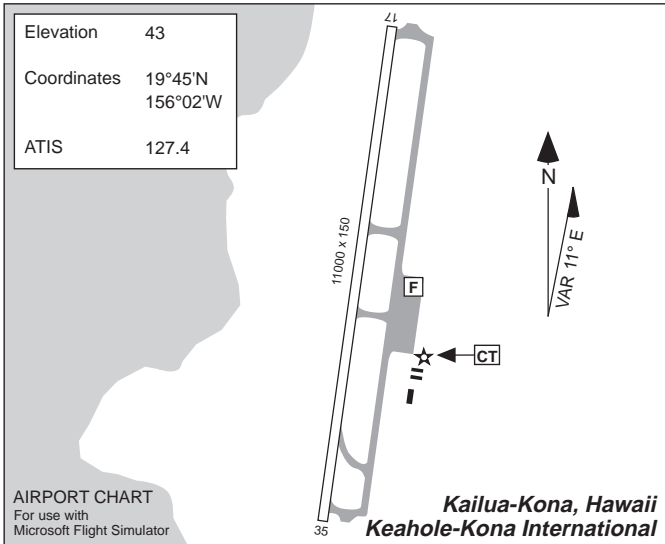
Hawaii Major Airports



Hawaii Major Airports



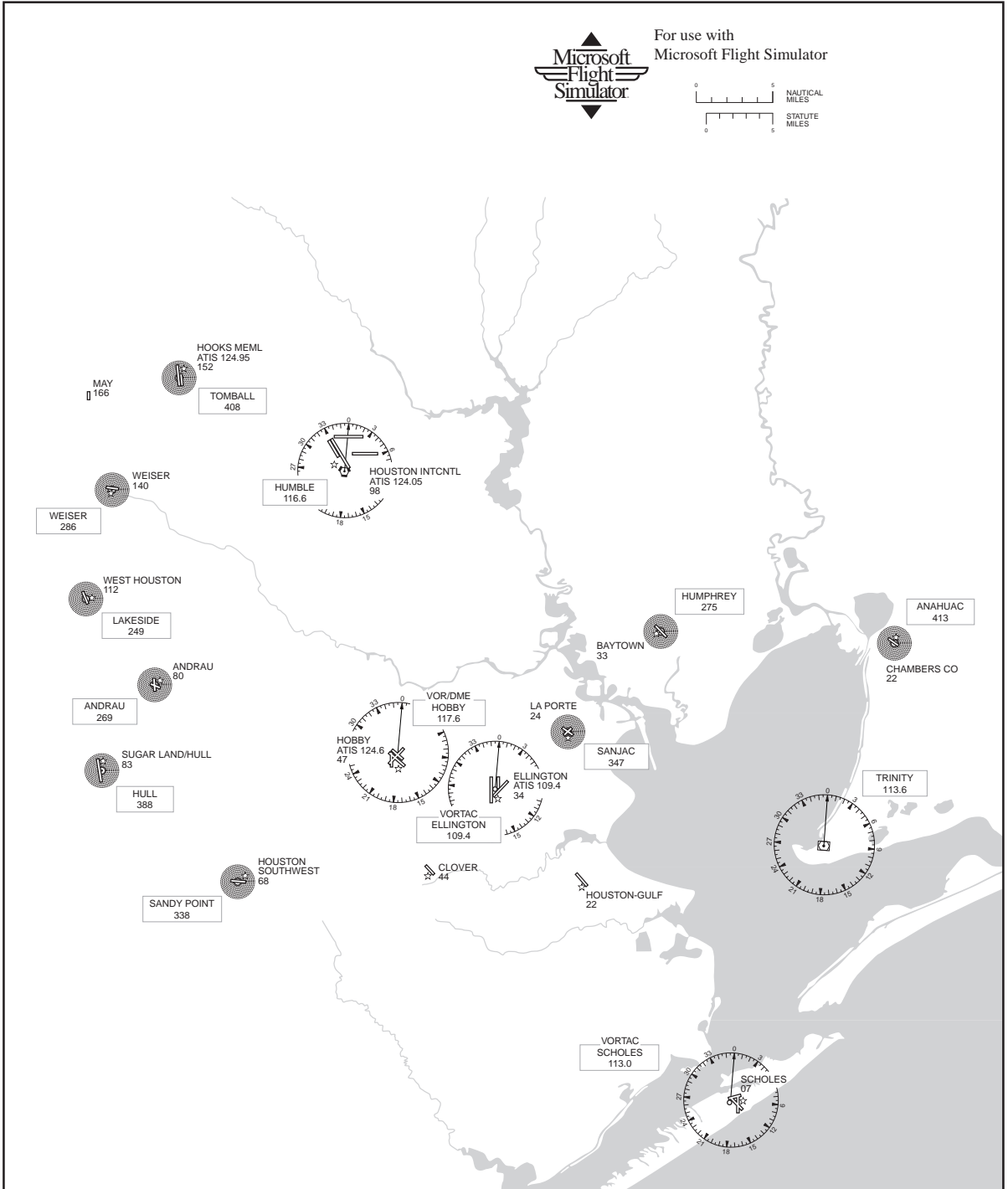
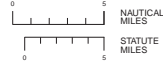
Hawaii Major Airports



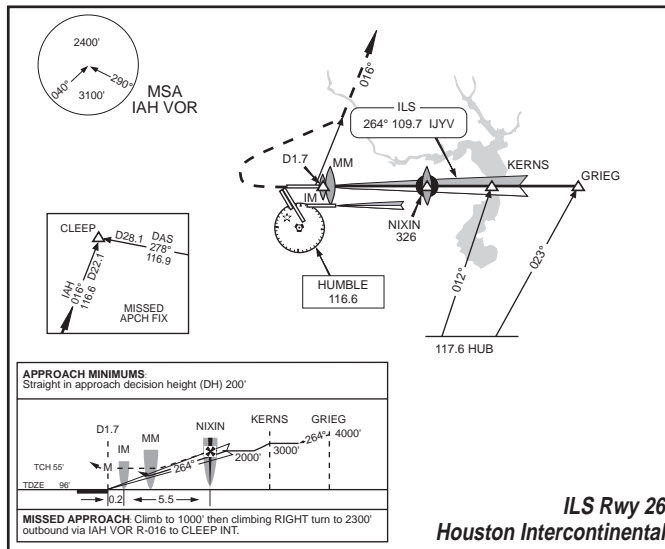
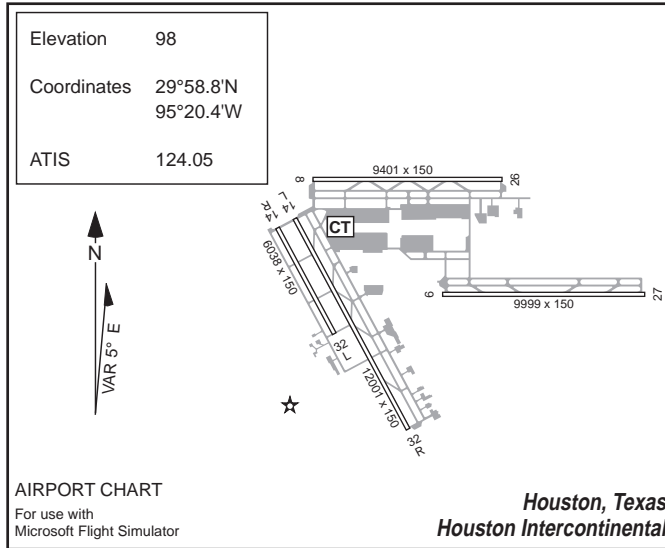
Houston



For use with
Microsoft Flight Simulator



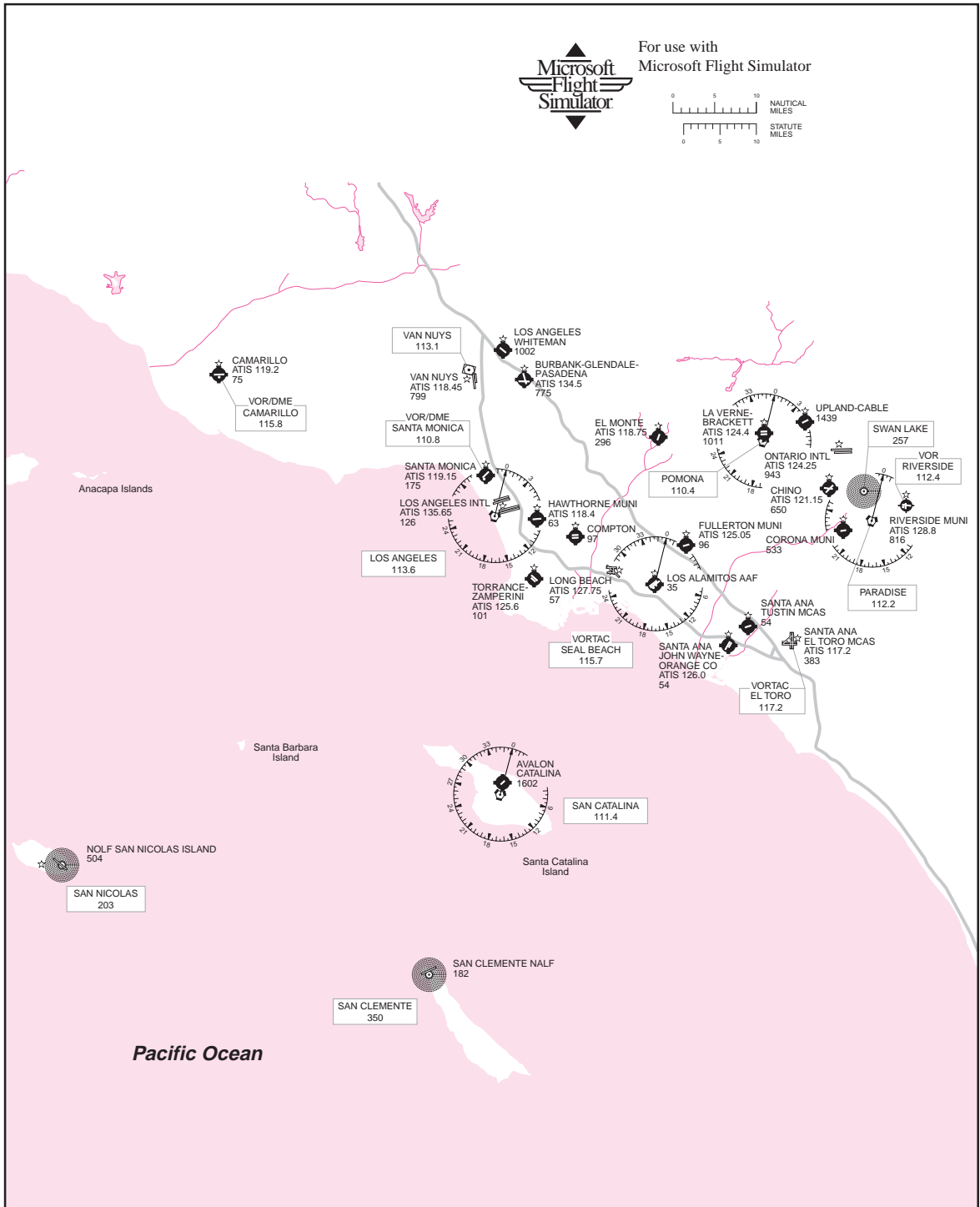
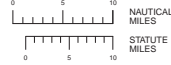
Houston



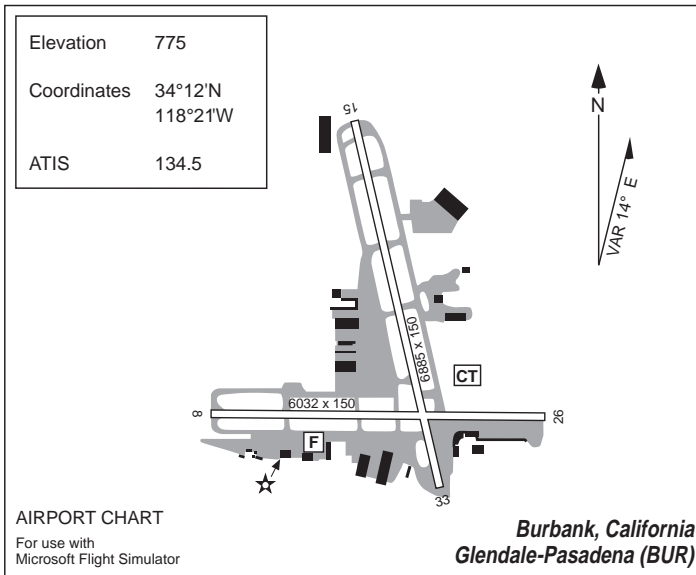
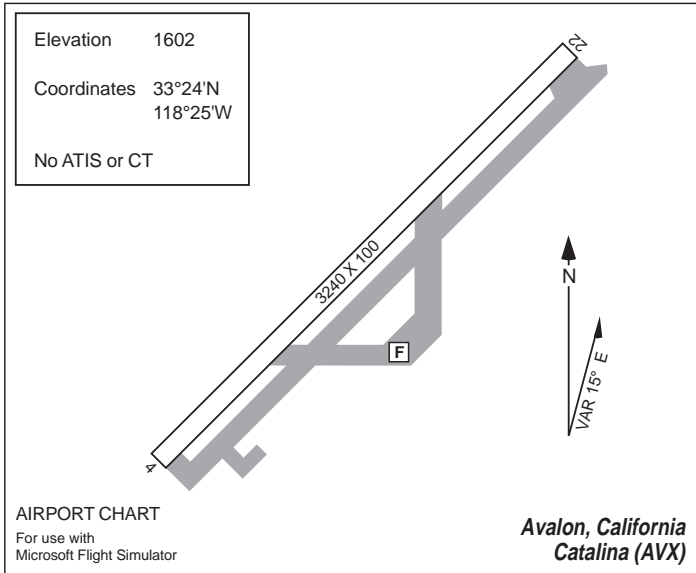
Los Angeles Area



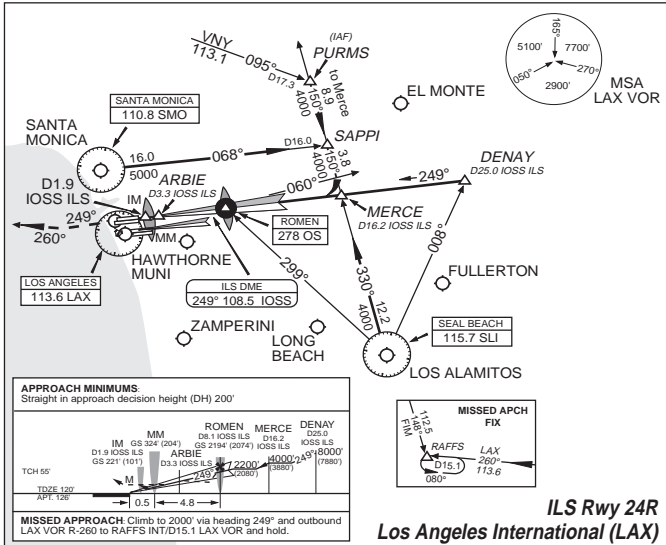
For use with
Microsoft Flight Simulator



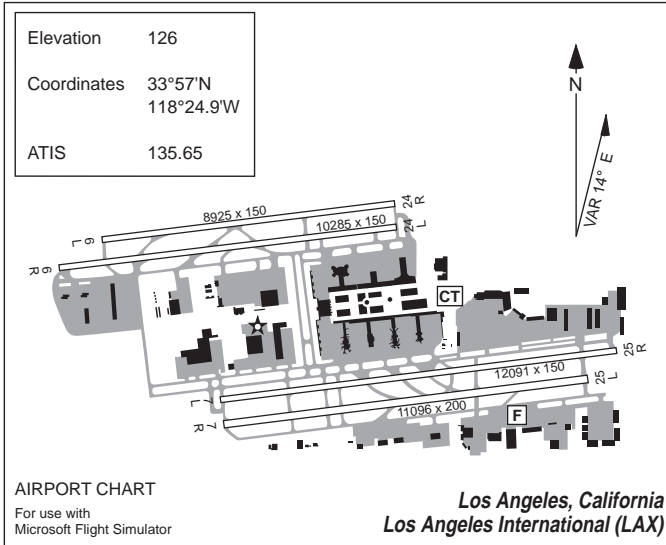
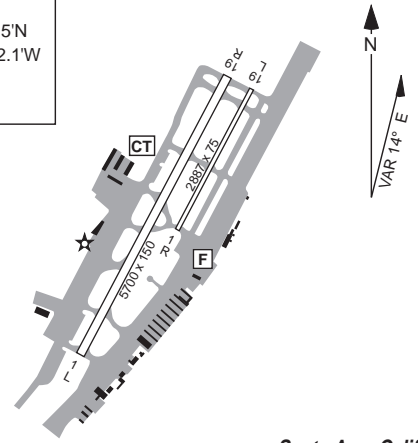
Los Angeles Area



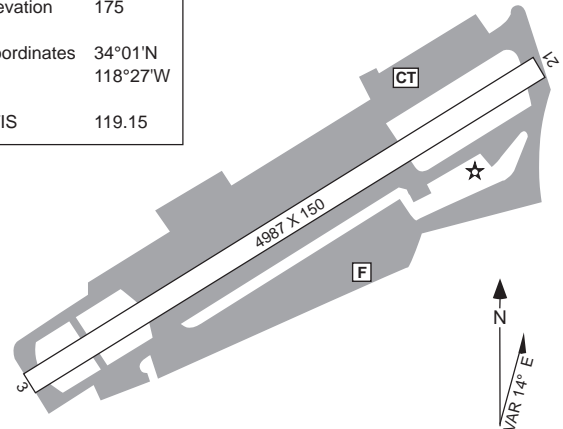
Los Angeles Area



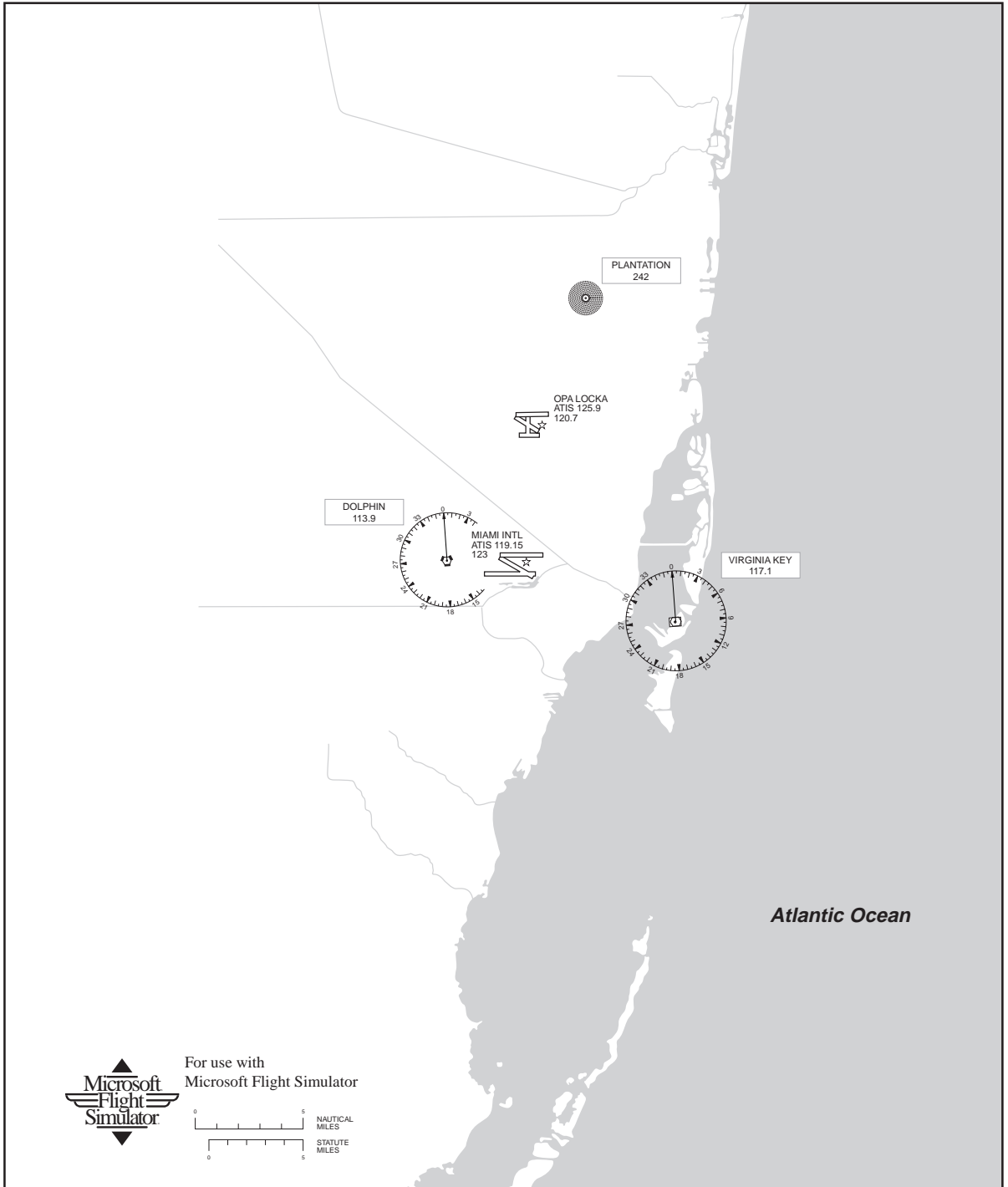
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Coordinates	33°40.5'N 117°52.1'W
ATIS	126.0



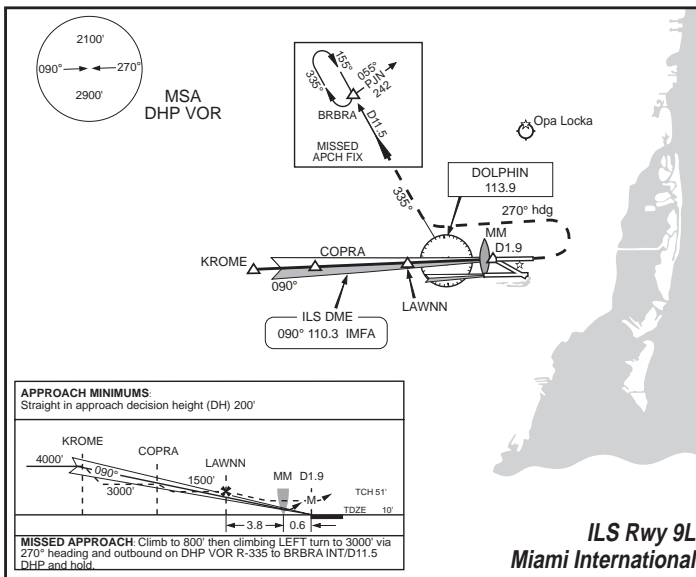
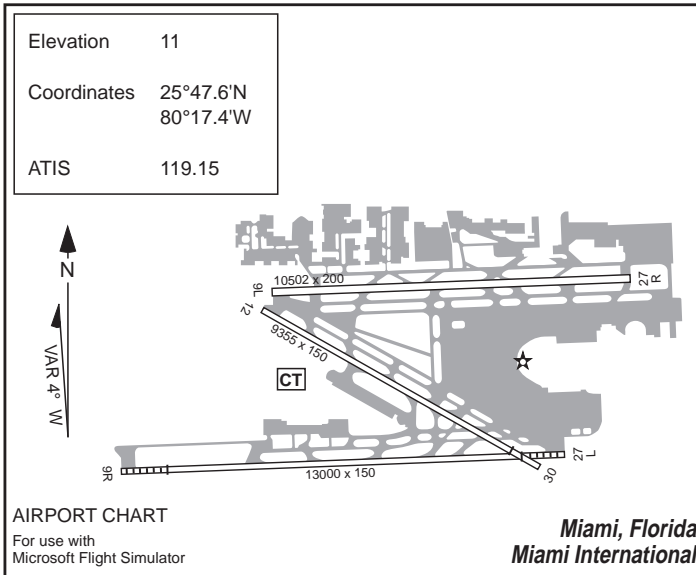
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ATIS	119.15



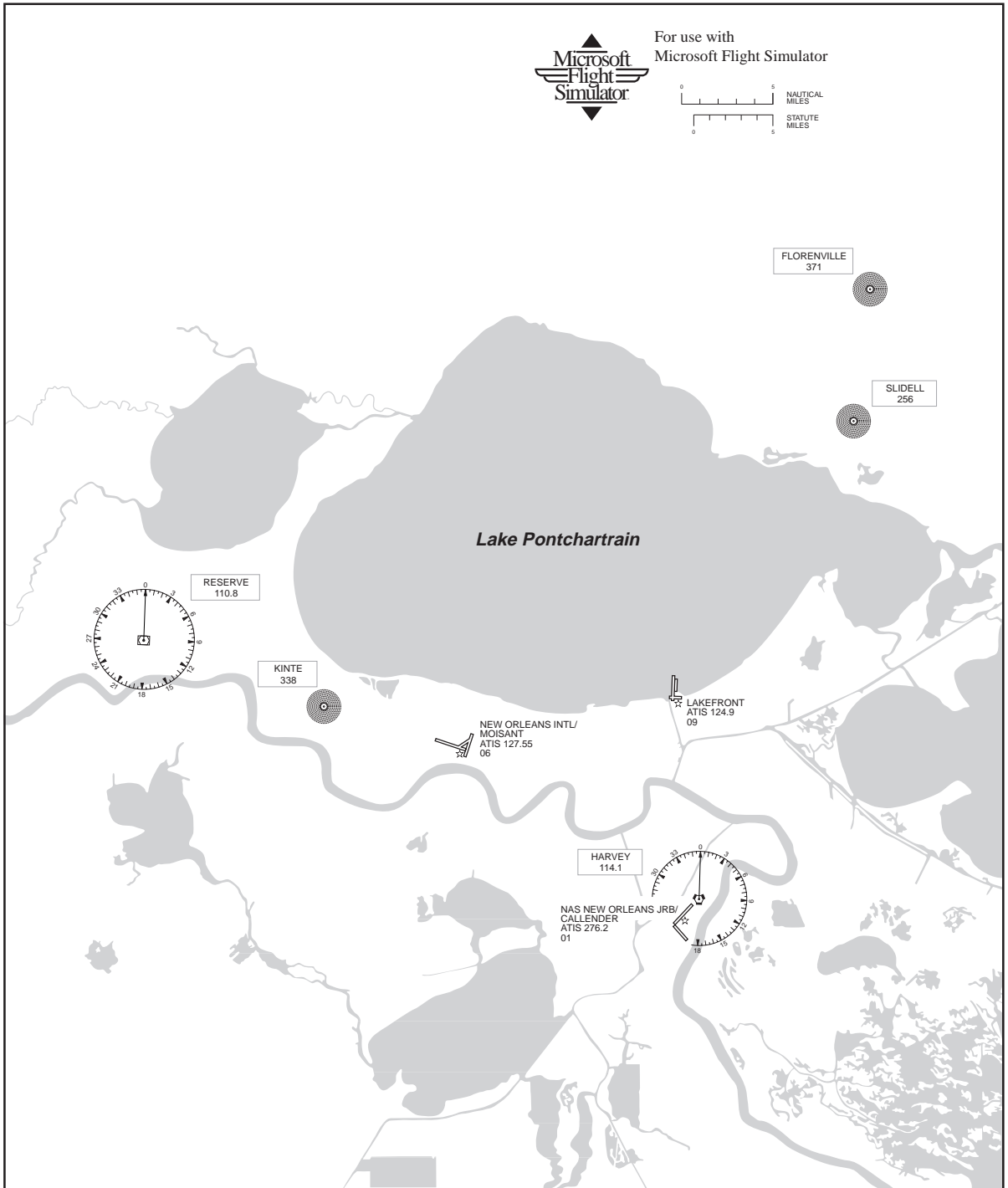
Miami



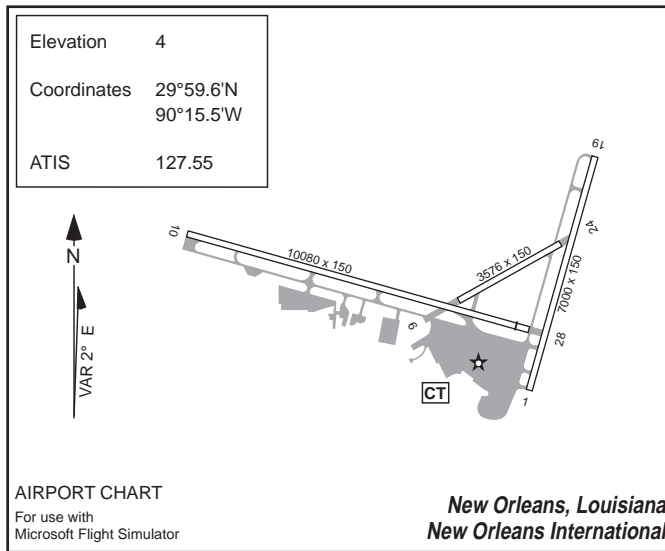
Miami



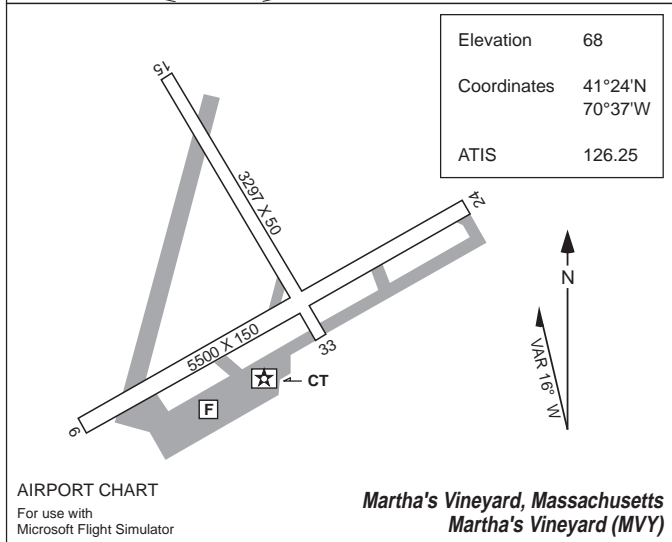
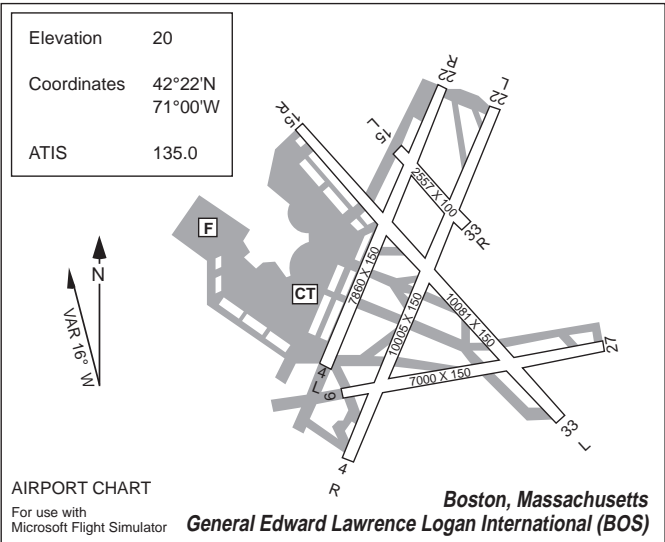
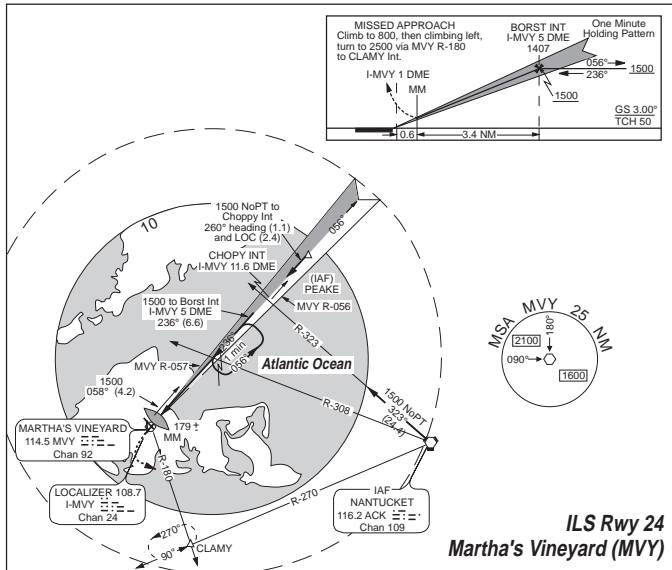
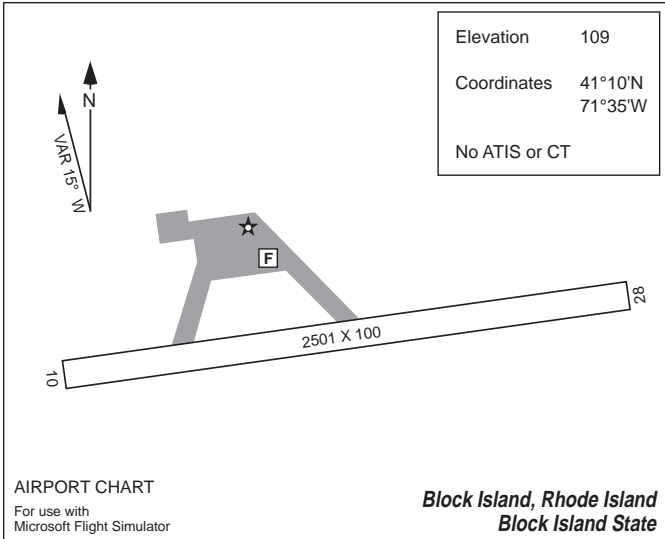
New Orleans



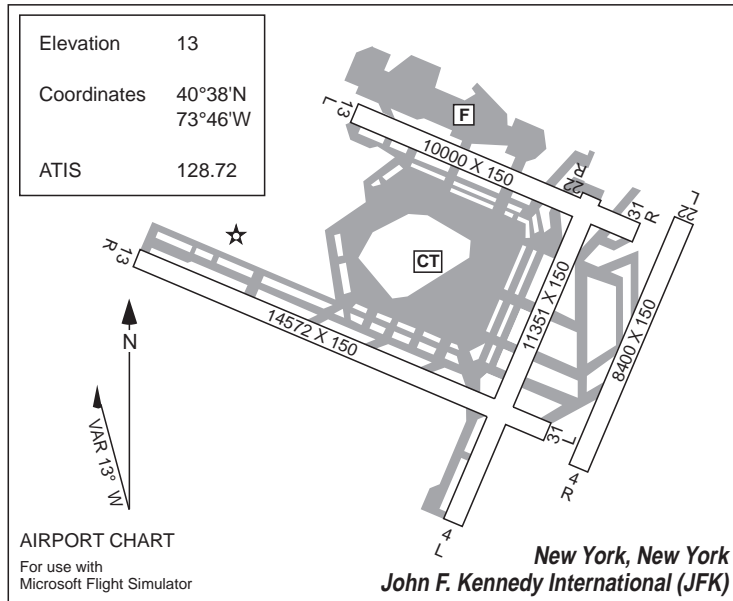
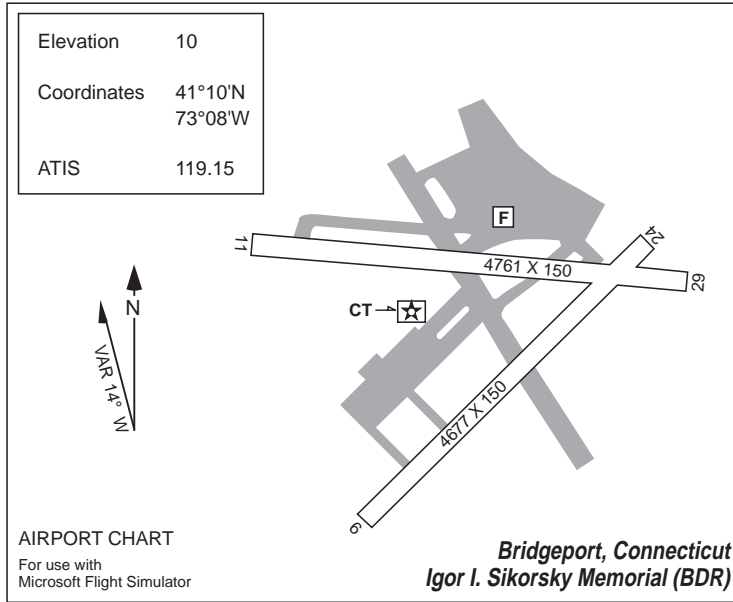
New Orleans



New York



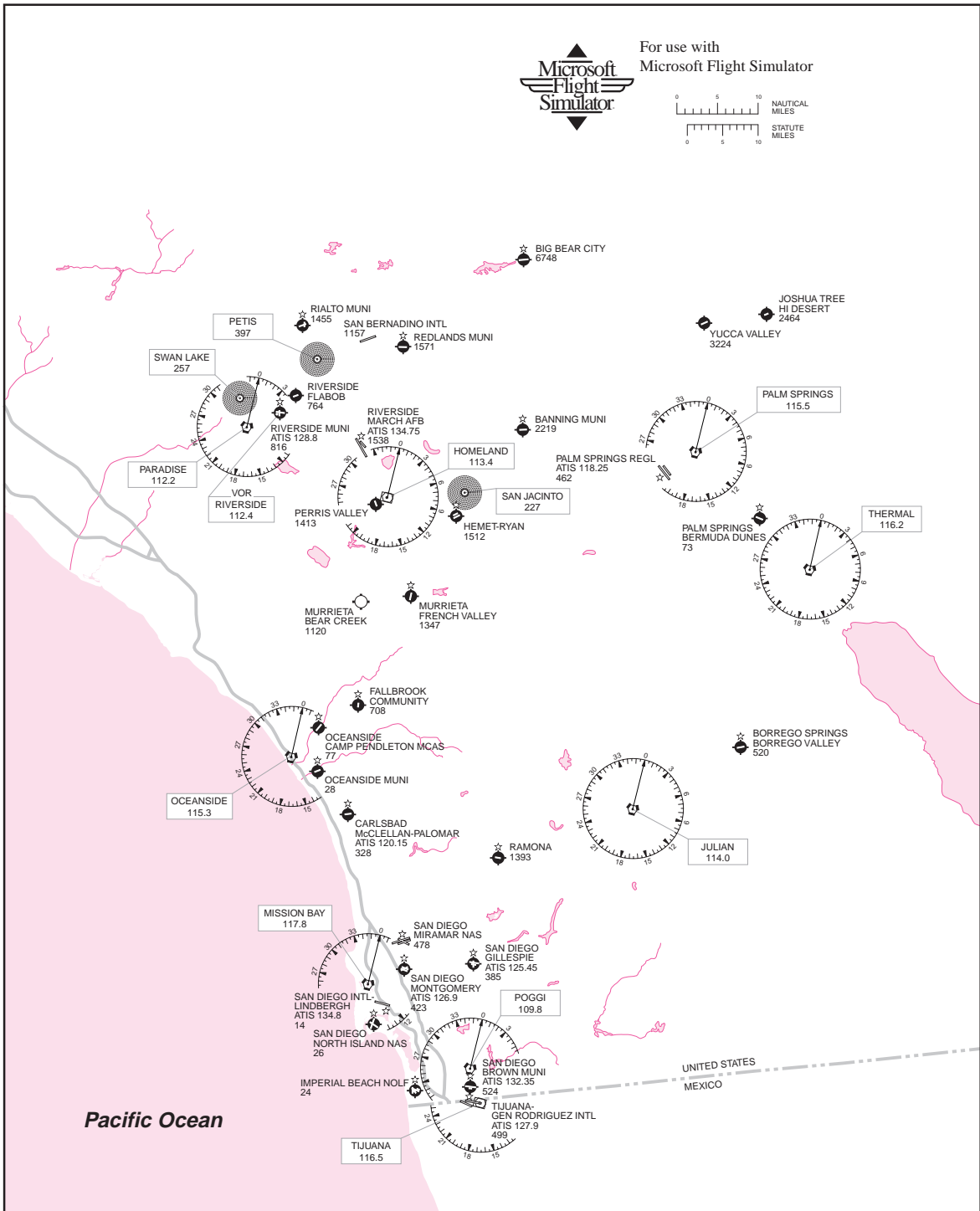
New York



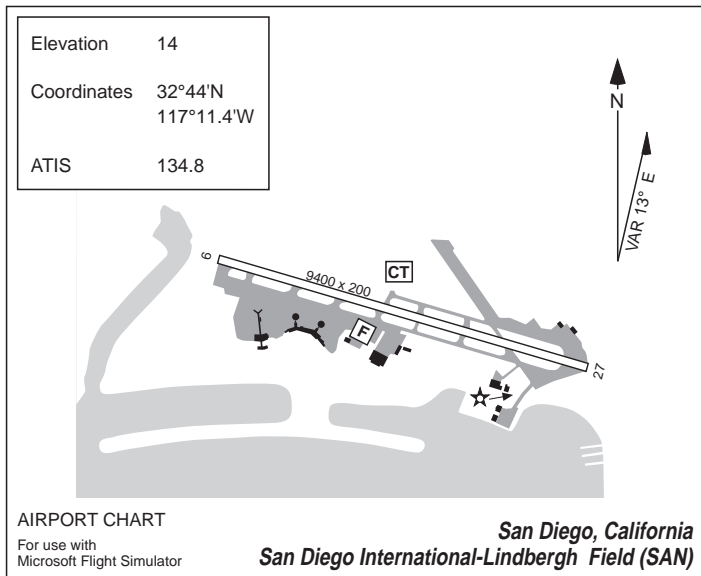
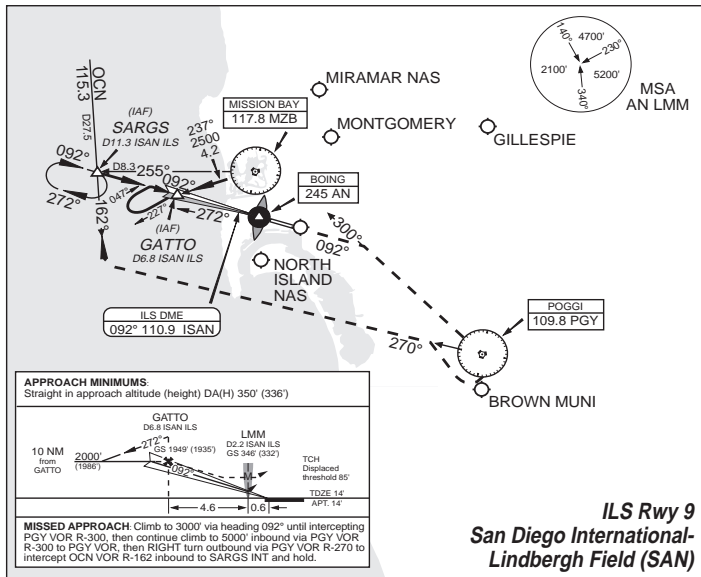
San Diego



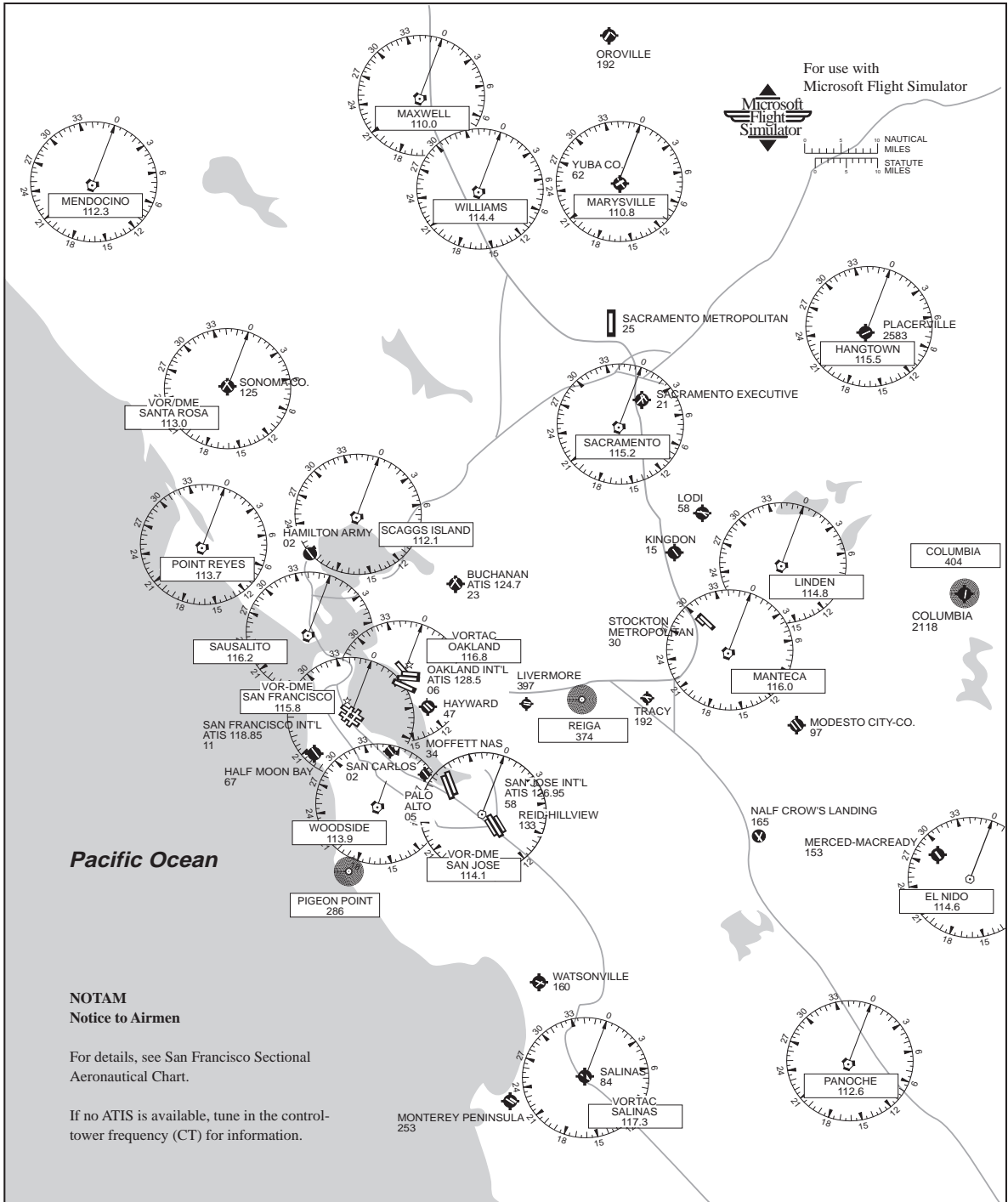
For use with
Microsoft Flight Simulator



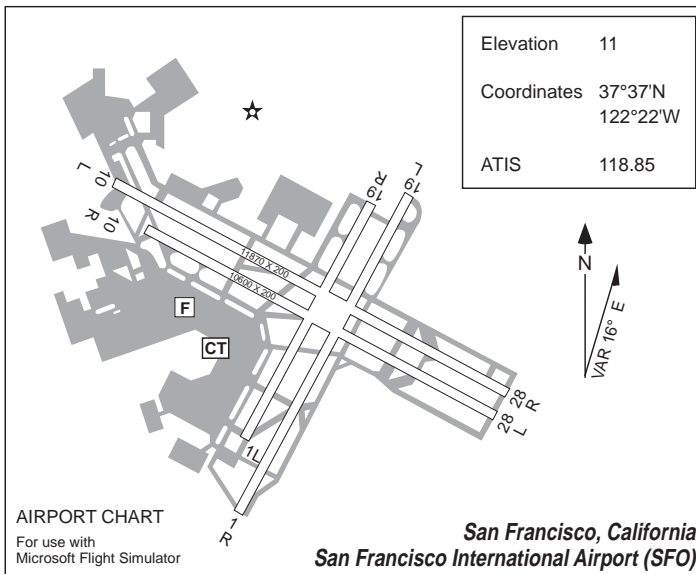
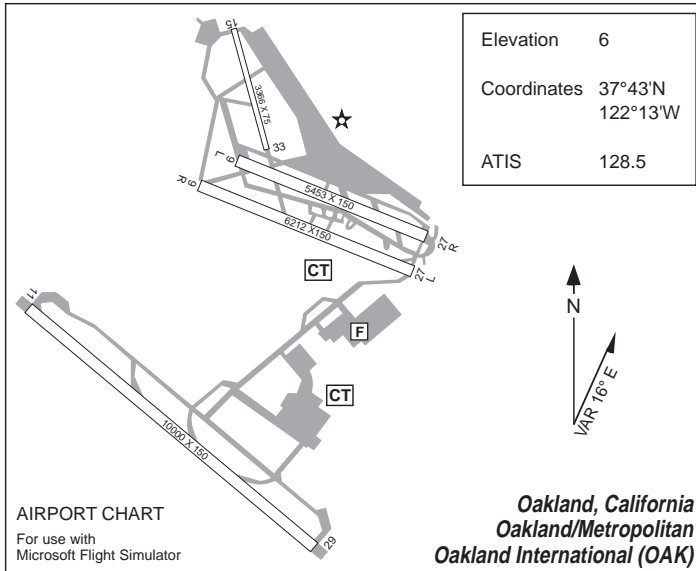
San Diego



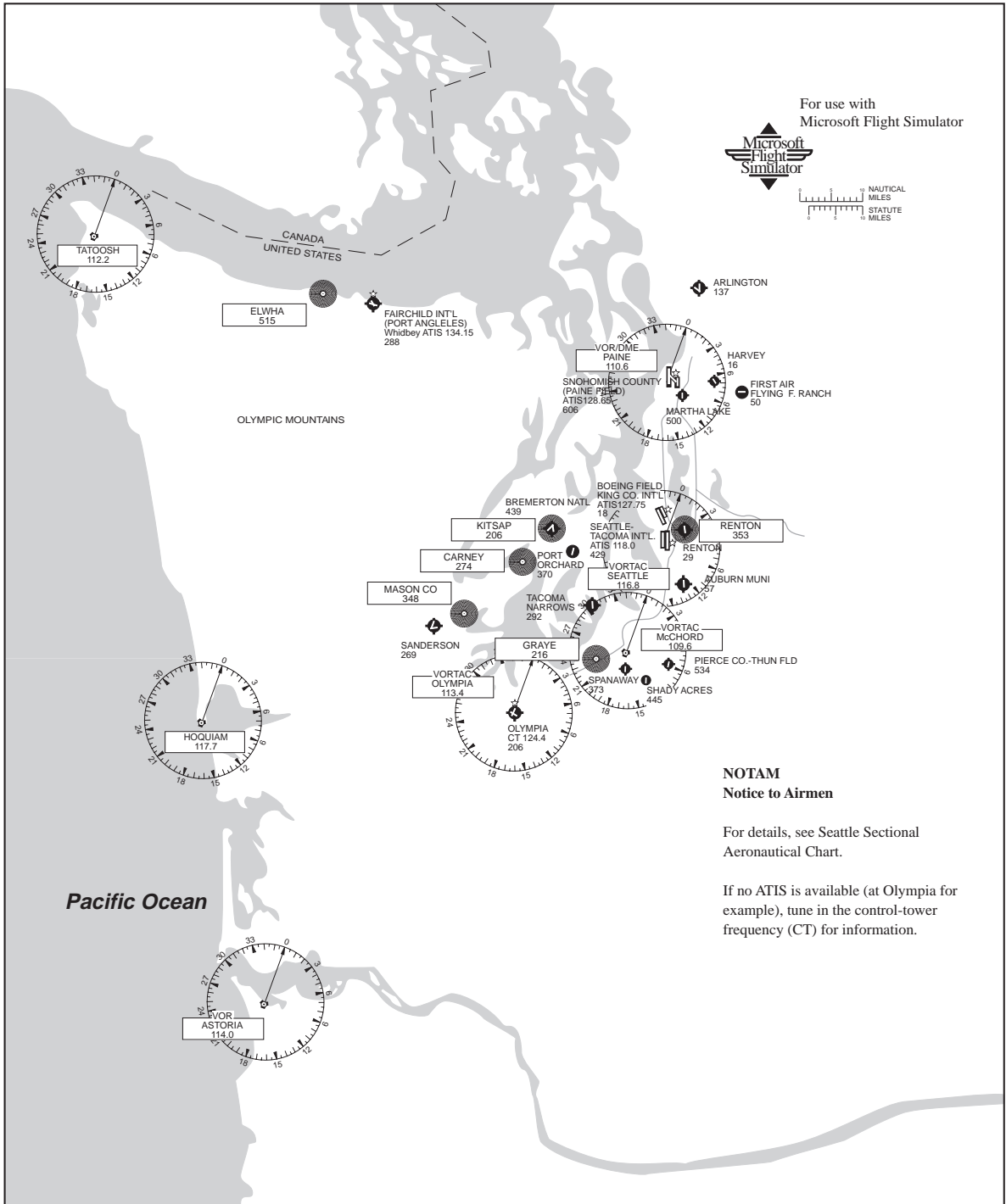
San Francisco



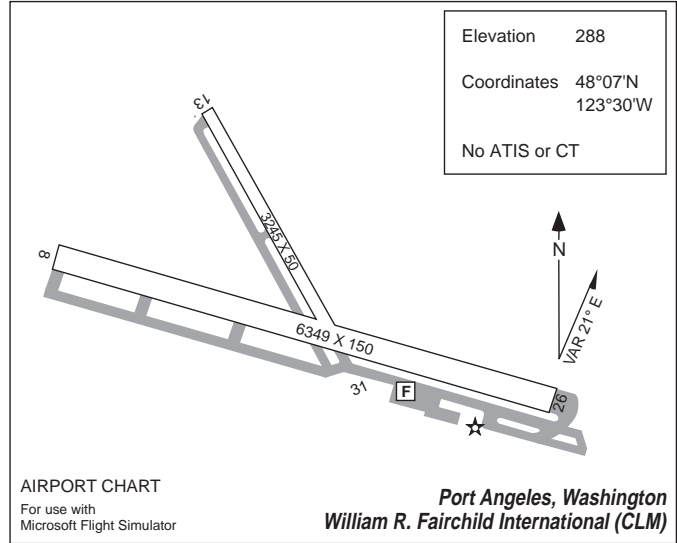
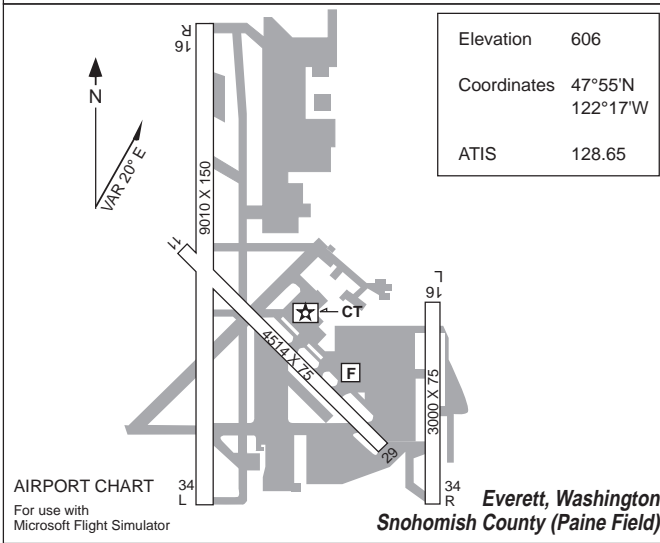
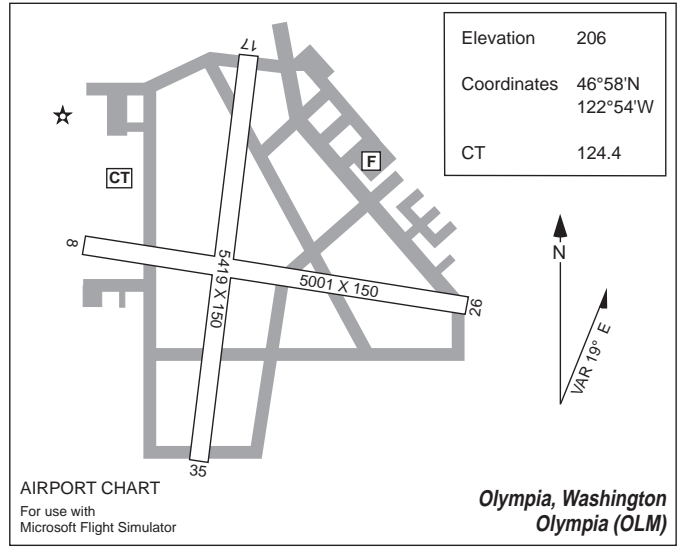
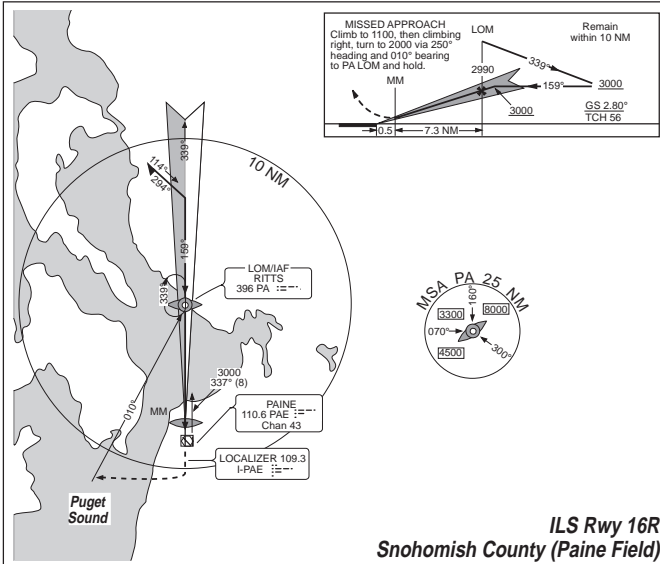
San Francisco



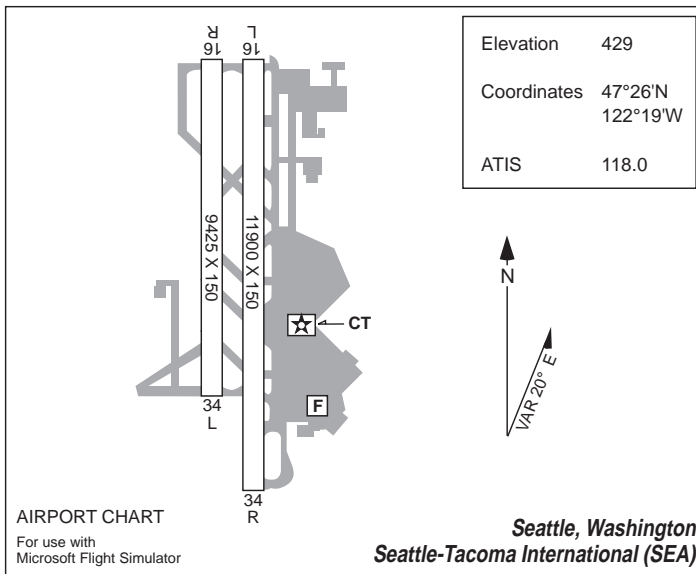
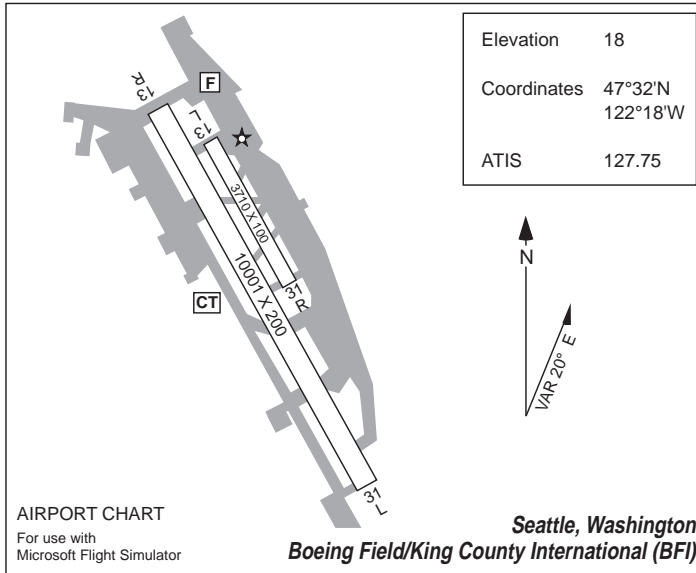
Seattle



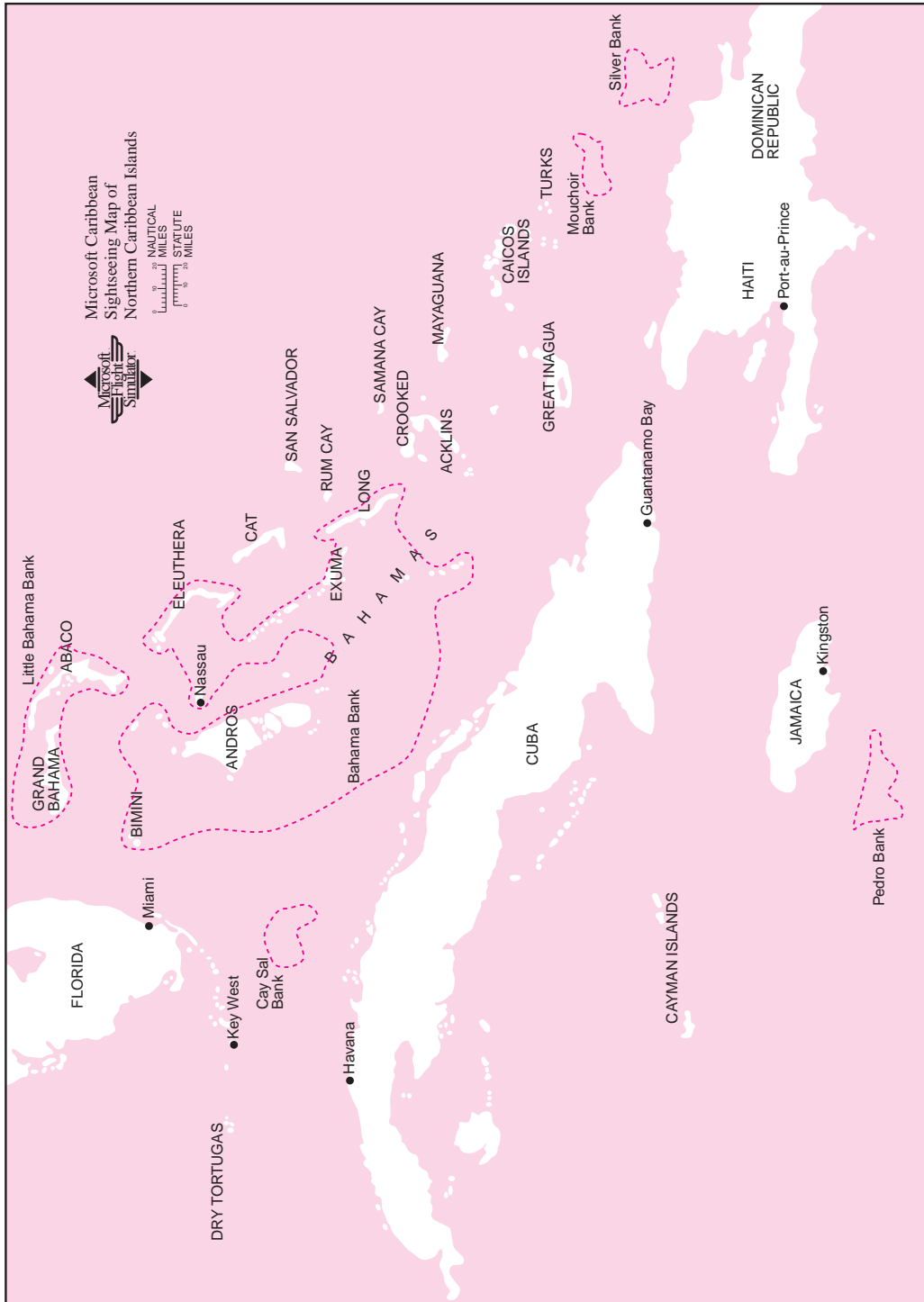
Seattle



Seattle



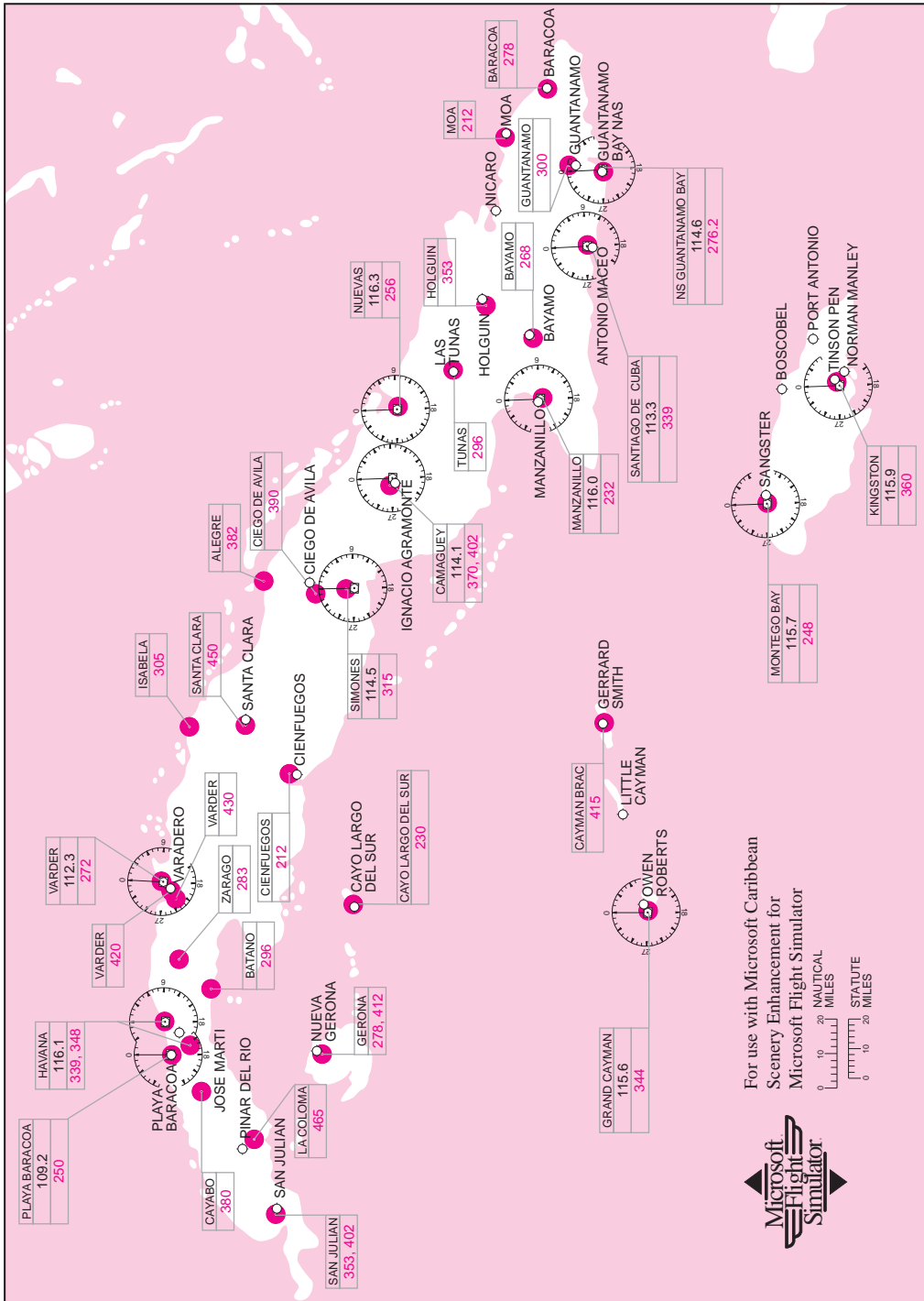
Caribbean — Northern Area Sightseeing Map



Caribbean — Southern Area Sightseeing Map



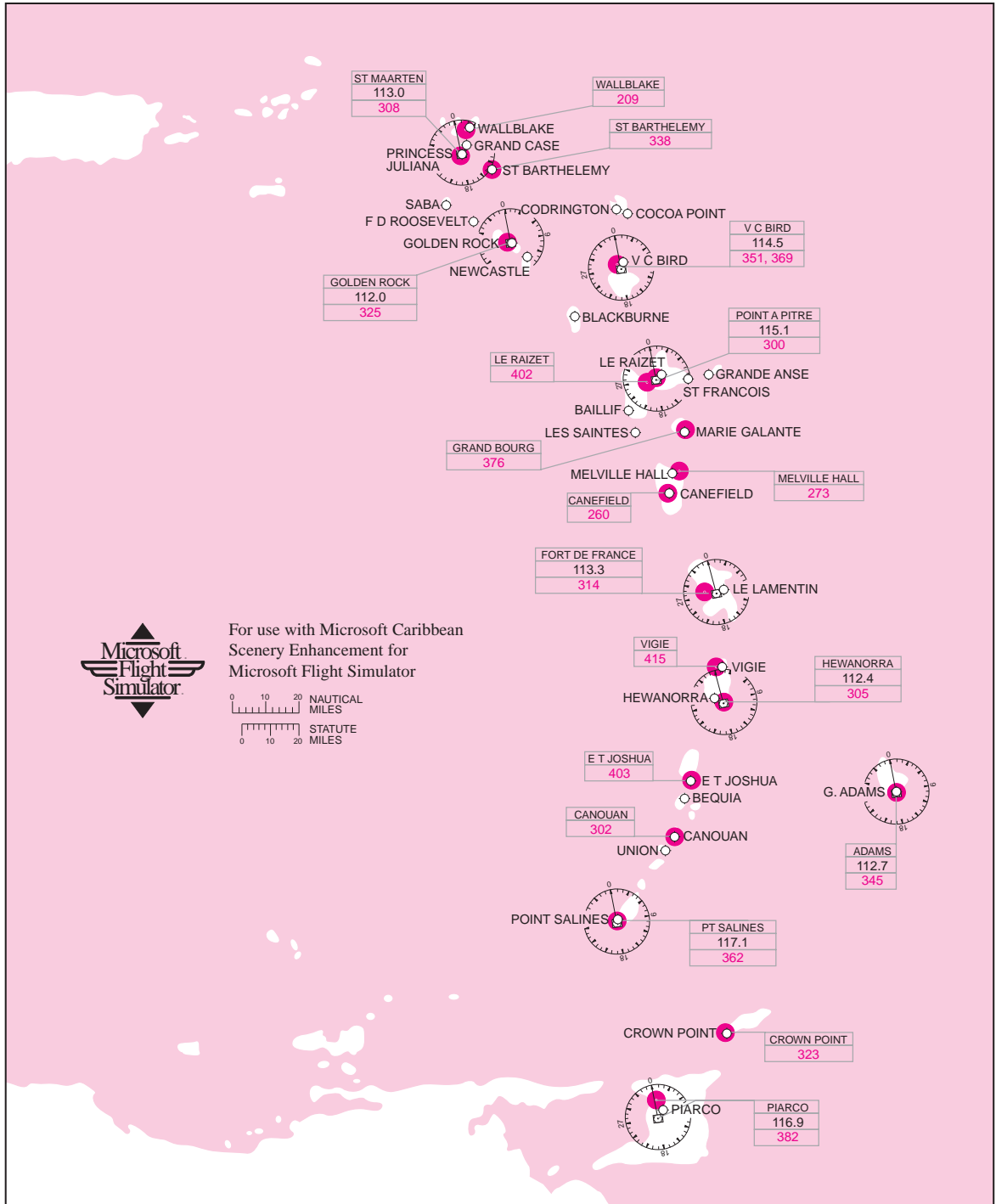
Caribbean Sectional — Cuba, Jamaica



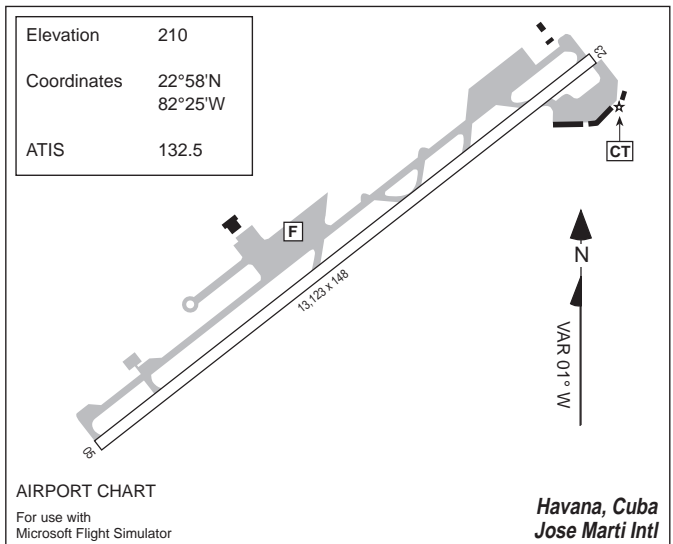
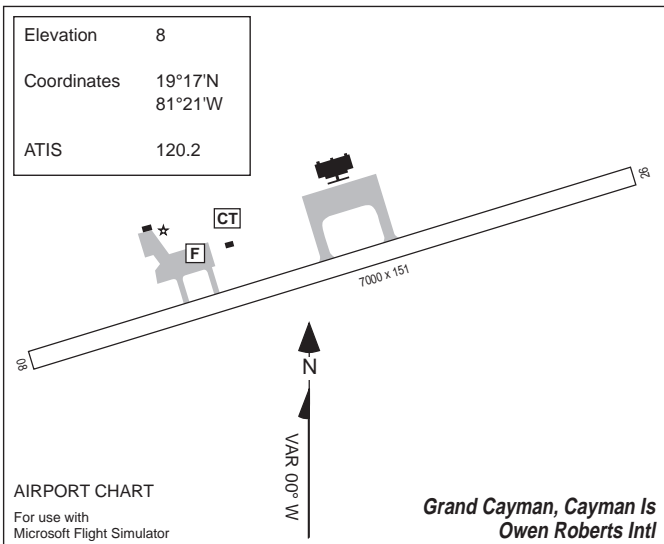
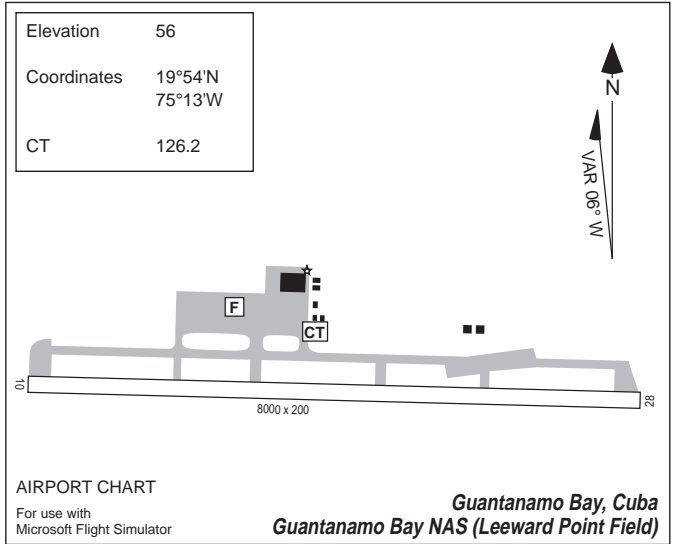
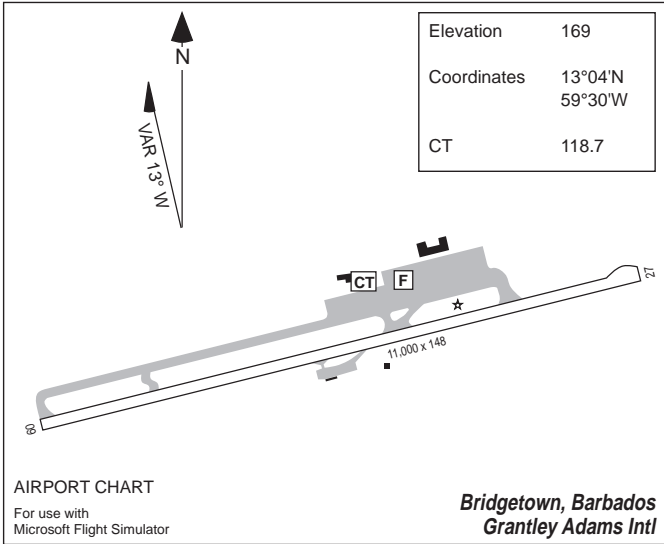
For use with Microsoft Caribbean
 Scenery Enhancement for
 Microsoft Flight Simulator



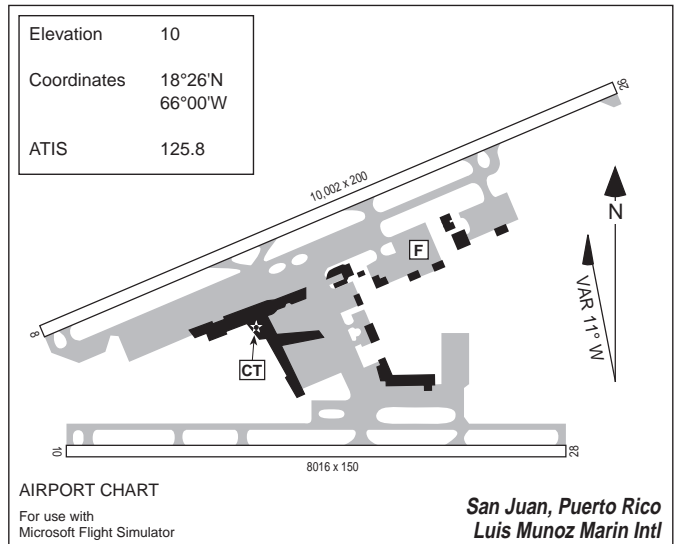
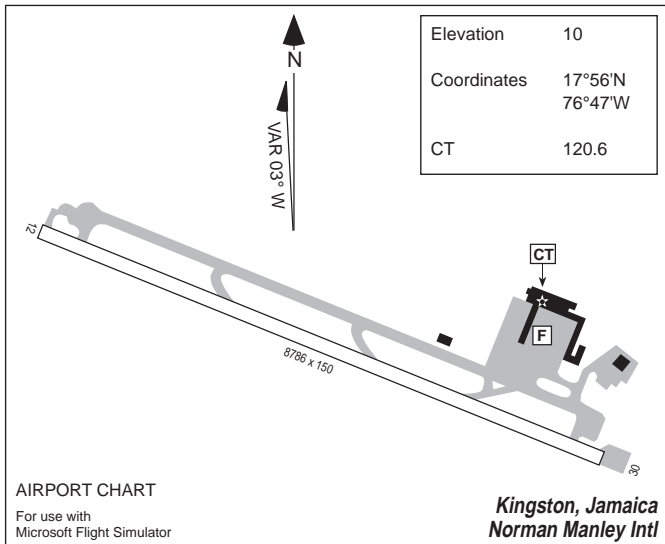
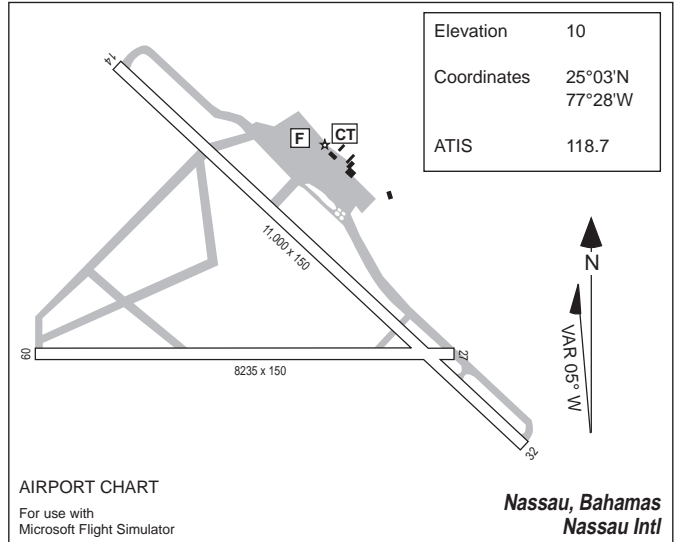
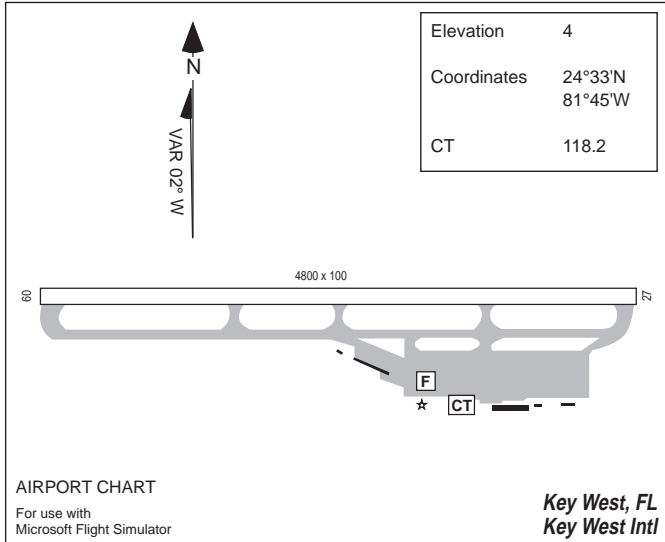
Caribbean Sectional — Windward Islands



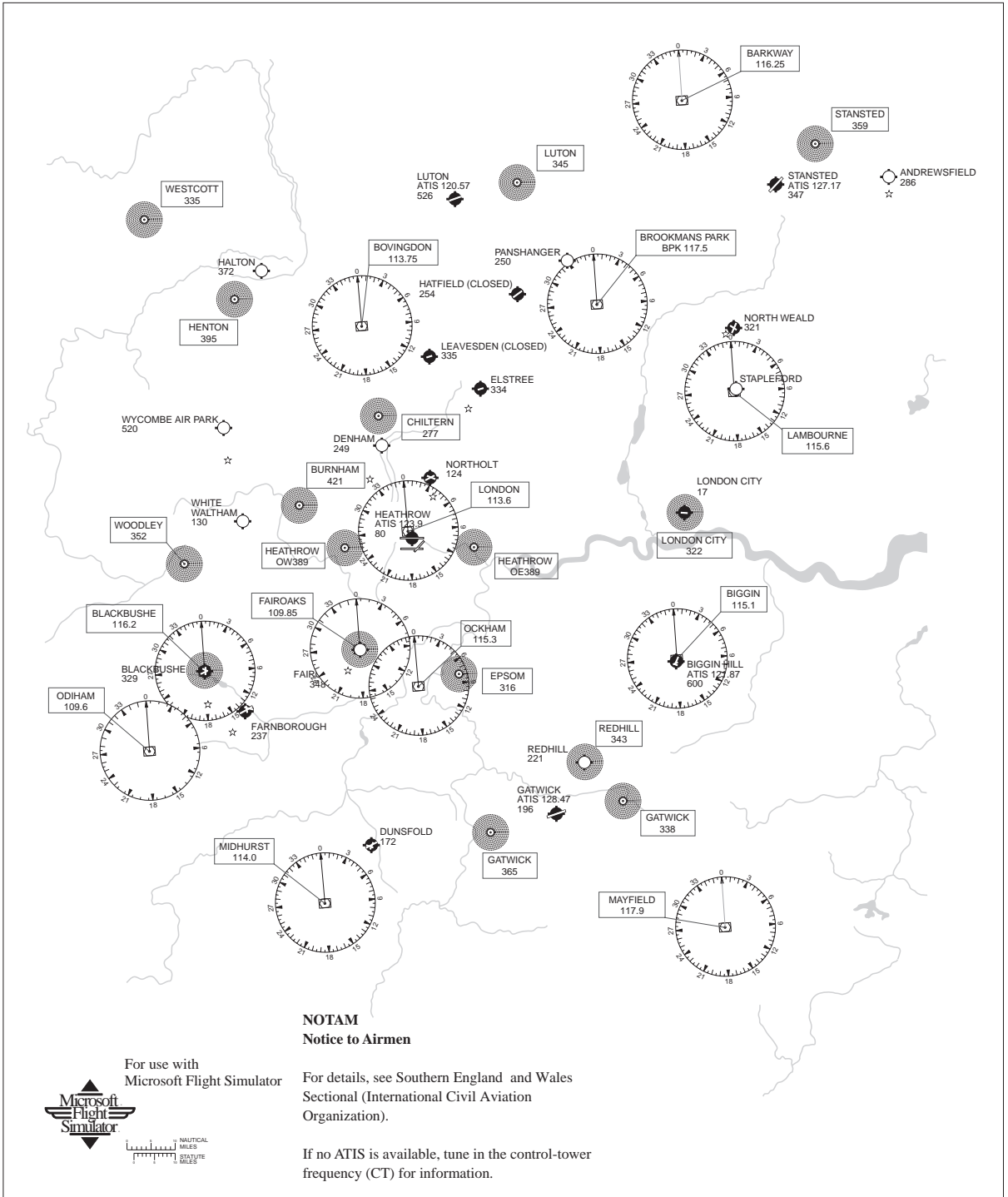
Caribbean Sectional — Major Airports



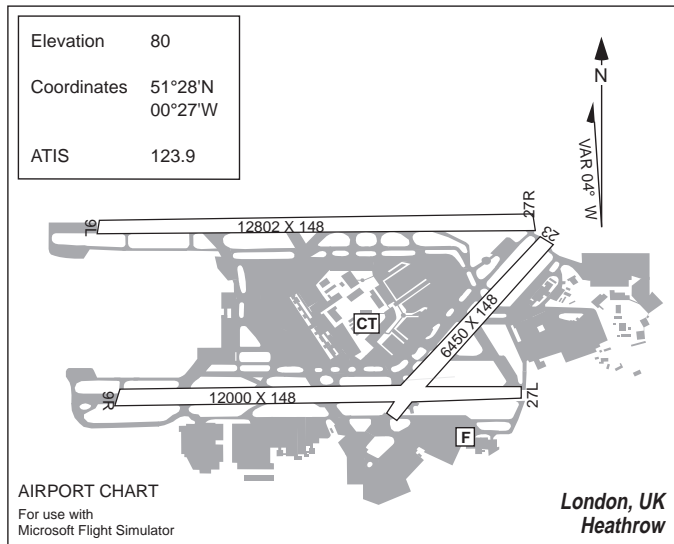
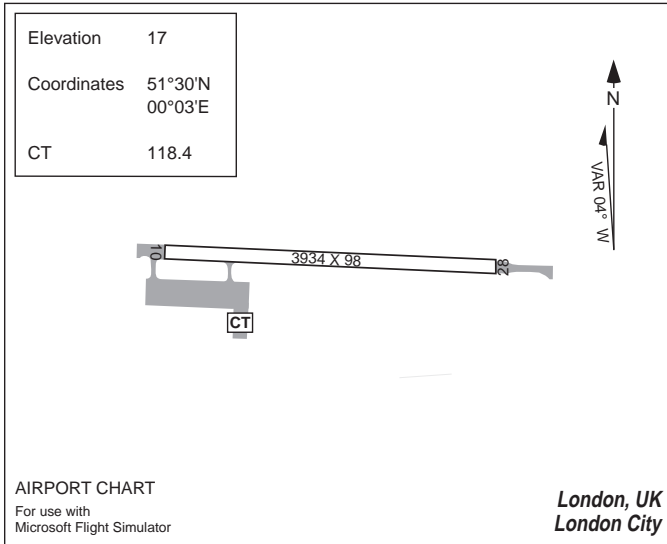
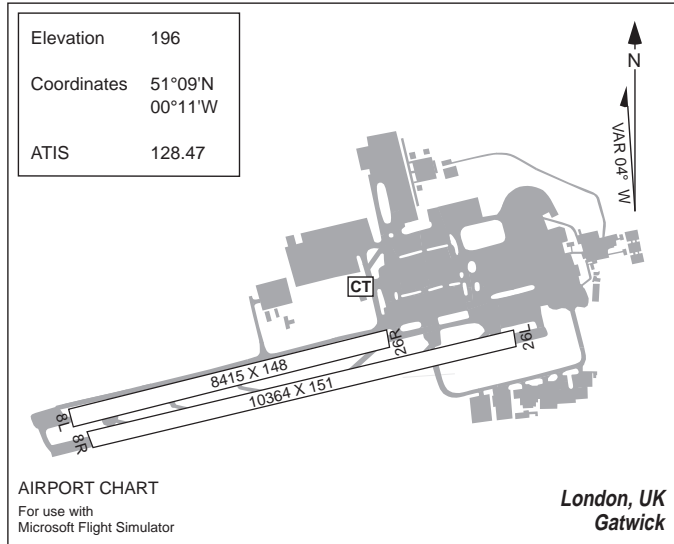
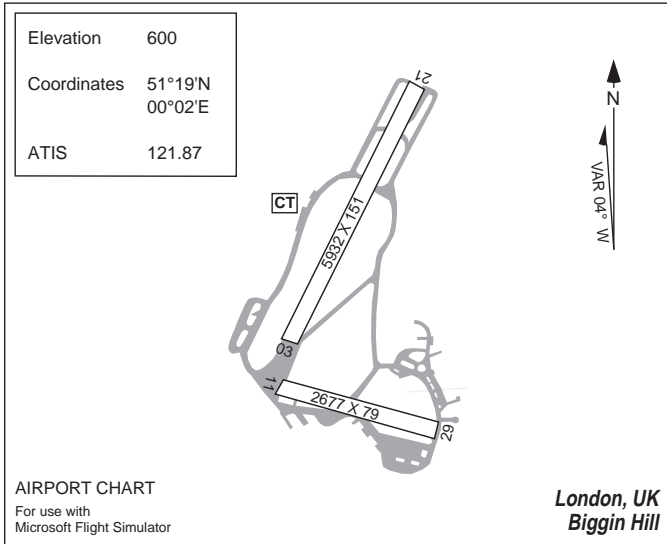
Caribbean Sectional — Major Airports



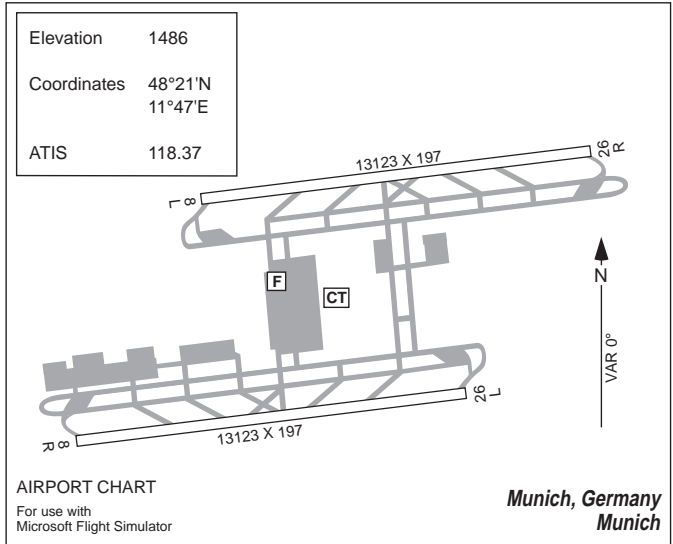
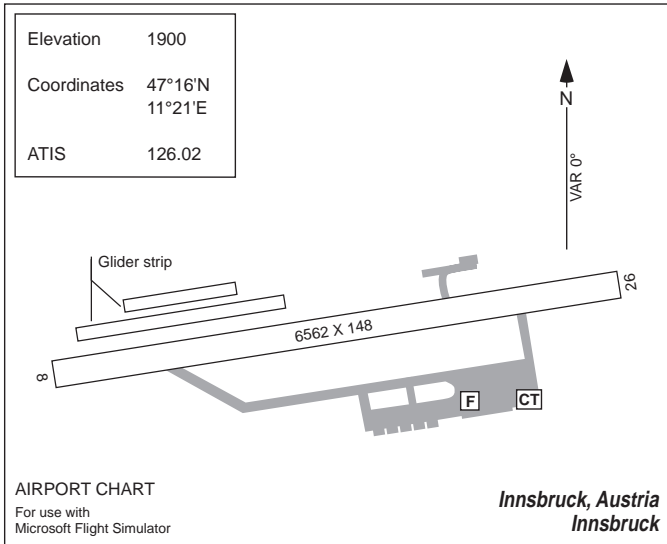
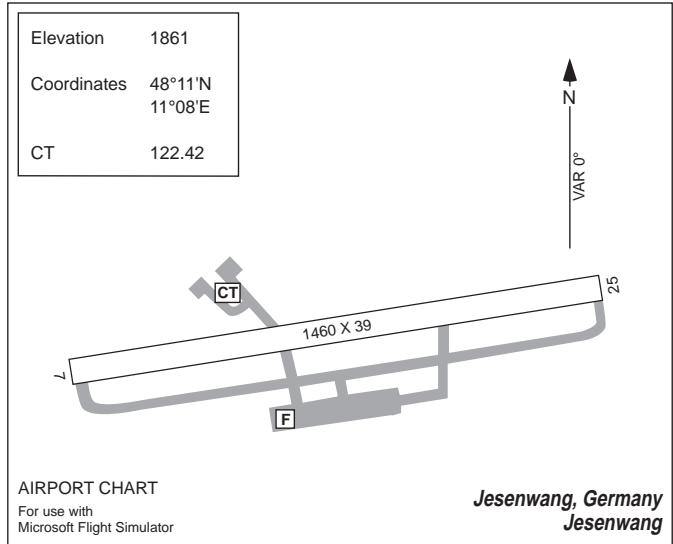
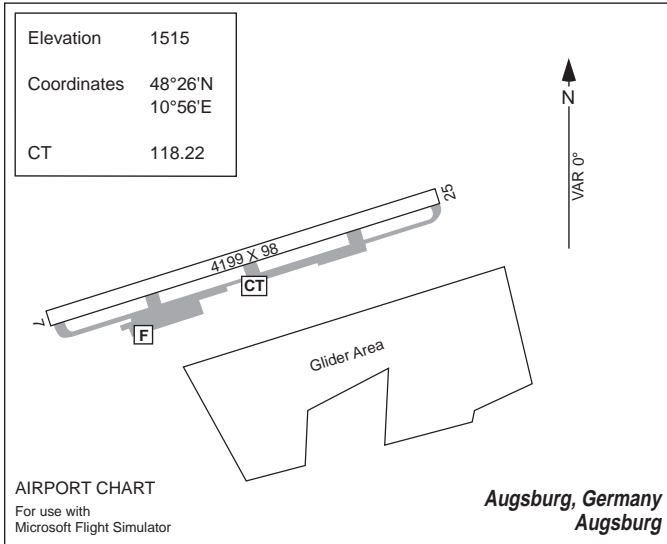
London



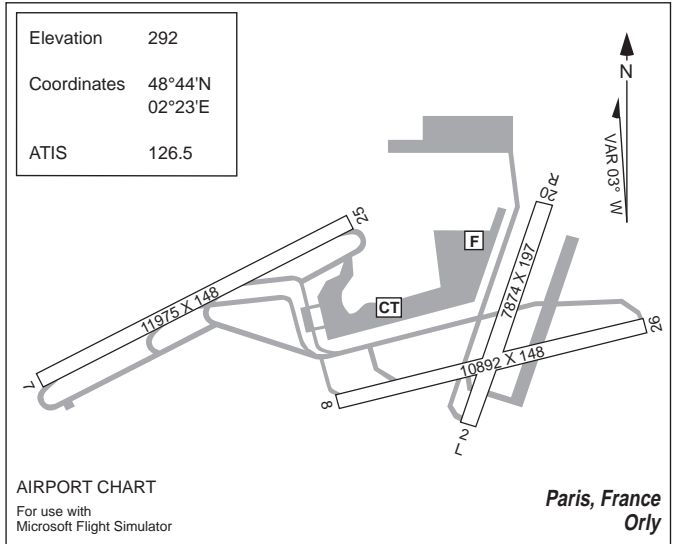
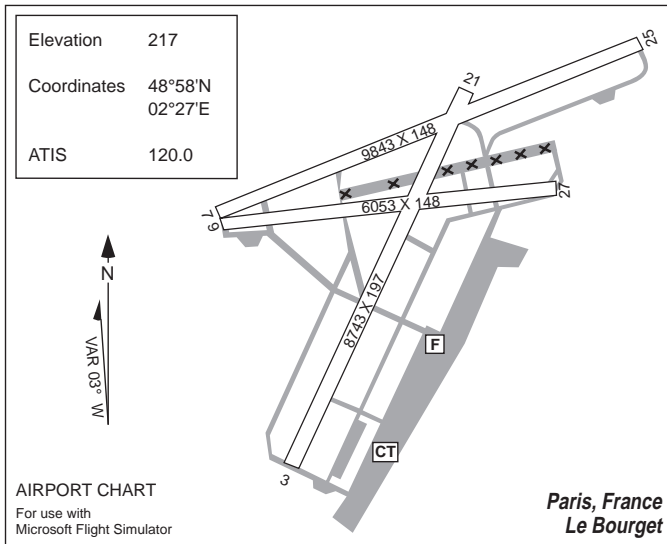
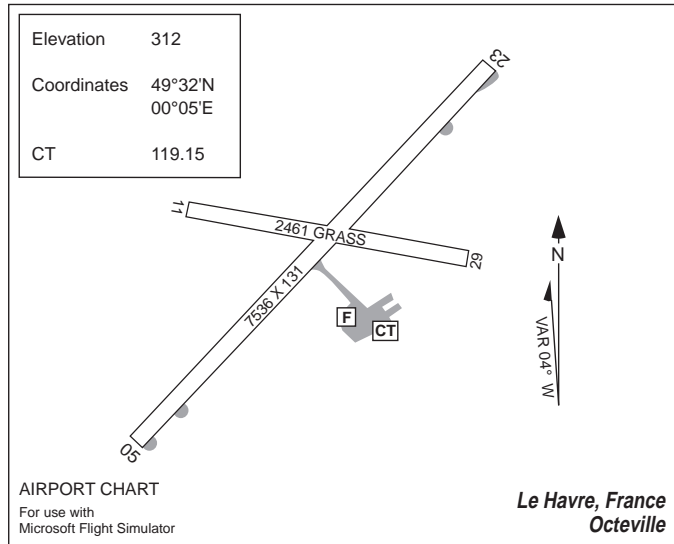
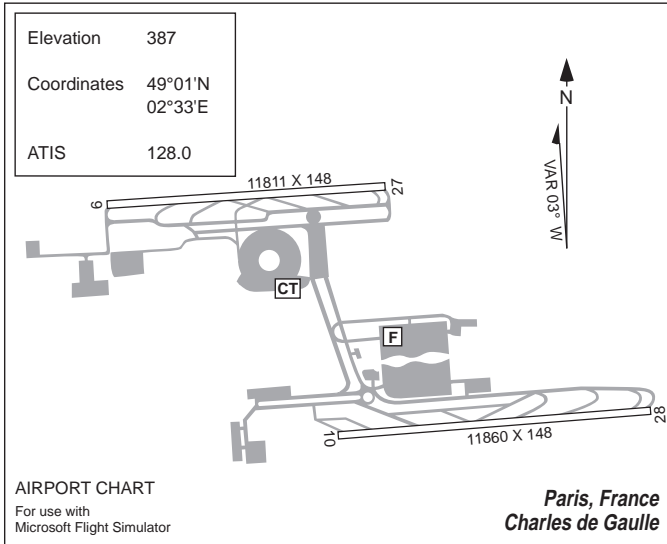
London



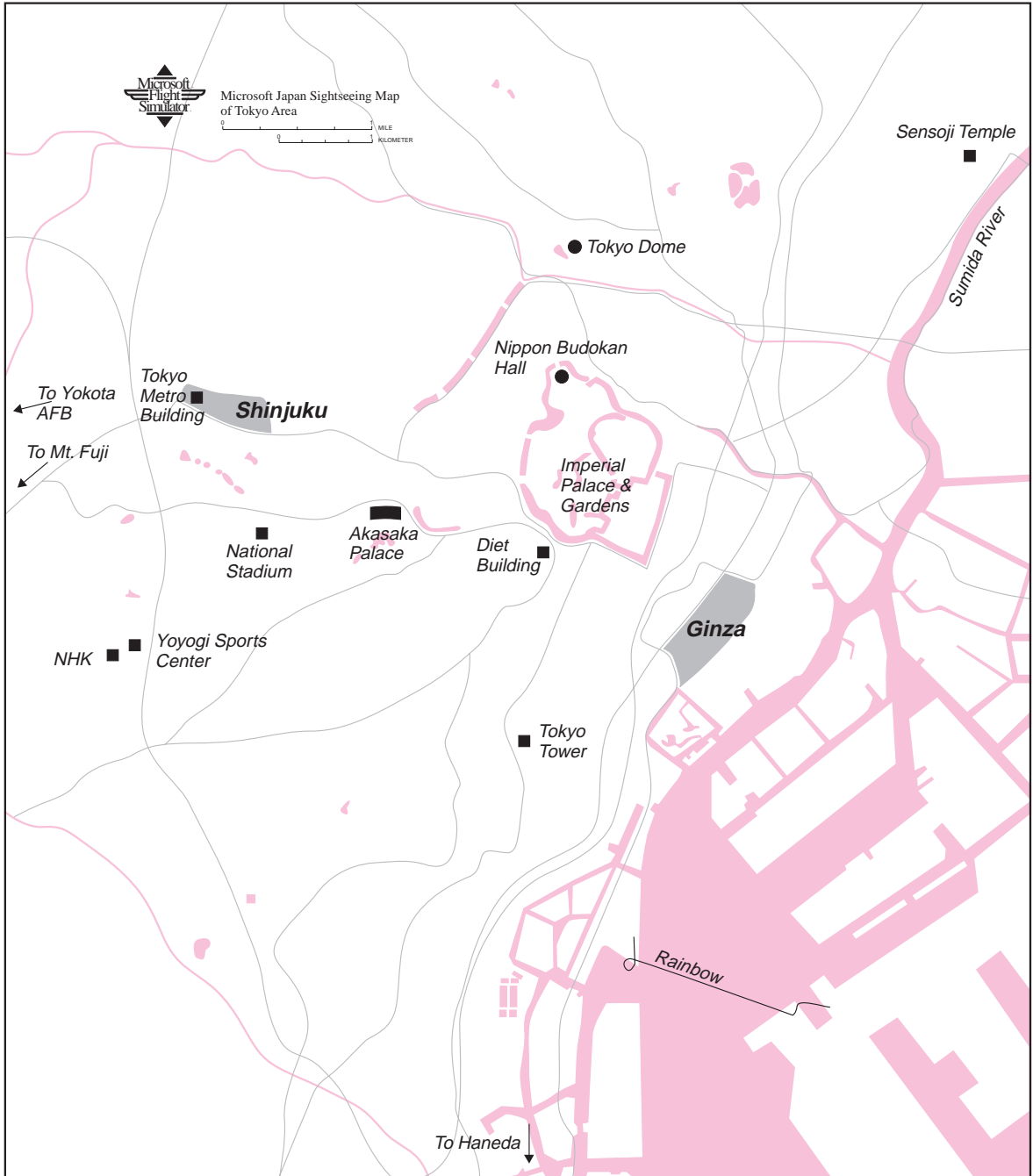
Munich



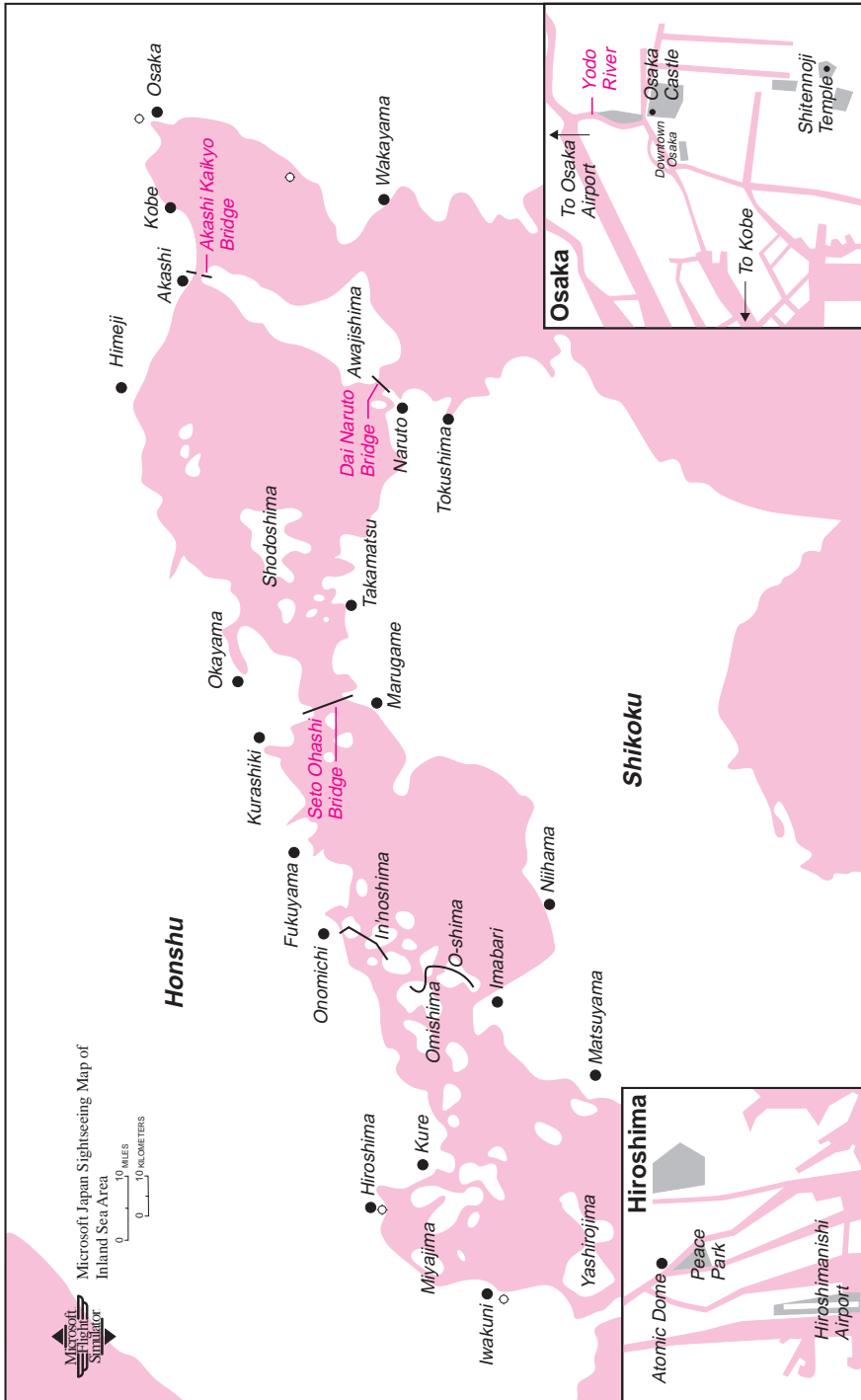
Paris



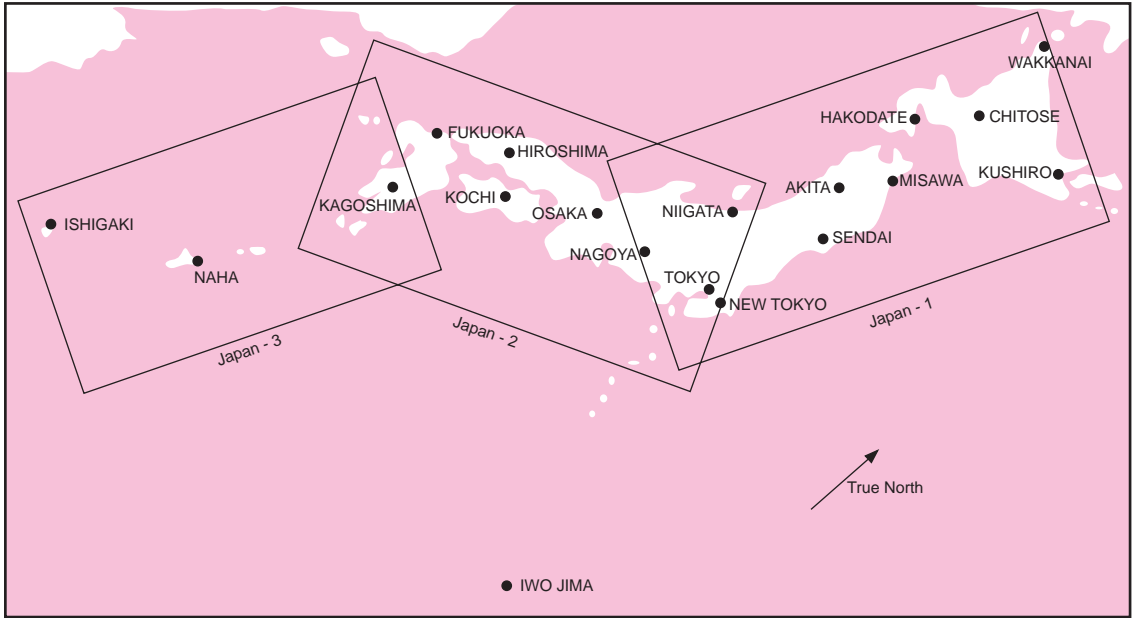
Japan — Tokyo Sightseeing Map



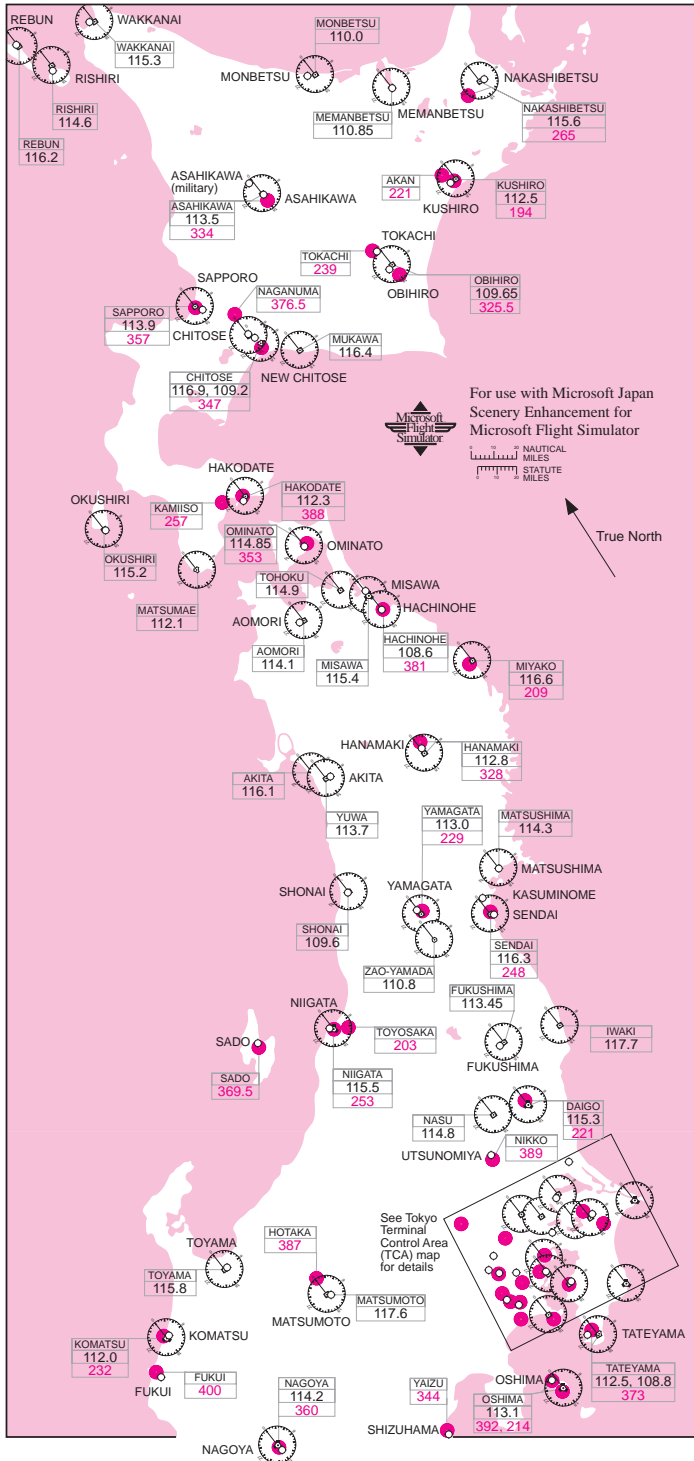
Japan — Inland Sea Sightseeing Map



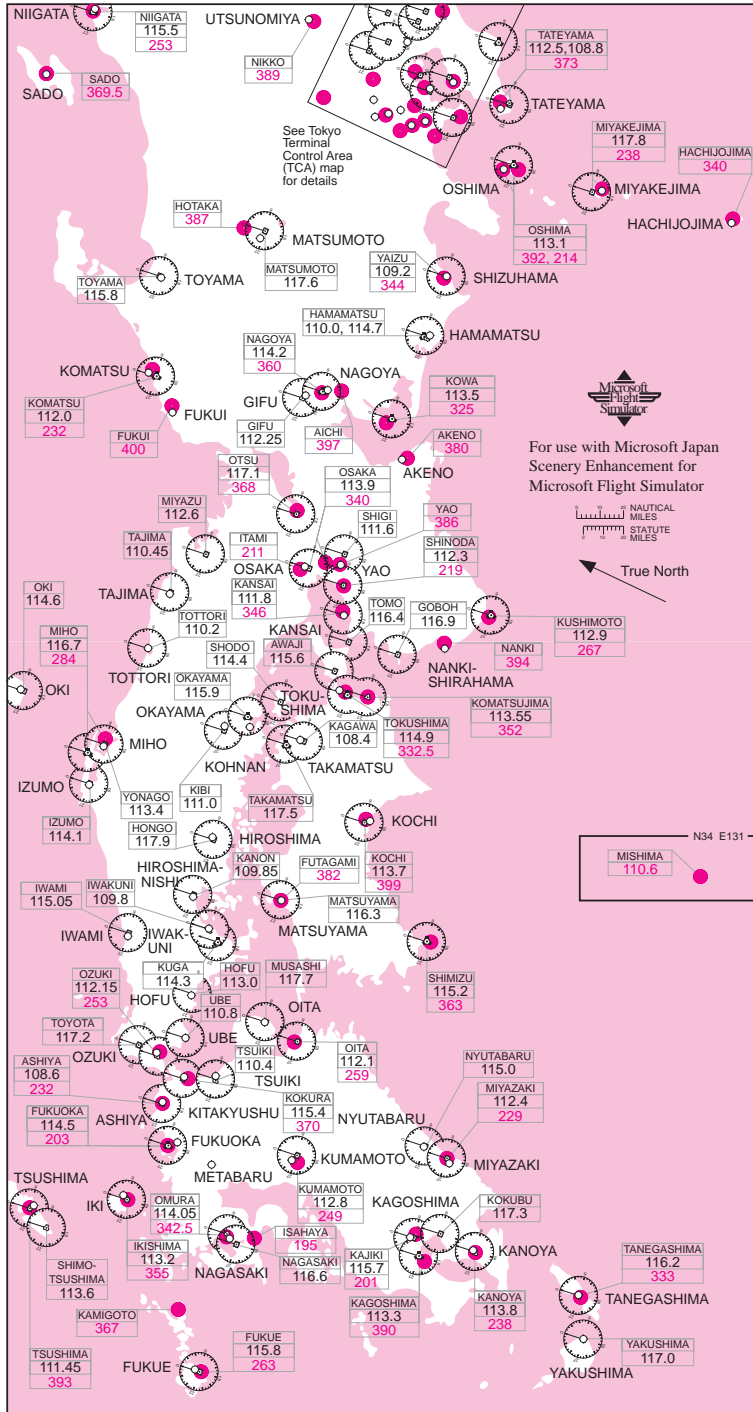
Japan Area Sectionals



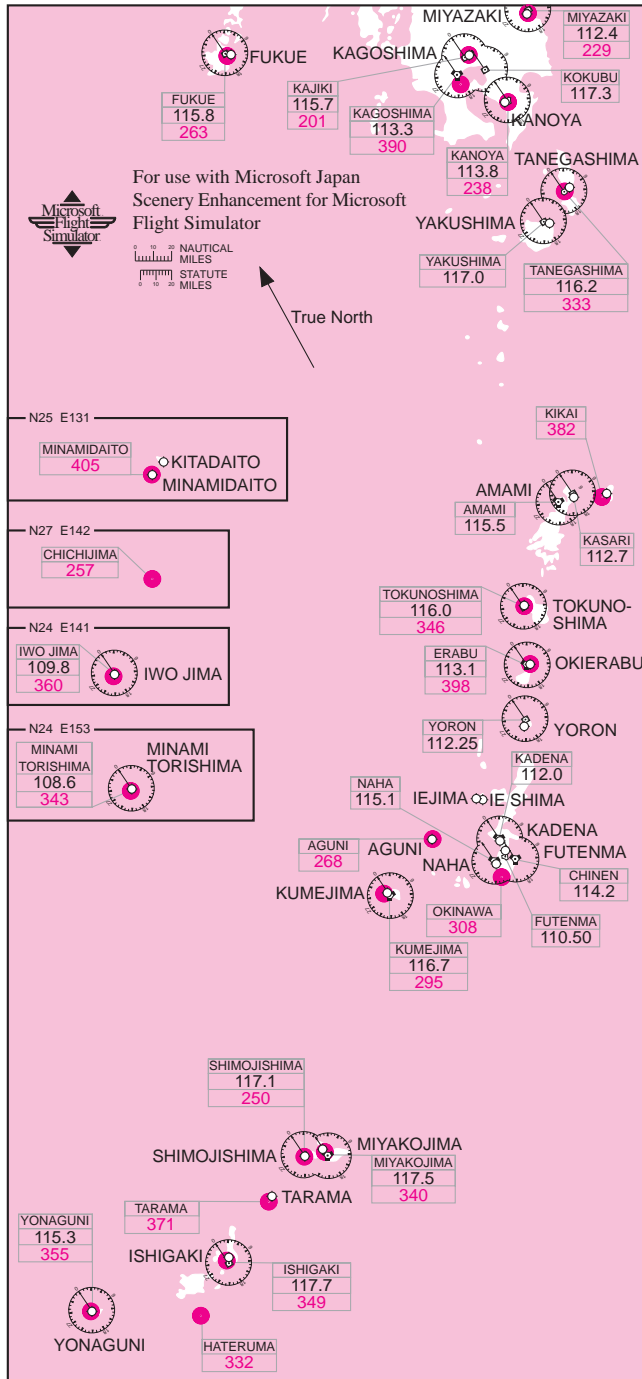
Japan — Sectional 1



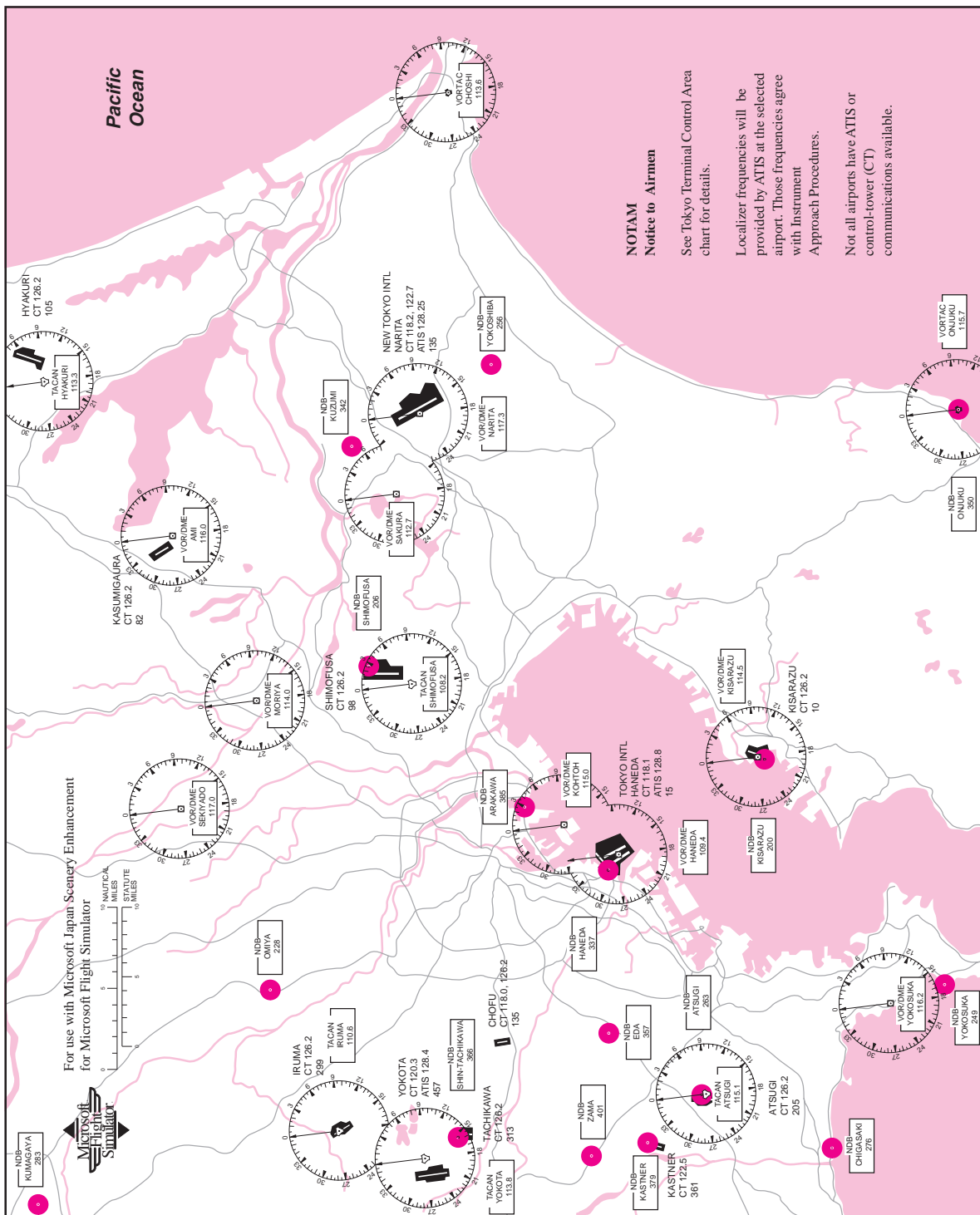
Japan — Sectional 2



Japan — Sectional 3



Japan — Tokyo Terminal Control Area



For use with Microsoft Japan Scenery Enhancement
for Microsoft Flight Simulator



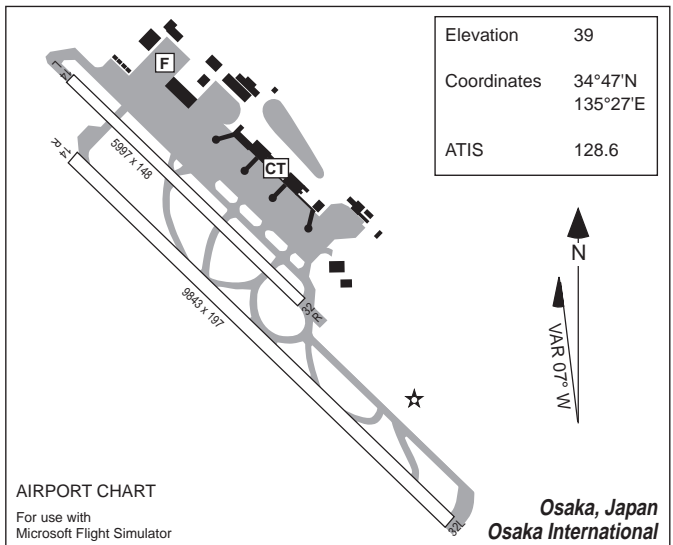
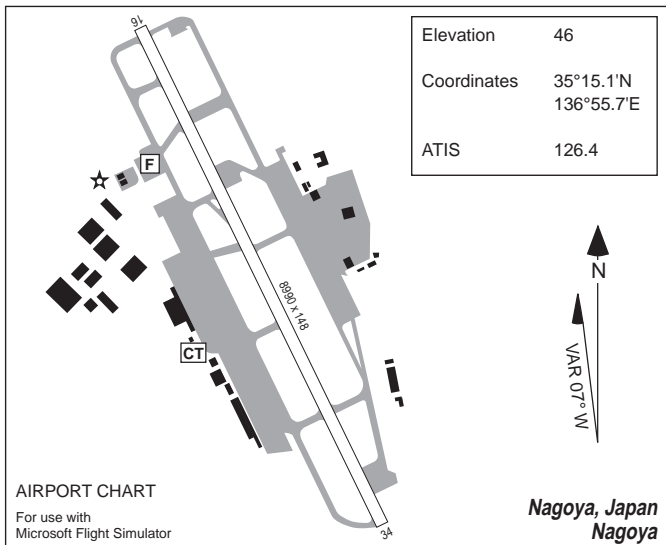
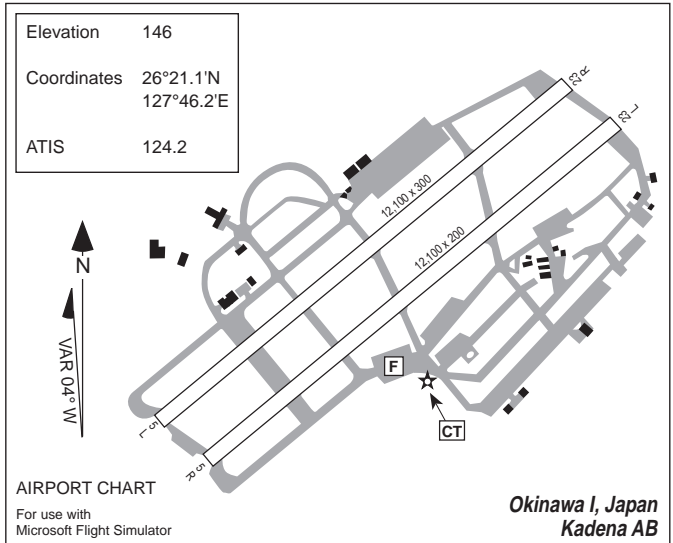
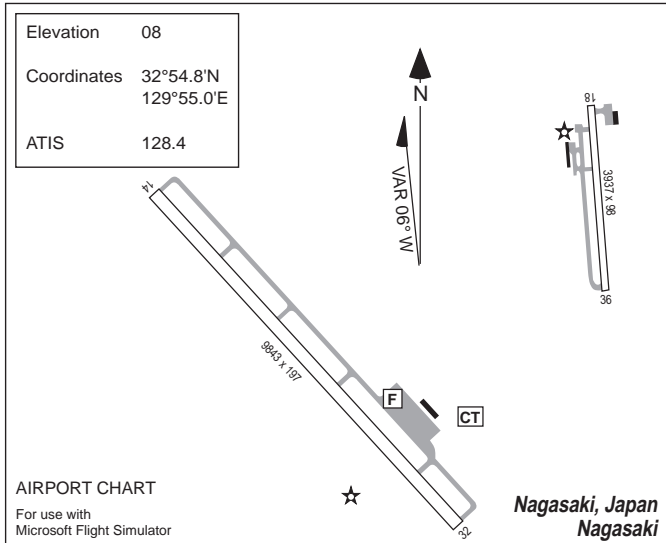
NOTAM
Notice to Airmen

See Tokyo Terminal Control Area chart for details.

Localizer frequencies will be provided by ATIS at the selected airport. Those frequencies agree with Instrument Approach Procedures.

Not all airports have ATIS or control-tower (CT) communications available.

Japan — Major Airports



Japan — Major Airports

