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Introduction

We thank you for your purchase of this product, which has been developed as the seventh product of AeroSim's Real Add-On Series for Microsoft Flight Simulator 2004, A Century of Flight.

Classic Liners, Vol. 2, is the sequel to the Classic Liner, Vol. 1, for the FS2004, featuring the Jetliners of Second Generation, such as DC-8 series, DC-10 series and Lockheed L1011 series. They are in the classical liveries of corporate colors of the Douglas and the Lockheed. In addition, some of them wear the old liveries of PAA, NWA, TWA, BA, Delta, Hawaiian, and Air Canada. In total, 13 Jetliners are included.

In the old days, there was 4th crewmember in the cockpit of airliners for intercontinental flight. He was the navigator and his job was to calculate the plane's position and guide the plane on its course. The captain, co-pilot and flight Engineer were the rest of crew in the cockpit. The Navigator had disappeared with the introduction of computer in cockpit. This computer was the navigation system named INS. The INS stands for Inertial Navigation System, which consists of instruments called gyroscopes that indicate direction, and accelerometers that measure changes in speed and direction. An onboard computer uses this information to calculate the plane's position and guide it on its course. Unlike other methods of navigation, the INS is a self-contained system, which does not need to rely on observations of land or the stars, on radio or radar signals, or on any other information from outside the plane.

Of these jetliners included in the Classic Liner, Vol.2, DC-8 and DC-10 were equipped with the INS. However, L-1011 had used the equipment that was not only INS but was connected with the FMS (Flight Management System). It was the system that had advanced far compared with the system of DC-8/DC-10. For instance, L-1011 pilot was not required to type in LAT and LONG of waypoint one by one by using the alphanumeric keypad of CDU prior to the departure of every flight. They were also able to pre-set the various parameters of climb and descent in FMS, so that they could fly not only with LNAV but also VNAV.

It is needless to say that the FMS/CDU in real life was highly complex system. It may perhaps be too difficult for the average simmer to handle. The FMS/CDU mounted on L-1011 of Classic Liner, Vol.2, is, therefore, simplified to an extent that any level of FS fan is able to manipulate the system.

In addition to the aircraft and panel, the approach and landing adventure for 9 airports in Japan are included for your enjoyment.

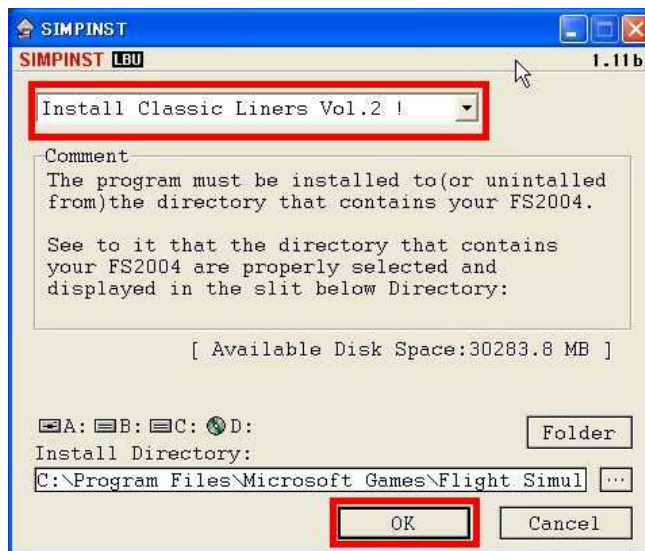
Install / Uninstall

Downloaded archive file shall be unzipped into TEMPO folder. In this folder, you will find a setup program, install.exe. Double click on this install.exe in order to launch the installer. Once the installer is launched, then follow the on-screen instructions.

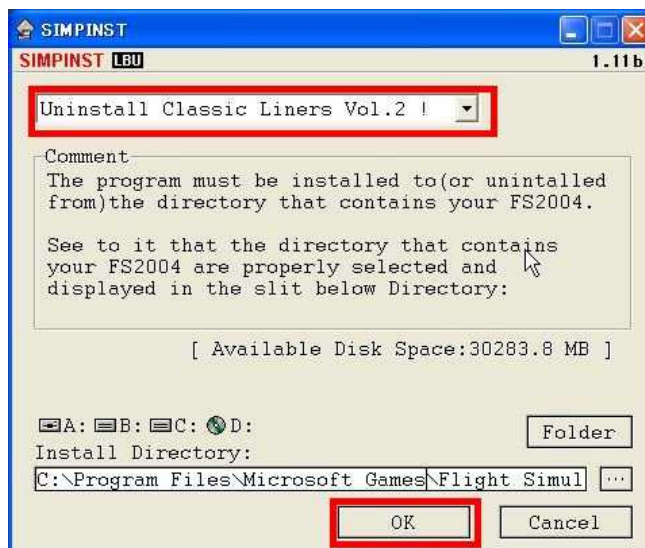
First of all, “search-in-progress” bar would appear. You will have to be patient, because, you may have to wait for a few minutes until the installer locates your FS2004 in your hard disk.

When your FS2004 was located and so notified by the installer, keep pressing the OK button to install the software onto your Flight Simulator 2004.

For INSTALL



For UNINSTALL



Classic Jetliners in Vol. 2

Douglas DC-8-61



Wing Span	43,4 m	Max TKOF Weight	147,420 kg
Overall Length	57,2 m	Power Plants	P&W JT3D3B x 4
Height	12,8 m	Fuel Capacity	88,540 liter
Operating Empty	71,505 kg	Max Operational Mach	M.0.88
Max Payload	34,020 kg	Range	10,614 km

Douglas DC-8-53



Wing Span	43,4 m	Max TKOF Weight	147,420 kg
Overall Length	45,9 m	Power Plants	P&W JT3D3B x 4
Height	12,9 m	Fuel Capacity	88,540 liter
Operating Empty	60,023 kg	Max Operational Mach	M.0.88
Max Payload	15,586 kg	Range	11,258 km

McDonnell Douglas DC-10-30



Wing Span	50,4 m	Max TKOF Weight	251,815 kg
Overall Length	55,1 m	Power Plants	GE CF6-50C x 3
Height	17,7 m	Fuel Capacity	111,420 liter
Operating Empty	122,960 kg	Max Operational Mach	M 0.88
Max Payload	44,010 kg	Range	7,400 km

Lockheed L-1011-1



Wing Span	47,4 m	Max. Takeoff Weight	195,044 kg
Overall Length	54,2 m	Power Plants	RB211-2B x 3
Height	18,9 m	Fuel Capacity	72,640 liter
Operating Empty	147,417 kg	Max Operational Mach	M 0.90
Max. Payload	37,805 kg	Range	5,463 km

Instrument Panels
Douglas DC-8-61 -53



1	NAV 1 Radio	13	Instrument Malfunction Indicator
2	FD Mode Selector	14	Marker Lamps
3	Airspeed Indicator	15	Standby ADI
4	Radio Magnetic Indicator	16	Flap Position Indicator
5	Attitude Director Indicator	17	EPR Gauges
6	Horizontal Situation Indicator	18	EGT Gauges
7	Altimeter	19	N2 Gauges
8	Vertical Speed Indicator	20	Fuel Flow Gauges
9	NAV/GPS Mode Switch	21	Altitude Warning Setting
10	DME Indicator	22	Landing Gear Lever
11	Radio Altimeter	23	Landing Gear Position Indicator
12	Clock		

Flight Director Mode Selector



1. NAV 1 Course Setting knob. Set course by clicking the mouse on the knob.
2. FD Mode Selector.
3. HDG Setting Knob. Set heading by clicking the mouse on the knob.
4. ALT Hold Switch. Switch ON to maintain current altitude.
5. FD Pitch Trim.
6. NAV 2 Course Setting Knob. Set course by clicking the mouse on the knob

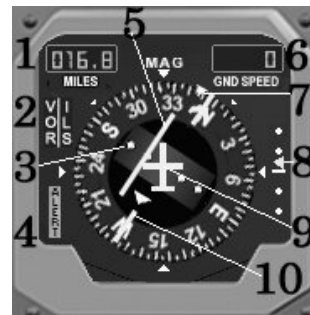
ADI (Attitude Director Indicator)

1. Airspeed Fast-Slow Indicator Scale.
2. Aircraft Symbol.
3. Artificial Horizon.
4. LOC/VOR Deviation (Scale / Pointer)
5. Slip Indicator
6. Flight Director Command Bar
7. Glide Slope Deviation (Scale / Pointer)



HSI (Horizontal Situation Indicator)

1. Mile Gauge. Distance to the next waypoint is indicated here, when INS is active.
2. Mode Annunciator. VOR/ILS or INS will be displayed.
3. Course/Track Deviation Scale.
4. INS Alert Light. It will be lit when aircraft reaches at a point within 2 nm from the next waypoint.
5. Deviation Bar.
6. GS Indicator. (Ground Speed)
7. Heading Set Bug.
8. Glide Slope Deviation (Scale / Pointer)
9. Aircraft Symbol.
10. TO-FROM Indicator.



Airspeed Indicator

1. Mach Number Indicator.
2. Cursor Control.
3. Command Speed Cursor.



Clock

1. Hour indication, when ET is active.
2. Minute indication, when ET is active.
3. Elapsed Time (ET) function and Stopwatch function is interchangeable by clicking the mouse on the switch.
4. Push to start either ET or Stopwatch function. Second push to STOP, and third push to RESET and clear.



Radio



Click icon or press Shift and 2 Key combination to display/hide the Panel

1. COMM 1 Frequency Selector.
Click the mouse on the knob or the digits for FREQ change. Active FREQ is on the left, and Standby FREQ is on the right. Use toggle switch to transfer FREQ between STBY and ACTIVE
2. COMM 2 Frequency Selector.
3. NAV 2 Frequency Selector.
4. Transponder Code Selector. Click the mouse on the digit in the windows for IDENT Code change.
5. ADF Frequency Selector. Click the mouse on the digit in the window for FREQ change.
6. Audio Control Panel.

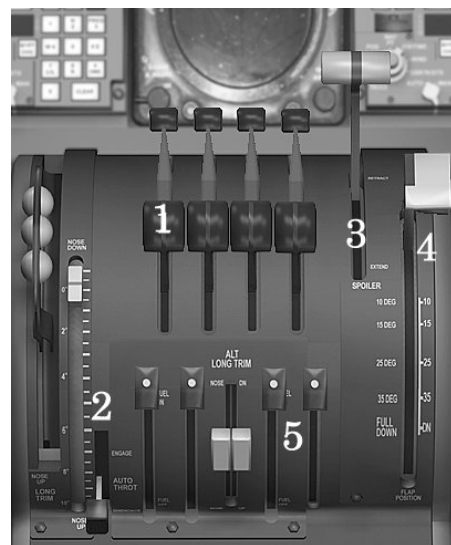


Center Pedestal




Click icon or press Shift & 3 Key combination to display/hide the Panel

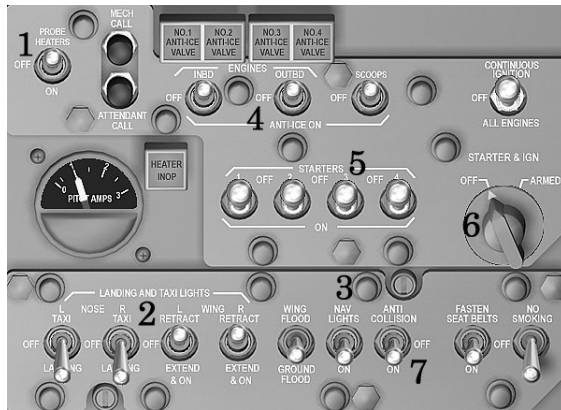
1. Throttle Levers
2. Auto Thrust Lever
3. Spoiler Lever
4. Flap Lever
5. Fuel Control Switches



Overhead Panel

Click icon  or press Shift & 4 Key combination to display/hide the Panel.

1. Probe Heaters Switch
2. Landing Light Switch
3. NAV Light Switch
4. Anti-Ice Switches
5. Engine Starter Switches
6. Ignition Switch
7. Anti-Collision Switch



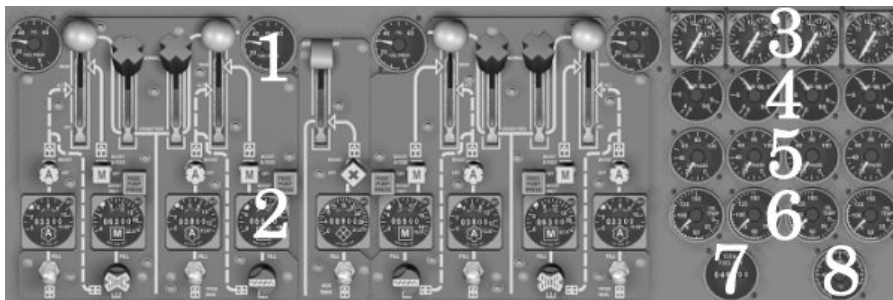
Autopilot Panel




Click icon  or press Shift and 5 Key combination to display/hide the Panel.

1. Pitch Selector.
2. Vertical Speed Thumbwheel. Click the mouse to set vertical speed.
3. Turn Knob Switch
4. Autopilot Engage Switch
5. NAV Mode Selector.

FE Panel



Click icon  or press Shift and 6 Key combination to display/hide the Panel

1. Fuel Pressure Gauges
2. Fuel Gauges
3. N1 Gauges
4. Oil Quantity Gauges
5. Oil Pressure Gauges
6. Oil Temperature Gauges
7. Total Fuel Gauge
8. Fuel Temperature Gauge

INS/CDU Panel

Click icon  or press Shift and 7 Key combination to display/hide the Panel

1. INSERT Button
2. Waypoint Selector
3. FROM-TO Display
4. Data Selector
5. Data Display
6. Alert Light
7. Command Input Keypad
8. Data Clear Button



Data	Data in Left Data Display	Data in Right Data Display
TK / GS	Track Angle	Ground Speed
HDG / DA	True Heading Angle	Drift Angle
XTE / TKE	Cross Track Distance	Track Angle Error
POS	Latitude of current position	Longitude of current position
WAYPT	Latitude of selected WAYPT	Longitude of selected WAYPT
DIST/TIME	Distance to the next WAYPT	Time to the next WAYPT
WIND	Wind Direction	Wind Velocity
DSRTK/STS	Desired Track	INS Status (not simulated)

McDonnell Douglas DC-10-30 -40



1	Autopilot panel	11	Total Fuel Gauge
2	Clock	12	Marker Lamps
3	Airspeed Indicator	13	Standby ADI
4	D M E	14	Standby Altimeter
5	R M I	15	Standby Speed Indicator
6	A D I	16	Engine Instruments
7	H S I	17	Flap Position Indicator
8	Radio Altimeter	18	Flight Control Indicator
9	Vertical Speed Indicator	19	Landing Gear Lever
10	Altimeter		



1. Flight Director Switch
2. NAV1 Radio. Set the FREQ by mouse click.
3. NAV/RADIO toggle switch. When switched to NAV, the data from INS are fed into H S I. When switched to RADIO, the data from VOR/ILS go to H S I.
4. NAV1 Course. Set the course by mouse click.
5. Auto Thrust Arm Switch.
6. IAS. 1 kt plus/minus by mouse click on the digits. 10 kt plus/minus by mouse click on the white knob.
7. Heading Selector. Set the heading by mouse click. 1 deg plus/minus by mouse click on the digits. 10 deg plus/minus by mouse click on the knob
8. NAV Hold Switch. Hold the course of VOR tuned in NAV1.

9. ILS Hold Switch. Hold the course of ILS tuned in NAV1.
10. HDG Select Switch. Hold the heading selected by the HDG Selector.
11. Vertical Speed Thumbwheel. Set the speed by mouse click on the thumbwheel.
12. Altitude Selector. Set the altitude by mouse click. 100 FT plus/minus by mouse click on the digits. 1000 FT plus/minus by mouse click on the white knob.
13. Autopilot Engage Switch.
14. ALT Select Switch. Hold the altitude selected by the ALT Selector.

Radio Magnetic Indicator (R M I)

1. The pointer displays bearing to VOR1 when the selector is pointing to VOR. The pointer displays bearing to ADF facility when it is pointing to ADF.
2. The pointer displays bearing to VOR2 when the selector is pointing to VOR. The pointer displays bearing to ADF facility when it is pointing to ADF.



Attitude Director Indicator (A D I)

1. Airspeed Fast-Slow Indicator Scale. It indicates the trend of speed either faster or slower.
2. Aircraft Symbol.
3. LOC/VOR Deviation. (Pointer and Scale)
4. Decision Height (DH) Indicator Light.
5. Flight Director Command Bar. It displays computed roll and pitch correction which the aircraft must make to fly desired course and altitude.
6. Glide Slope Deviation (Pointer and Scale).
7. Slip Indicator.



Horizontal Situation Indicator (H S I)

1. Distance in NM to DME1 is displayed. Distance to the next waypoint is displayed when INS is activated.
2. Mode annunciator. It displays the mode of either VOR/ILS or INS.
3. Course/Track Deviation Scale.
4. INS Alert Light. The light will be lit when aircraft comes within 2 min from the next waypoint.
5. Deviation Bar.
6. Ground Speed Display.
7. Heading Set Bug.
8. Glide Slope Deviation (Pointer and Scale)
9. Aircraft Symbol.
10. To-From Pointer.



Clock

1. Current Time in UTC. (GMT)
2. Elapsed Time (ET) window.
3. ET function and Stopwatch function are interchangeable by mouse click on the bottom left button.
4. First click on the top right button turns ON, and second click STOP the ET and Stopwatch function.
5. Click on the bottom right button to RESET,



Engine Instruments

DC-10-30

1. N1 Gauges
(LP Compressor Turbine Rotary Gauges)
2. EGT Gauges
(Exhaust Gas Temp Gauges)
3. N2 Gauges
(HP Compressor Turbine Rotary Gauges)
4. Fuel Flow Gauges.



DC-10-40

1. EPR Gauges
(Engine Pressure Ratio Gauges)
2. EGT Gauges
(Exhaust Gas Temp Gauges)
3. N1 Gauges
(LP Compressor Turbine Rotary Gauges)
4. Fuel Flow Gauges



Radio




Click icon  or press Shift and 2 Key combination to display/hide the Panel

1. COMM 1 Frequency Selector.
Click the mouse on the knob or the digits for FREQ change. Active FREQ is on the left, and Standby FREQ is on the right. Use toggle switch to transfer FREQ between STBY and ACTIVE
2. COMM 2 Frequency Selector.
3. NAV 2 Frequency Selector.
4. Transponder Code Selector. Click the mouse on the digit in the windows for IDENT Code change.
5. ADF Frequency Selector. Click the mouse on the digits in the window for FREQ change.
6. Audio Control Panel.

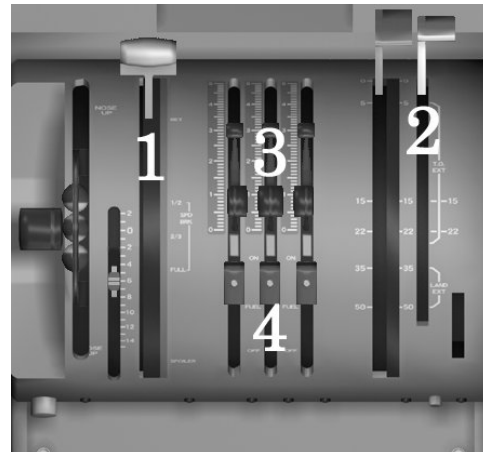


Center Pedestal




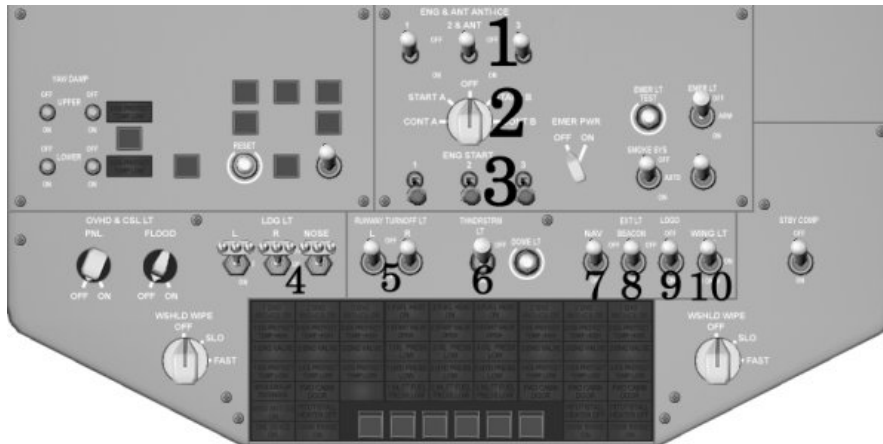
Click icon  or press Shift & 3 Key combination to display/hide the Panel

1. Spoiler Levers
2. Flap Lever
3. Throttle Levers
4. Fuel Control Switches




Overhead Panel

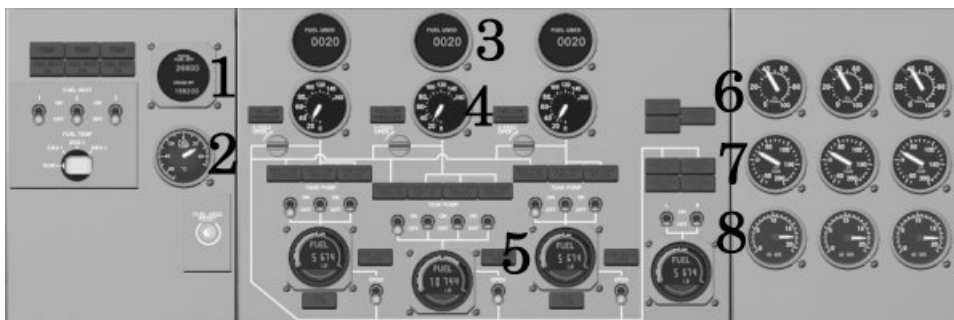
Click icon  or press Shift & 4 Key combination to display/hide the Panel.



1	Anti-Ice Switches	2	Ignition Switches
3	Engine Starter Switches	4	Landing Light Switches
5	Runway Turnoff Light Switches	6	Strobe Light Switch
7	Navigation Light Switch	8	Beacon Light Switch
9	Logo Light Switch	10	Wing Light Switch

FE Panel

Click icon  or press Shift and 5 Key combination to display/hide the Panel



1	Total Fuel Gauge	2	Fuel Temperature Gauge
3	Fuel Consumption Gauges	4	Fuel Pressure Gauges
5	Fuel Gauges	6	Oil Pressure Gauges
7	Oil Temperature Gauges	8	Oil Quantity Gauges

INS/CDU Panel

Click icon  or press Shift and 7 Key combination to display/hide the Panel

1. Waypoint Selector
2. FROM-TO Display
3. Insert Button
4. Data Selector
5. Data Display
6. Alert Light
7. Command Input Keypad
8. Data Clear Button



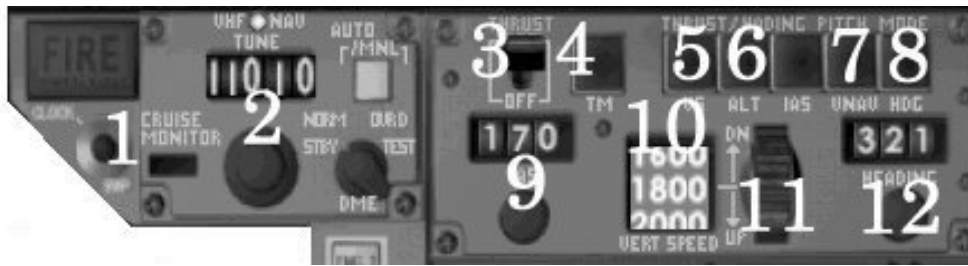
Data	Data in Left Data Display	Data in Right Data Display
TK / GS	Track Angle	Ground Speed
HDG / DA	True Heading Angle	Drift Angle
XTE / TKE	Cross Track Distance	Track Angle Error
POS	Latitude of current position	Longitude of current position
WAYPT	Latitude of selected WAYPT	Longitude of selected WAYPT
DIST/TIME	Distance to the next WAYPT	Time to the next WAYPT
WIND	Wind Direction	Wind Velocity
DSRTK/STS	Desired Track	INS Status (not simulated)

Lockheed L-1011



1	Autopilot Panel	15	Standby ADI
2	Clock	16	Standby Airspeed Indicator
3	Airspeed Indicator	17	Total Air Temperature Gauge
4	RMI	18	Standby Altimeter
5	ADI	19	EPR Gauges
6	HSI	20	N1 Gauges
7	AFCS	21	TGT Gauges
8	Radio Altimeter	22	N3 Gauges
9	Vertical Speed Indicator	23	Fuel Flow Gauges
10	Altimeter	24	Flap Position Indicator
11	Marker Lamps	25	Landing Gear Lever
12	Altimeter in Metric	26	Lighting Switches Panel
13	NAV/GPS Mode Switch	27	Magnetic Compass
14	Flight Control Indicator		

Autopilot Panel, (Left Side)



1. Stopwatch Remote Switch.
2. NAV1 Radio. Set the **FREQ** by mouse click.
3. Auto Throttle Arm Switch.
4. Throttle Management (TM) Switch.
5. Vertical Speed (VS) Switch.
6. ALT Hold Switch.
7. VNAV Switch.
8. HDG Switch. Selected heading is maintained when activated.
9. Speed Selector. Set **IAS** by mouse click. 1KT increase and decrease of speed are made by mouse click on the digits. 10KT increase and decrease of speed are made by mouse click on the knob.
10. Vertical Speed Display.
11. Vertical Speed Thumbwheel. Click the mouse on thumbwheel to set the VS.
12. Heading Selector. 1 DEG increase and decrease of heading are made by mouse click on the digits. 10 DEG increase and decrease of heading are made by mouse click on the knob.

Autopilot Panel (Right Side)



1. Flight Director Switch.
2. Autopilot Engage Switch.
3. NAV1 Course Selector. Set the course by mouse click.
4. APR Switch. Aircraft tracks ILS tuned to NAV1.
5. LOC Switch. Aircraft tracks LOC tuned to NAV1.
6. NAV Switch. Engage or Disengage LNAV, when FMS is being activated.
7. NAV2 Course Selector. Set the course by mouse click.
8. ALT Selector Arm Switch.
9. ALT Selector. Set the **ALT** by mouse click. 100FT increase and decrease of altitude are made by mouse click on the digits. 1000FT increase and decrease of altitude are made by mouse click on the knob.

Attitude Director Indicator (A D I)

1. Glide Slope Deviation (Pointer and Scale).
2. Aircraft Symbol.
3. ILS Symbol.
4. Airspeed Fast-Slow Indicator Scale. It indicates the deviation of speed, either faster or slower.
5. Decision Height (DH) Indicator Light.
6. Localizer Deviation (Pointer and Scale)
7. Flight Director Command Bars.
8. Slip Indicator.



Horizontal Situation Indicator (H S I)

1. Glide Slope Deviation (Pointer and Scale)
2. To-From Pointer.
3. Course/Track Deviation Scale.
4. Aircraft Symbol.
5. Mode Annunciator. (ILS/RAD or RNAV)
6. Distance in NM. Distance to the next waypoint is displayed when INS is activated.
7. Heading Set Bug.
8. INS Alert Light. The light will be lit when aircraft comes within 1 min from the next waypoint.
9. Deviation Bar.
10. Ground Speed Display.



Lighting Switch Panel



1. Landing Lights
2. Taxi Light
3. Runway Turnoff Light
4. Logo Light
5. Position Light
6. Strobe Light
7. Anti-Collision Light
8. Wing Light

Radio




Click icon  or press Shift and 2 Key combination to display/hide the Panel

1. COMM 1 Frequency Selector.
Click the mouse on the knob or the digits for FREQ change. Active FREQ is on the left, and Standby FREQ is on the right. Use toggle switch to transfer FREQ between STBY and ACTIVE
2. COMM 2 Frequency Selector.
3. NAV 2 Frequency Selector.
4. Transponder Code Selector. Click the mouse on the digit in the windows for IDENT Code change.
5. ADF Frequency Selector. Click the mouse on the digits in the window for FREQ change.
6. Audio Control Panel.

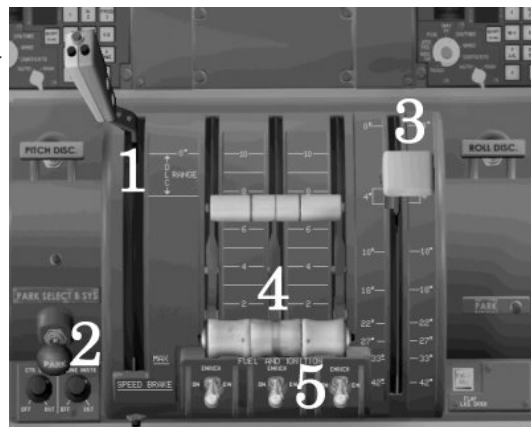


Center Pedestal




Click icon  or press Shift & 3 Key combination to display/hide the Panel

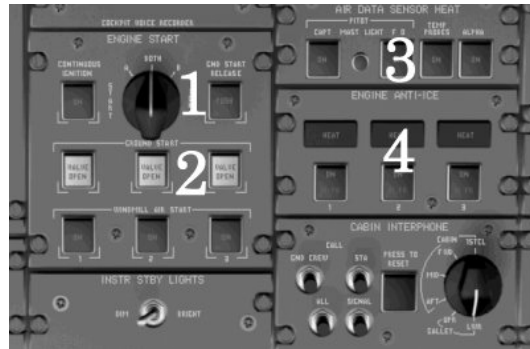
1. Spoiler Levers
2. Parking Brake
3. Flap Lever
4. Throttle Levers
5. Fuel Control Switches




Overhead Panel

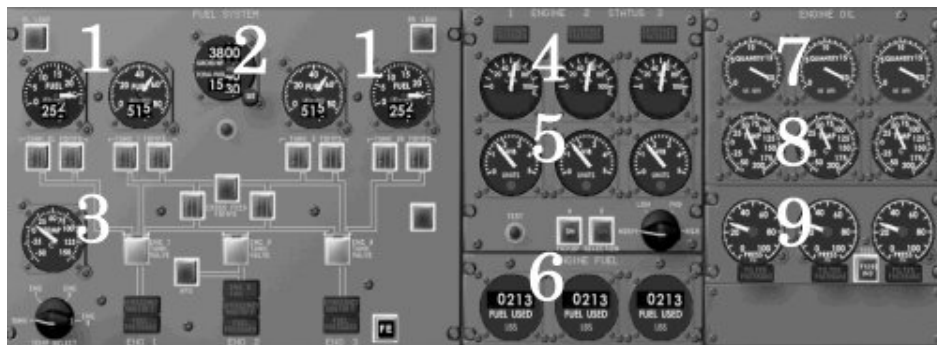
Click icon  or press Shift & 4 Key combination to display/hide the Panel.

1. Ignition Switch
2. Engine Starter Switches
3. Probe Heat Switches
4. Anti-Ice Switches



FE Panel

Click icon  or press Shift and 5 Key combination to display/hide the Panel

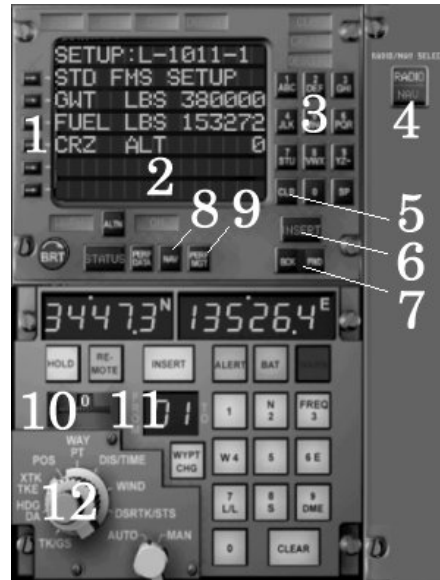


1. Fuel Gauges
2. Total Fuel Gauge
3. Fuel Temperature Gauge
4. N2 Gauges
5. Engine Vibroscope
6. Fuel Used Gauges
7. Oil Quantity Gauges
8. Oil Temperature Gauges
9. Oil Pressure Gauges

FMS/CDU Panel

Click icon  or press Shift and 6 Key combination to display/hide the Panel

1. Index Buttons.
2. Data Screen
3. Alphanumeric Keypad
4. RADIO/NAV Switch
5. Clear Button
6. Insert Button
7. Page FWD BCK Button
8. NAV Button
9. PM (Performance Management) Button
10. Waypoint Selector
11. FROM-TO Display
12. Data Selector



Data	Data in Left Data Display	Data in Right Data Display
TK / GS	Track Angle	Ground Speed
HDG / DA	True Heading Angle	Drift Angle
XTE / TKE	Cross Track Distance	Track Angle Error
POS	Latitude of current position	Longitude of current position
WAYPT	Latitude of selected WAYPT	Longitude of selected WAYPT
DIST/TIME	Distance to the next WAYPT	Time to the next WAYPT
WIND	Wind Direction	Wind Velocity
DSRTK/STS	Desired Track	INS Status (not simulated)

Inertial Navigation System (INS) / Control Display Unit (CDU)

An inertial navigation system measures the position and attitude of a plane by measuring the accelerations and rotations applied to the system's inertial frame. INS is widely used for the navigation of a plane, because it is a self-contained system and does not need to refer to other items beyond itself. Control Display Unit (CDU) provides pilot interface to the inertial system, thereby the pilot is able to feed in the coordinate of the waypoint into the system. INS in a real life is divided into various units, and the manipulation of it is very complex. INS of this product was simplified for anyone to easily enjoy the function of INS.

Tutorial Flight

Leg: RJTT to RJOO

Route: HAYAMA Two Departure - YOKOSUKA Transition - HAMAMATSU -
KOWA - OHDAI - YAMAT – IKOMA

Waypoint List:

Waypoint	Lat.	Long.	Dist.
1. RJTT (TOKYO)*	N35 33.2	E139 46.9	
2. KISARAZU (KZE)	N35 24.1	E139 54.2	10
3. TAURA	N35 19.3	E139 43.8	10
4. YOKOSUKA (HYE)	N35 15.3	E139 35.3	8
5. HAMAMATSU (LHE)	N34 44.9	E137 40.8	99
6. KOWA (XMC)	N34 42.3	E136 57.5	36
7. OHDAI	N34 29.4	E136 13.7	38
8. YAMAT	N34 29.5	E135 47.2	22
9. IKOMA	N34 37.5	E135 37.7	11
1. OSAKA NDB (RK)	N34 41.2	E135 33.1	5
2. RJOO (OSAKA)**	N34 47.1	E135 26.3	

* Airport Reference Point

** Airport Reference Point

Note:

The LAT/LONG of any waypoint can be retrieved from the Worldwide Waypoint Data Base. If you need any other waypoint information, conduct a search through the page on our Web site.

http://www.aerosim.co.jp/eigo/etc/search_nav_1.htm

Our plane is being parked at Spot 10 of Tokyo International Airport. Make sure that engines are not running, and parking brakes are set.

Click icon (INS/CDU) to display CDU. (Or press Shift & 7 key combination). First off, rotate the Data Selector to [WAYPT]. Now, our ramp position is shown on left/right data displays, while the waypoint selector is being set to 0. Take note of this ramp coordinate.

Click on the waypoint selector to select the waypoint 1, and then we enter the data of departing airport. On the above waypoint list, LAT/LONG listed for RJTT is the coordinate of airport reference point. What we need to enter for the waypoint 1 is the ramp coordinate of which you took a note.



The ramp coordinate can be obtained by pushing SHIFT+Z on your PC keyboard. (If you are departing from the Tokyo Intn'l Airport of AeroSim's made scenery, the coordinate of spot 10 is: N35 32.8 E139 47.0).

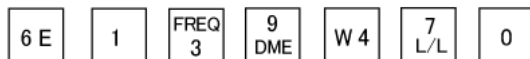
Firstly, pushing the CDU keyboard in the following sequence shall enter LAT.



After you see that the LAT is correctly shown on left data display, press the INSERT button to execute the input.



Secondly, pushing the CDU keyboard in the following sequence shall enter LONG.



After you see that the LONG is correctly shown on the right data display, press the INSERT button to execute the input. If you made a mistake in input, use CLEAR button to delete them all, and redo the input from the beginning.

After we have inserted the LAT/LONG ramp position as waypoint 1, we click on the waypoint selector to select the waypoint 2. Then, the LAT/LONG of KZE VOR shall be entered in a same manner as what we did for the waypoint 1. We will have to repeat this insertion procedure for all first nine waypoints.



Note. The INS holds 9 waypoints only. If you fly to a destination that requires more than 9 waypoints, you will have to program the used waypoints as you fly. For instance, when you are on track between waypoint 6 to 7, you may use the waypoint from 1 thru 5 for insertion of the leftover waypoints. The INS will automatically switch from 9 to 1 during the flight as needed.

Now we perform the insertion check in reference with the interval distance. With the data selector on DIS/TIME, we push the WYPT CHG key. If we want to check the distance from present position (the waypoint 1, ramp position) to KZE VOR, then press 1 and 2 on the CDU keyboard. As soon as a leg appears as 1-2 on the FROM-TO display we check its distance on the left data display. If 10 are shown, the waypoint coordinates insertion has been correct. (Consider that plus or minus 1 to 2 nm can be within tolerance).

After all, we push the CLEAR key to exit from the WAYPT CHG mode. (See to it that WAYPT CHG light goes off).



Now, it is a time for us to leave from Tokyo for Osaka. Start up your engines and obtain the pushback clearance from the Ground Control. After takeoff from runway 34R, we normally make a right climbing turn to join SID Hayama 2 DEP. Today, we deviate a little from the standard procedure.

After the AUTOPILOT has been engaged, we move the Navigation Mode Selector to INS. Aircraft is now start turning to the right and steering towards KZE VOR.



Note that INS appears on the HSI annunciator, and the distance shown in NM on the HSI is changed to the remaining distance to the next waypoint.

The deviation bar on HSI indicates the deviation of the course from the preset course.



In the meantime, we rotate the data selector on CDU to each mode and see what can be displayed on the left/right data displays.

TK/GS mode (Track Angle/Ground Speed)

True track angle from 0 to 359.9 degrees is displayed in the left data display. Ground speed is displayed in the right data display. Ground speed is displayed also on the HSI.

HDG/DA mode (Heading/Drift Angle)

True Heading angle from 0 to 359.9 degrees is displayed in the left data display. Drift angle from 0 to 180 degrees Left (L) or Right (R) is displayed in the right data display.

XTK/TKE mode (Cross track distance/Track angle error)

Cross track distance in NMs Left (L) or Right (R) is displayed in the left data display. Track angle error from 0 to 180 degrees Left (L) or Right (R) of the desired track angle is displayed in the right data display. For instance, 1.0R is displayed in the left data displays and 0R (degree) is displayed in the right data display, meaning that the aircraft is positioned at 1.0nm right of the course with no angle error.

POS mode (Position)

Latitude from 90deg S to 90deg N is displayed in the left data display and longitude from 180deg E to 180deg W is displayed in the right data display.

DIS/TIME mode (Distance/Time)

Distance from present position to the next waypoint is displayed in the left data display, and time from present position to the next waypoint, based on current ground speed, is displayed in right data display.

WIND mode (Wind speed and Direction)

Wind direction from 0 to 359 degrees is displayed in the left data display. Wind speed in knots is displayed in the right data display.

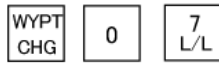
DSRTK/STS mode (Desired track/Status)

Desired track angle from 0 to 359 degrees with respect to True North is displayed in the left data display. System status is displayed in the right data display. (Not simulated in INS of this product)

Alert Light on the CDU illuminates amber 2 minutes before the plane reaches the next waypoint. INS alert light on the HSI also illuminates in a same manner.

Now, we have passed over YOKOSUKA VOR and are proceeding towards HAMAMATSU VOR. As we have passed over the waypoint 4, which is YOKOSUKA VOR, we may now use the waypoint numbers, 1, 2 and 3 for the insertion of leftover waypoints. What remained for further insertion are NDB RK and Osaka International Airport. Click on the waypoint selector to select the waypoint 1, and then we enter the LAT/LONG of NDB RK. With the waypoint 2 on the waypoint selector, we enter the LAT/LONG of Osaka International Airport. LAT/LONG, which is listed for RJOO on our waypoint list, is the coordinate of Osaka airport reference point. Usually, we enter the LAT/LONG of parking spot at the destination airport. The INS will automatically switch from 9 to 1 as needed during the flight.

WE were cleared by Tokyo ACC to proceed direct to OHDAI. By using the WYPT CHG KEY on the CDU, OHDAI must be set to our next waypoint. Now that our present position is being set to ZERO, and OHDAI has been preset to the waypoint 7, we push the keys in the following sequence.



After having confirmed that 0 and 7 are displayed in the FROM-TO window on the CDU, then press the INSERT button. In doing so, our plane is commanded by INS to proceed from present position direct to OHDAI. We are turning to left accordingly.



Soon after, Tokyo ACC told us that we should cross OHDAI at 13,000 feet. We can use the INS data in order to estimate the point from OHDAI to begin our descent, referring to the following rule of thumb.

Descent Rate (Rule of Thumb)

To maintain a 3-degree glide slope descent, multiply the groundspeed by 5. The resulting number is the rate of descent to fly.

(Ex. Groundspeed = 400 knots x 5 = 2000 fpm rate of descent to maintain 3 degrees glide slope)

Use 3 instead of 5 for a 2-degrees glide slope descent, and
Use 7 for a 4-degrees glide slope descent.

Now that we are cruising at FL280, we need to lose 15,000 feet to reach OHDAI at 13,000 feet. With VS of 2000fpm, it will take 7.5 minutes for descending from 28,000 feet to 13,000 feet.

Rotate the Data Selector on CDU to DIS/TIME mode. We begin our descent when time to OHDAI is shown to be 7.5 in the right data display.

The waypoint #9 (IKOMA) is a fix located on the ILS final approach course for runway 32L of Osaka. The INS will, therefore, guide our plane to meet the ILS beam at IKOMA.

Tune in ILS FREQ 110.10MHz to NAV1, and we rotate the NAV Mode Selector to LOC when ILS LOC is captured. We move the NAV Mode Selector to ILS when ILS GP is perceived to accomplish the ILS approach for landing on runway 32L of Osaka International Airport.



List of Waypoint for City Pairs

RJTT to RJCC

Waypoint

1.RJTT (TOKYO Intl APT)	N35 33.2	E139 46.9
2.KISARAZU (KZE)	N35 24.1	E139 54.2
3.MORIYA (SNE)	N35 56.1	E139 58.9
4.NASU (NZE)	N36 47.0	E140 02.1
5.KAEDE	N38 20.7	E140 27.4
6.PEONY	N39 50.0	E140 52.4
7.TOHOKU (MWE)	N40 48.5	E141 09.4
8.NAVER	N42 07.7	E141 31.5
9.CHITOSE (CHE)	N42 42.0	E141 41.2
1.RJCC (NEW CHITOSE Intl APT)	N42 46.5	E141 41.5

RJTT to RJFF

Waypoint

1.RJTT (TOKYO Intl APT)	N35 33.2	E139 46.9
2.CANAL	N35 28.3	E139 42.0
3.ZAMA (DF)	N35 34.8	E139 22.6
4.AKANE	N35 31.9	E137 30.1
5.GUJYO	N35 21.8	E136 34.6
6.HIKNE	N35 16.6	E136 06.8
7.CLOVE	N34 49.4	E133 51.2
8.BASIL	N34 30.9	E132 25.7
9.TOYOTA (TTE)	N34 11.4	E131 01.0
1.KOUNO	N34 04.9	E130 34.3
2.OKINO	N33 55.2	E130 13.2
3.FUKUOKA (DGC)	N33 40.6	E130 23.4
4.RJFF (FUKUOKA Intl APT)	N33 35.2	E130 27.0

RJTT to ROAH

Waypoint

1.RJTT (TOKYO Intl APT)	N35 33.2	E139 46.9
2.MIURA	N35 01.5	E139 41.0
3.SAKAK	N33 43.2	E137 47.8
4.TAPOP	N32 40.0	E136 07.9
5.GURAR	N31 14.2	E133 59.8
6.SABAN	N29 46.2	E131 52.9
7.POMAS	N28 30.2	E130 08.7
8.ERABU (ONC)	N27 26.0	E128 41.9
9.NAHA (NHC)	N26 12.5	E127 38.6
1.ROAH (NAHA Intl APT)	N26 11.8	E127 38.8

RJOO to RJTT

Waypoint

1.RJOO (OSAKA Intl APT)	N34 47.1	E135 26.4
2.ASUKA	N34 46.0	E136 01.9
3.SHTLE	N34 49.8	E136 56.9
4.HAMAMATSU (LHE)	N34 44.9	E137 40.8
5.SAGRA	N34 48.9	E138 25.8
6.OSHIMA (XAC)	N34 42.7	E139 24.8
7.SPENS	N34 44.4	E139 38.4
8.WESTN	N34 57.3	E139 59.7
9.KANOH	N35 18.8	E139 58.0
1.RJTT (TOKYO Intl APT)	N35 33.0	E139 46.8

RJOO to RJCC

Waypoint

1.RJOO (OSAKA Intl APT)	N34 47.1	E135 26.4
2.ASUKA	N34 46.0	E136 01.9
3.NAGOYA (KCC)	N35 15.9	E136 54.9
4.NIIGATA (GTC)	N37 57.5	E139 06.9
5.AKITA (ATE)	N39 42.7	E140 03.7
6.AOMORI (MRE)	N40 44.3	E140 42.3
7.NASEL	N42 07.7	E141 24.6
8.CHITOSE (CHE)	N42 42.0	E141 41.2
9.RJCC (NEW CHITOSE Intl APT)	N42 46.5	E141 41.5

RJOO to RJFF

Waypoint

1.RJOO (OSAKA Intl APT)	N34 47.1	E135 26.4
2.SUMAR	N34 42.6	E135 00.8
3.SETOH	N34 58.5	E134 27.9
4.SOUJA	N34 37.6	E133 44.4
5.TOYOTA (TTE)	N34 11.4	E131 01.0
6.KOUNO	N34 04.9	E130 34.3
7.OKINO	N33 55.2	E130 13.2
8.FUKUOKA (DGC)	N33 40.6	E130 23.4
9.RJFF (FUKUOKA Intl APT)	N33 35.2	E130 27.0

RJFF to RJTT

Waypoint

1.RJFF (FUKUOKA Intl APT)	N33 35.2	E130 27.0
2.MIKNI	N33 09.5	E130 43.0
3.OITA (TAE)	N33 13.2	E131 42.2
4.IGOSO	N33 46.7	E133 48.0
5.HALKA	N34 14.8	E134 36.8
6.FLUTE	N34 32.3	E136 57.8
7.VIOLA	N34 32.9	E139 03.4
8.OSHIMA (XAC)	N34 42.7	E139 24.8
9.SPENS	N34 44.4	E139 38.4
1.WESTN	N34 57.3	E139 59.7
2.KANOH	N35 18.8	E139 58.0
3.RJTT (TOKYO Intl APT)	N35 33.0	E139 46.8

RJFF to ROAH

Waypoint

1.RJFF (FUKUOKA Intl APT)	N33 35.2	E130 27.0
2.MIKNI	N33 09.5	E130 43.0
3.KAGOSHIMA (HKC)	N31 41.8	E130 35.0
4.SAZMA	N31 04.5	E130 18.1
5.BOMAP	N30 00.2	E129 49.5
6.ANOXA	N28 59.3	E129 22.6
7.MEKAX	N28 26.9	E129 08.4
8.HACHA	N28 09.4	E129 00.9
9.ERABU (ONC)	N27 26.0	E128 41.9
1.NAHA (NHC)	N26 12.5	E127 38.6
2.ROAH (NAHA Intl APT)	N26 11.8	E127 38.8

RJFF to RJCC

Waypoint

1.RJFF (FUKUOKA Intl APT)	N33 35.2	E130 27.0
2.TOYOTA (TTE)	N34 11.4	E131 01.0
3.MIHO (JEC)	N35 31.9	E133 05.6
4.MIYAZU (YME)	N35 28.8	E135 08.2
5.KOMATSU (KMC)	N36 23.8	E136 24.3
6.NIIGATA (GTC)	N37 57.5	E139 06.9
7.AKITA (ATE)	N39 42.7	E140 03.7
8.AOMORI (MRE)	N40 44.3	E140 42.3
9.NASEL	N42 07.7	E141 24.6
1.CHITOSE (CHE)	N42 42.0	E141 41.2
2.RJCC (NEW CHITOSE Intl APT)	N42 46.5	E141 41.5

RJCC to RJTT

Waypoint

1.RJCC (NEW CHITOSE Intl APT)	N42 46.5	E141 41.5
2.TOBBY	N41 55.1	E141 45.6
3.LARCH	N41 30.2	E141 47.9
4.PANSY	N40 40.0	E141 19.2
5.CANNA	N37 55.6	E140 41.5
6.DAIGO (GOC)	N36 44.7	E140 21.0
7.AMI (TLE)	N36 01.3	E140 12.3
8.RJTT (TOKYO Intl APT)	N35 33.0	E139 46.8

RJCC to RJOO

Waypoint

1.RJCC (NEW CHITOSE Intl APT)	N42 46.5	E141 41.5
2.HAKODATE (HWE)	N41 46.4	E140 49.9
3.OBAKO	N40 04.4	E140 03.3
4.NIIGATA (GTC)	N37 57.5	E139 06.9
5.AZUMI	N36 28.9	E137 54.6
6.MATSUMITO (MBE)	N36 09.4	E137 55.2
7.KOWA (XMC)	N34 42.3	E136 57.5
8.OHDAI	N34 29.4	E136 13.7
9.YAMAT	N34 29.5	E135 47.2
1.IKOMA	N34 37.5	E135 37.7
2.RJOO (OSAKA Intl APT)	N35 33.0	E139 46.8

ROAH to RJTT

Waypoint

1.ROAH (NAHA Intl APT)	N26 11.8	E127 38.8
2.POMAS	N28 30.2	E130 08.7
3.SABAN	N29 46.2	E131 52.9
4.GURAR	N31 14.2	E133 59.8
5.DEMPA	N32 06.7	E135 17.5
6.TAPOP	N32 40.0	E136 07.9
7.SAKAK	N33 43.2	E137 47.8
8.SAKIT	N33 52.2	E138 02.5
9.MIYAKEJIMA (NJE)	N34 20.9	E139 16.3
1.PERRY	N34 32.0	E139 45.4
2.BOSOH	N34 36.0	E139 55.9
3.OTAKI	N35 01.7	E140 20.5
4.RJTT (TOKYO Intl APT)	N35 33.0	E139 46.8

ROAH to RJCC

Waypoint

1.ROAH (NAHA Intl APT)	N26 11.8	E127 38.8
2.ERABU (ONC)	N27 26.0	E128 41.9
3.MEKAX	N28 26.9	E129 08.4
4.ANOXA	N28 59.3	E129 22.6
5.BOMAP	N30 00.2	E129 49.5
6.KAGOSHIMA (HKC)	N31 41.8	E130 35.0
7.OITA (TAE)	N33 13.2	E131 42.2
8.KAGAWA (KTE)	N34 12.7	E136 01.3
9.OKAYAMA (OKC)	N34 40.3	E134 00.9
1.MIYAZU (YME)	N35 28.8	E135 08.2
2.KOMATSU (KMC)	N36 23.8	E136 24.3
3.AKITA (ATE)	N39 42.7	E140 03.7
4.AOMORI (MRE)	N40 44.3	E140 42.3
5.NASEL	N42 07.7	E141 24.6
6.CHITOSE (CHE)	N42 42.0	E141 41.2
7.RJCC (NEW CHITOSE Intl APT)	N42 46.5	E141 41.5

RJAA to PHNL

Waypoint

1.RJAA (NEW TOKYO Intl APT)	N35 45.9	E140 23.2
2.CHOSHI (CVC)	N35 43.6	E140 48.0
3.VACKY	N35 45.6	E143 28.7
4.SEALS	N35 43.6	E145 54.1
5.VEPOX	N35 50.4	E149 54.0
6.34N160E	N34 00.0	E160 00.0
7.32N170E	N32 00.0	E170 00.0
8.30N180	N30 00.0	E180 00.0
9.28N170W	N28 00.0	W170 00.0
1.THOMA	N23 56.6	W160 45.8
2.LIH	N21 57.9	W159 20.3
3.BOOKE	N21 27.8	W158 27.0
4.PHNL (HNOLULU Intl APT)	N21 19.1	W157 55.3

RJAA to PGUM

Waypoint

1.RJAA (NEW TOKYO Intl APT)	N35 45.9	E140 23.2
2.CHOSHI (CVC)	N35 43.6	E140 48.0
3.PAPAS	N35 22.7	E140 57.0
4.APPLE	N35 00.3	E141 06.5
5.TANUK	N34 20.9	E140 03.0
6.TEMAR	N33 20.3	E140 06.4
7.UKATA	N30 00.2	E140 57.2
8.VASKO	N25 00.3	E142 02.2
9.OMLET	N21 00.0	E142 59.4
1.PAYEE	N17 42.7	E144 32.1
2.NIMITZ (UNZ)	N13 27.3	E144 44.0
3.PGUM (GUAM Intl APT)	N13 29.0	E144 47.8

RJAA to VHHH

Waypoint

1.RJAA (NEW TOKYO Intl APT)	N35 45.9	E140 23.2
2.CHOSHI (CVC)	N35 43.6	E140 48.0
3.PAPAS	N35 22.7	E140 57.0
4.APPLE	N35 00.3	E141 06.5
5.TANUK	N34 20.9	E140 03.0
6.MIYAKEJIMA (MJE)	N34 07.1	E139 29.9
7.SAKIT	N33 52.2	E138 02.5
8.KUSHIMOTO (KEC)	N33 26.9	E135 47.7
9.JAKAL	N33 03.7	E134 14.1
1.SHIMIZU (SUC)	N32 45.4	E132 59.8
2.KAGOSHIMA (HKC)	N31 41.8	E130 35.0
3.RUSAR	N29 51.9	E127 50.2
4.AKBAS	N29 35.2	E127 27.9
5.SAPET	N28 38.2	E126 07.9
6.BULAN	N27 05.5	E124 00.0
7.OSTAR	N26 19.9	E123 00.0
8.SHARK	N25 50.0	E122 21.5
9.ANPU (APU)	N25 10.6	E121 31.3
1.HOULUNG (HLG)	N24 38.4	E120 47.0
2.APPLE	N24 20.8	E120 27.5
3.MAGONG (MKG)	N23 35.7	E119 38.2
4.ELATO	N22 20.0	E117 30.0
5.MAGOG	N22 17.8	E115 49.5
6.CHEUNG CHAU (CH)	N22 13.2	E114 01.8
7.VHHH (HONG KONG Intl APT)	N22 18.5	E113 54.1

PHNL to RJAA

Waypoint

1.PHNL (HNOLULU Intl APT)	N21 19.1	W157 55.3
2.PUPPI	N21 55.3	W161 40.8
3.SYVAD	N21 55.5	W162 45.5
4.170W21N	N21 00.0	W170 00.0
5.18021N	N21 00.0	W180 00.0
6.170E21N	N21 00.0	E170 00.0
7.160E23N	N23 00.0	E160 00.0
8.155E2436N	N24 36.0	E155 00.0
9.150E26N	N26 00.0	E150 00.0
1.KAKNI	N30 00.2	E147 37.8
2.TONIK	N32 00.2	E145 59.8
3.BEGAD	N33 23.2	E143 14.8
4.ADKAK	N33 54.2	E142 09.8
5.SUNNS	N34 48.3	E141 44.3
6.PETAL	N35 06.7	E141 25.8
7.LIBRA	N35 22.1	E141 10.1
8.RJAA (NEW TOKYO Intl APT)	N35 45.9	E140 23.2

VHHH to RJAA

Waypoint

1.VHHH (HONG KONG Intl APT)	N22 18.5	E113 54.1
2.ELATO	N22 20.0	E117 30.0
3.MAGONG (MKG)	N23 35.7	E119 38.2
4.ANPU (APU)	N25 10.6	E121 31.3
5.BULAN	N27 05.5	E124 00.0
6.RUSAR	N29 51.9	E127 50.2
7.KAGOSHIMA (HKC)	N31 41.8	E130 35.0
8.SHIMIZU (SUC)	N32 45.4	E132 59.8
9.KUSHIMOTO (KEC)	N33 26.9	E135 47.7
1.MIYAKEJIMA (MJE)	N34 07.1	E139 29.9
2.ORGAN	N34 44.1	E140 17.1
3.MAMAS	N34 49.7	E140 31.9
4.VENUS	N35 10.7	E140 44.3
5.RJAA (NEW TOKYO Intl APT)	N35 45.9	E140 23.2

Note:

The LAT/LONG of any waypoint can be retrieved from the Worldwide Waypoint Data Base. If you need any other waypoint information, conduct a search through the page on our Web site.

http://www.aerosim.co.jp/eigo/etc/search_nav_1.htm

Flight Management System (FMS)/Control Display Unit (CDU)

Since the early 1970's, the Jetliners that flew the intercontinental routes have been equipped with INS. The INS was most commonly used equipment for air navigation of that age. However, the Lockheed L1011 had the system with FMS that was connected to the INS. This had the function that made possible to fly by selecting the route that had been pre-stored in the database. This was in no way inferior to the congener used for next generation's jetliner.



The FMS/CDU in this product was made in an effort to bring it as close as to real thing, however, the system was simplified to an extent that anyone can easily manipulate the system for LNAV and VNAV navigation. Let us explain how to make use of this excellent equipment along the flight from Tokyo International Airport to Fukuoka Airport.

Tutorial Flight:

Leg: RJTT to RJFF Route: AS_TF1 RNAV Route Y20.
 HND-SID (ZAMA 6 DEP) – DF – AKANE – GUJYO – HIKNE – CLOVE –
 BASIL – TTE – KOUNO – OKINO ARR.

Our plane is being parked at GATE 5 of Tokyo International Airport. Make sure that engines are not running, and parking brakes are set.

Click on Icon (FMS/CDU) to display FMS/CDU. It will appear on the Left/Upper corner. It can be resized and dragged around by the mouse to a convenient location on your panel. First page on the FMS data display is for the performance management (PERF MGT). The 3RD line from the top indicates the Gross Weight. Go to FS2004 menu of Aircraft – Fuel and Payload. Change fuel load to 30% in all fuel tanks. 30% of fuel load makes the actual gross weight of 347,945 lbs. This actual GWT shall be entered into FMS.

Push the index button  (Line 2 Key) to input the Actual Gross Weight. When we pushed it, the GWT changes to Zero, and  (INSERT) button is lit. Pushing the command input keyboard in the following sequence





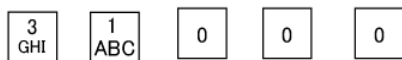



enter the Actual GWT. If we made an error for an input, use CLR key to delete them all and reenter the GWT. When input was correct, push INSERT button.




The 4th line from the top indicates the amount of fuel being loaded. Loaded fuel amount can not be changed by FMS. When we need to change the fuel load, go to FS2004 menu - Aircraft - Fuel and Payload.

The 5th line from the top indicates cruising altitude. Push the index button (Line 4 Key) to input the flight-planned altitude, e.g. FL310. Pushing the command input keyboard in the following sequence



enter the flight-planned altitude. Do not forget to push INSERT button.


Next step to be taken is the setup of flight plan route. Call for NAV SELECT screen by pushing the  button.

In initial stage, nothing can be done unless we press the index button (Line 5 Key) for NAV START.

When we pushed Line 5 Key, NAV START screen will appear. Check the displayed GMT, and if it is correct, then push Line 3 Key to call for EXECUTE? on the bottom line of the screen.

Execute it by pushing the Line 6 Key. When we have executed it, the FLT PLAN BY screen will appear.

This FLT PLAN BY screen can also be retrieved by pushing the index button (Line 4 Key) for RTE SEL on NAV SELECT screen.

Use  button to turn over pages, as needed. When we found the Tokyo to Fukuoka route, which is TF1, select it by pushing the index button for that route. NAV SELECT screen will then appear again. Push the index button (Line 1 Key) to calls for WPT ETA DIST screen. See to it that the route listed on this screen is what you are intended to fly.



The WPT ETA DIS screen (FLT PLAN) will be shown with the waypoints, ETA (Estimated Time of Arrival) and the Distance information.

Only 3 letters or less are usable as waypoint name in the list. The WPT LIST normally consists of more than one page.

Use **BCK FWD** button to turn over pages. Push the index button for a specific WPT. We will then get the information of that WPT.

Push BCK part of **BCK FWD** button to go back to WPT DIST DIS screen.

Now, we push **PERF MGT** button to go back to the first page of PERF MGT.

Push FWD part of **BCK FWD** button to go to the second page of PERF MGT. With this page, we set the flight performance of Climb and Cruise phase.

The 2nd line from the top, CLB MIN COST, is the current setup of CLIMB SPEED. Push the Index Button (Line 1 Key) to get the CLIMB SPEED screen. We will have 3 options.

MIN COST

Best Cost Performance Climb (This does not mean the least fuel consumption)

250/300/.80

250KT to 10000 FT, 300 KT above 10000 FT and M0.80 in Mach OPR ALT.

250/350/.82

250KT to 10000 FT, 350 KT above 10000 FT and M0.82 in Mach OPR ALT.

For the tutorial flight, we choose CLM MIN COST.



The 3rd line from the top, CL1, is the current setup of the CLIMB RATING. Push the Index Button (Line 2 Key) to get the CLIMB RATING page. We will find 4 options.



CL1 gives the highest rate of climb, while the DERATE N/A gives the lowest climb rate. In general, CL1 is chosen by the Domestic Flight which operates with relatively low operating weight. Climb Rating can be re-selected even during the flight. For the tutorial flight, we choose CL1.

The 5th line from the top, CRZ MIN COST, is the current setup of the CRUIZE SPEED. Push the Index Button (Line 4 Key) to get the CRUISE OPTION page, in which we will have 4 options.



MIN COST (minimum cost)

Best cruise method in terms of the cost.

HOLD

Speed at the top of climb will be maintained for cruise.

SET MACH

Appropriate Mach Nr for cruise can be set.

SET IAS

Appropriate IAS for cruise can be set

CRUISE OPTION can be re-selected during the flight. We choose MIN COST for the tutorial flight. 6th line from the top, RSRV FUEL 6000, indicates that the FUEL RESERVE is 6000 LBS for the tutorial flight, we leave it as it is.

Push FWD part of BCK FWD button to go to the third page of PERF MGT. With this page, we set the various parameters needed for aircraft when reaching to the End of Descent (EOD).



The 2nd line from the top, MIN COST/250, is the current setup of DESCENT SPEED.

Push the Index Button (Line 1 Key) to get the DESCENT SPEED page. There are 3 options to choose from.

MIN COST/250

Best Cost Performance Speed to 10000 FT, wherefrom 250 KT.

.85/350/250

M0.85 in Mach OPR ALT, and 350KT to 10000 FT, wherefrom 250KT.

.80/320/250

M0.80 in Mach OPR ALT, and 320KT to 10000 FT, wherefrom 250KT.

We choose MIN COST/250 for the tutorial flight.



The 3rd line from the top, E*D 10 AFT TTE, is the current location of End of Descent. This line means that the point of E*D is set to the location of 10nm after the VOR TTE. This data is retrieved from the pre-stored route data registered in FMS. This location can be revised at your choice. Push the Index Button (Line 2 Key) to get the END OF DESCENT page.



Use the Index Button (Line 2 Key) when you need to locate the E*D point at place before reaching the TTE VOR.

Use the Index Button (Line 3 Key) when you need to locate the E*D point at place at or after the TTE VOR. If you enter 10, the E*D point is located to 10 NM after the site of VOR TTE. If you enter 0, the E*D point will be at the site of TTE VOR.



The 4th line from the top, E*D ALT 8000, is current altitude of E*D ALT. The 5th line from the top, E*D IAS 240, means that IAS is 240 KT when the plane reaches to E*D. Both data can be revised as needed.

Now, to the NAV pages, again. Push Key to display NAV SELECT screen on the FMS.

We keep the NAV DATA page open to make various data readily available during the flight. By doing so, we get the necessary NAV data from the various mode and able to change the set up as needed.



The first page of NAV DATA displays the data to the first WPT, KZE. Those data are True Air Speed (TAS), Ground Speed (GS), Wind Direction (MAG) and speed, Drift Angle (DA) and Magnetic Variation (MVR).



The second page of NAV DATA displays the following data to WPT KZE. Cross Track (XTK indicates the deviation angle from the intended course), T/D (Time and Dist to the next WPT), ETA (Estimated Time of Arrival), and DTK (Desired Track).



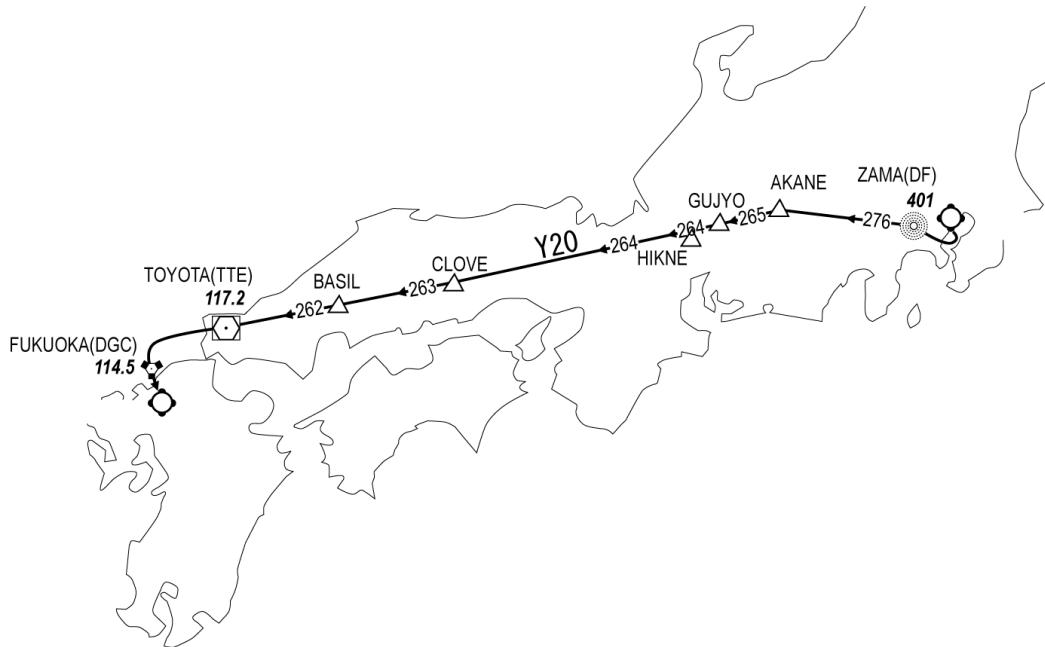
The third page of NAV DATA displays the following data to WPT KZE. LAT (Present Latitude) LONG (Present Longitude) ALT (Cruise Altitude), DTK (Desired Track) and TK (Present Track).



On the ground, NAV DATA will consist of 3 pages. However, one more page from the PERF MGT will be added after takeoff.

Explanation of this fourth page will follow.

Pre-flight Preparation is over, Let's fly Now !!



Before taking off, a few things are to be set on the Autopilot. Set IAS 200 KT (IAS below 3,000 FT), ALT being cleared by ATC (17,000FT for the Tutorial Flight) and HDG 100 (as per SID ZAMA 6 DEP).

Departing traffic from RWY 34R of Tokyo would normally follow the SID ZAMA 6 Departure. For the Tutorial Flight, we would fly by LNAV of FMS.

When NAV is selected on RADIO/NAV switch on the FMS, the navigation data from FMS are fed in H S I. The data from Radio will not be reflected on H S I.

After takeoff, a page of PERF MGT is added to NAV DATA and it is displayed as 4th page of NAV DATA.

The 2nd Line from the top is the CLIMB Mode, and then Cruising ALT comes next, followed by REQ IAS and REQ EPR. The last line indicates the Total Air Temperature (TAT).



This page is normally kept OPEN during the flight.

In good timing (when ALT higher than 1,000 FT, Gear Up, Flaps Up, etc), Autopilot Master Switch is to be engaged, and switch ON the ALT ARM on the Autopilot.

Then, switch on the TM (Throttle Management), ATS (THRUST) and VNAV.

VNAV light is then lit on AFCS, and the plane would start to climb according to the setup made in the PERF MGT of the FMS.

As for the heading after takeoff, the plane will make right climbing turn for heading 100 when you press HDG switch on the Autopilot.

After having confirmed that the NAV is being selected on RADIO/NAV switch on the FMS, press NAV button on the Autopilot in order to engage LNAV.

LNAV light is then lit on AFCS, and the plane would start to fly toward the VOR KZE.

When the plane is climbing through 10,000 FT, IAS will automatically be switched from 250KT to the next IAS, which was set in FMS before the takeoff. The climb rate is suppressed so as to increase the speed to the target speed. This is what we call "Shallow Climb".

A pilot is warned by "ALERT" on H S I, which will be lit when he reaches the point of one minute before the next WPT. The "STATUS Button" on the FMS is also lit in the same manner.



In the meantime, we have reached 17,000 FT. We will maintain this altitude since we get no ATC clearance for any higher altitude yet. Under this circumstance, PERF MGT maintains HOLD ALT/IAS Mode and it is indicated so on the 2nd line from the top.



VNAV and ALT ARM are vanished on AFCS. ALT is in HOLD conditions.

PERF MGT also uses the HOLD ALT/IAS Mode, when aircraft maintains altitude higher than pre-stored altitude in FMS during the descent.




Now that we were cleared for further climb to FL310 by ATC, we enter 31,000 in the ALTITUDE SELECT. Thence, we push ALT ARM switch firstly and push VNAV switch secondly. Aircraft would then start to climb according to the setup of PERF MGT.. Same procedure applies when you change your altitude during cruise due to ATC, or en-route weather.




CHG RTE (Change Route)

Now that we were cleared by ATC to proceed directly to GUJYO, we use CHG RTE mode to comply with this instruction.

Call for NAV SELECT screen by pushing the  button.



Push the index button  (Line 2 Key) to get CHG RTE BY screen.

Then, push the index button (Line 1 Key) to get GO DIRECT screen.



Locate GUJ on the GO DIRECT screen.

Use **BCK FWD** button to turn over pages if GUJ is not listed on the screen.

As we see GUJ on the screen, Push Line 4 Key to select GUJ. Then, [EXECUTE?] appears on the bottom line of the screen.

Then, push Line 6 Key to execute it, i.e. GO DIRECT to GUJ.

When we reached FL310, the 4th page of NAV DATA screen would look like one on the right. The 2nd line indicates the current CRZ method. The 3rd line indicates the cruising altitude. The 4th line indicates required Mach number.

The bottom line indicates that the ETE (Estimated Time En-route) to the Top of Descent is 44 minutes.

During the cruise, when the need for speed change has arisen, then we take the following step to comply with. We push the Line 3 Key for REQ MACH 0.80 on the 4th page of NAV DATA screen,

Then CRUISE OPTION screen opens. Push the Line 3 Key for SET MACH, and enter 8 and 5 by clicking the mouse on the alphanumeric keypad on FMS. End result is that Mach number are changed from 0.80 to 0.85.

Now, we came to a point of 2 minutes before the Top of Descent. See the bottom line of the FMS.

We start the preparation work for descent. We enter 8,000, which is the ALT of End of Descent, in the ALT SELECT.



When we reached the Top of Descent, we commence descent. Firstly, we push the ALT ARM switch to make it ON.



Then, aircraft starts descent. Secondly, we push VNAV when DESCENT TO E*D is displayed on the 2nd line of screen. By doing so, aircraft makes descent with 3 deg glide slope angle.

Note that DIST to E*D has been added to the bottom line of screen.



FMS changes the setup of speed automatically from Mach Number to IAS when aircraft came below Mach OPR ALT. Upon nearing the altitude of 10,000 FT, the Rate of Descent will be adjusted so as to decelerate the speed to 250 KT.



Upon nearing the End of Descent ALT, that is 8,000 FT, the DESCENT TO E*D will be changed to CAPT ALT/IAS on the 2nd line of screen. And the speed will further be decreased to END of DESCENT IAS, that is 240 KT.



When aircraft has reached the End of Descent ALT of 8,000 FT, the FMS screen will look like one to the right. At this time, VNAV stops the function. We need to disengage VNAV to get back Autopilot for the control of Speed and ALT. In order to do so, switch off the Throttle Management Switch (TM). ATS (Thrust) switch will be off in conjunction with the switch off of TM. Put ATS switch back to ON, after you see that required IAS has been properly set in the Speed Selector Window.



We are approaching our destination. We will make an ILS approach to runway 16. We will have to disengage LNAV in good timing to intercept ILS.



First of all, switch off NAV. Then, select RADIO on RADIO/NAV switch on the FMS.



We would be using ILS on NAV1 from now on for landing.

New Route Data for FMS/CDU

You can create your own Route Data, but only if you follow strictly the sample format given below. One FMS Route can consist of maximum 40 waypoints, and one FMS Route Data folder “routes” is able to accommodate 42 routes. You can create the Route Data Folder as many as you want, but put only one FMS Route Data Folder at a time under AS_CL2 directory.

¥Flight Simulator 9

¥Gauges

¥AS_CL2

¥routes*

¥AS_CT1.txt

AS_RTE.txt etc.

*FMS Route Data Folder shall be named “routes”.

Making your own Route Data.

Sample Route Data

WPT	Name	Latitude	Longitude	Altitude	Heading	Mode	Vertical
1	HND	35.542833	-139.802833	0	0	0	0↓
2	KZE	35.401666	-139.903333	0	0	0	0↓
3	CAN	35.471774	-139.695561	0	0	0	0↓
4	DF	35.579774	-139.376249	0	0	0	0↓
5	AKA	35.531254	-137.500870	0	0	0	0↓
6	GUJ	35.364027	-136.577353	0	0	0	0↓
7	HIK	35.276257	-136.112666	0	0	0	0↓
8	CLO	34.824050	-133.853710	0	0	0	0↓
9	BAS	34.515440	-132.428019	0	0	0	0↓
10	TTE	34.190705	-131.016190	2	10	8000	240↓
11	KOU	34.082364	-130.571780	0	0	0	0↓
12	OKI	33.920158	-130.220711	0	0	0	0↓
13	DGC	33.676211	-130.389626	0	0	0	0↓
14	FUK	33.575833	-130.457667	0	0	0	0[EOF]

From the left to right,

WPT Name Latitude Longitude 0 0 0 0LF

WPT name – maximum 3 letters.

LAT/LONG on the first line should be LAT/LONG of the Gate Number or ARP of the Departing Airport. LAT/LONG on the last line should be the LAT/LONG of the Gate Number or ARP of the Destination Airport. FIX name normally consist of 5 letters. Use first 3 letters of the fix name as WPT name. Even if WPT name are duplicated in one route, it does not matter in the FMS of CL2.

Latitude and Longitude..

Use the same format as given sample format, i.e. LAT/LONG degrees in 6 decimals. You have to use the same number of decimals the sample has used and all Eastern Longitudes and Southern Latitudes shall be prefixed by a minus sign.

e.g. N30 15.0 is to be entered as 30.250000 (15.0 divided by 60 = 0.250000)
 S30 45.0 is to be entered as -30.750000 (45.0 divided by 60 = 0.750000)
 E139 54.2 is to be entered as -139.903333 (54.2 divided by 60 = 0.903333)
 W140 23.6 is to be entered as 140.393333 (23.6 divided by 60 = 0.393333)

Four zeros that follow after the longitude can be left as they are, except the line of End of Descent (EOD). The line of EOD looks as follow.

TTE	34.190705	-131.016190	2	10	8000	240
-----	-----------	-------------	---	----	------	-----

TTE	Name of WPT
34.190705	Latitude of WPT
-131.016190	Longitude of WPT
2	2 is to indicate that this is the line of EOD
10	EOD is located at 10nm after TTE.
8000	ALT to be reached at EOD is 8,000 FT
240	IAS to be set at EOD is 240 KT.

Distance from WPT:

When EOD is located at WPT, put ZERO instead of the distance in NM. When EOD is there before reaching WPT, distance in NM shall be prefixed by a minus sign.

Important:

The last line of the route data should always be ended with EOF with no linefeed.

DST Latitude Longitude 0 0 0 0EOF

File Name of the Route Data:

Name the new route in the following format.

AS_TF1.txt

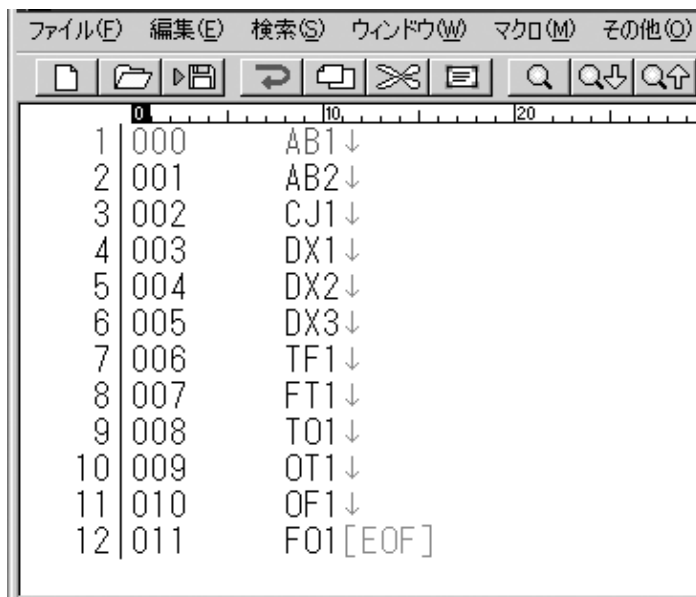
Where T stands for Tokyo and F stands for Fukuoka. The last digit of 1 indicates that this is one of the multiple route from T to F.

Register New Route Data

Of those files available in the routes folder, there is a file named AS_RTE.txt. This is a file to which the new route data should be registered. By doing so, the new route can be retrieved on the FMS screen for use in the cockpit. Otherwise, you will never see your new route in the cockpit.

AS_RTE.txt file should always be kept strictly in the sample format given below. Maximum 42 routes can be registered in one AS_RTE.txt file.

AS_RTE.txt



The screenshot shows a text editor window with a menu bar (File, Edit, Search, Window, Macro, Other) and a toolbar. The main text area contains the following data:

1	000	AB1↓
2	001	AB2↓
3	002	CJ1↓
4	003	DX1↓
5	004	DX2↓
6	005	DX3↓
7	006	TF1↓
8	007	FT1↓
9	008	TO1↓
10	009	OT1↓
11	010	OF1↓
12	011	F01[EOF]

Self-explanatory as may be, the first 3 digits is the route number. After one tab space, there is 3 letters route name. Each line should end with the line feed, and the last line should end up with the end of file (EOF).

Approach & Landing Adventures

As the name speaks for itself, the included adventure is set to start when you are flying around 10000ft after the TOD (top of descent). Kumamoto, Hakodate and Osaka Airport are selected as destinations for L-1011 adventure flight. Narita, Haneda and Fukuoka Airport are the destinations for DC-8. Sapporo, Nagoya and Naha Airport are destined by DC-10. Instrument Approach Charts of these airports (extract from AIP, Japan) are included in this handbook.

In the adventure, two modes are available for you to choose. A pilot mode is for one to act as PF (Pilot Flying) and an observer mode is for the beginner FS2004 fans. The Expert mode is newly implemented in the pilot mode of the adventure. In the new expert mode (of pilot mode), you are the PF and you are the one who shall handle the knob and dial on the MCP to set your heading and altitude. In the normal mode (of pilot mode), you are the PF and your virtual copilot will set for your heading, altitude and radio. Bear in mind that Autopilot and Auto Throttle will automatically be disengaged at first contact with the controller. Switch them back to ON, if you do not want to hand fly.

When you fly in the observer mode, you can observe the flight, not only from within cockpit but from outside of the plane (spot view, tower view of FS2004). Since the dialog of pilots in the cockpit (partly in Japanese) and VHF communication exchanged between pilot and ATC controller (in English) can be heard during the flight, you would be able to follow what's cooking inside the cockpit which can not otherwise be tasted in the default ATC of FS2004. "As Real As It Gets" goes not only for the aircraft, panel, but also the adventure. You'll be handled by ATC exactly in a same manner as to what has been done by actual ATC for the actual air traffic operating at these 9 airports of Japan.

Getting start the Adventure Flight

1. Get into FS2004 and “Select a Flight”
2. Under “Choose a category”, select “AS Classic Liner Vol. 2”
3. Under “Choose a flight”, select one adventure of your choice. Then click FLY NOW!

4. When adventure is started, you will be prompted to choose the mode of adventure, either “Normal Flight” or “Difficult Flight”.

Press Control + “[“ for normal flight (Easy), and Press Control + ”] “ for the difficult flight, which has to be flown by the skilful pilot.

5. Next item to be chosen is either you fly by yourself (Pilot Mode), or just to sit down on the jump seat as an observer in the cockpit. (Observer Mode).

Press Control + “[“ for the Pilot Mode, and Press Control + ”] “ for the Observer Mode.

6. When you selected the Pilot Mode, then you will be prompted to choose either “Normal Mode” or “Expert Mode”.

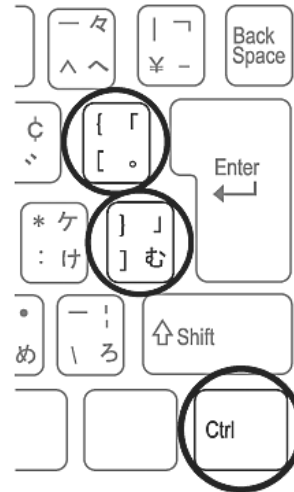
Press Control + “[“ for the Normal Mode, and Press Control + ”] “ for the Expert Mode.

In the Normal Mode, you are the PF (pilot flying) and your virtual co-pilot will set for your heading, altitude and radio, and he even contacts the ATC.

In the Expert Mode, you are the PF and you are the one who shall set for your heading and altitude. (Do - It - Yourself mode)

7. When you decided to be an observer, you will be prompted to disable your joystick. Pressing down the key combination of “Control” and “K” makes your joystick disable. Otherwise, the adventure flight may not be continued. Also, go to Aircraft for realism setting, and then tick the box for autorudder.
8. Adventure flight will be terminated upon safe landing (in case of an observer mode), or upon docking in of your aircraft at the gate of your destination airport (in case of expert mode). You can exit from the adventure flight anytime by pressing down the ESC key.

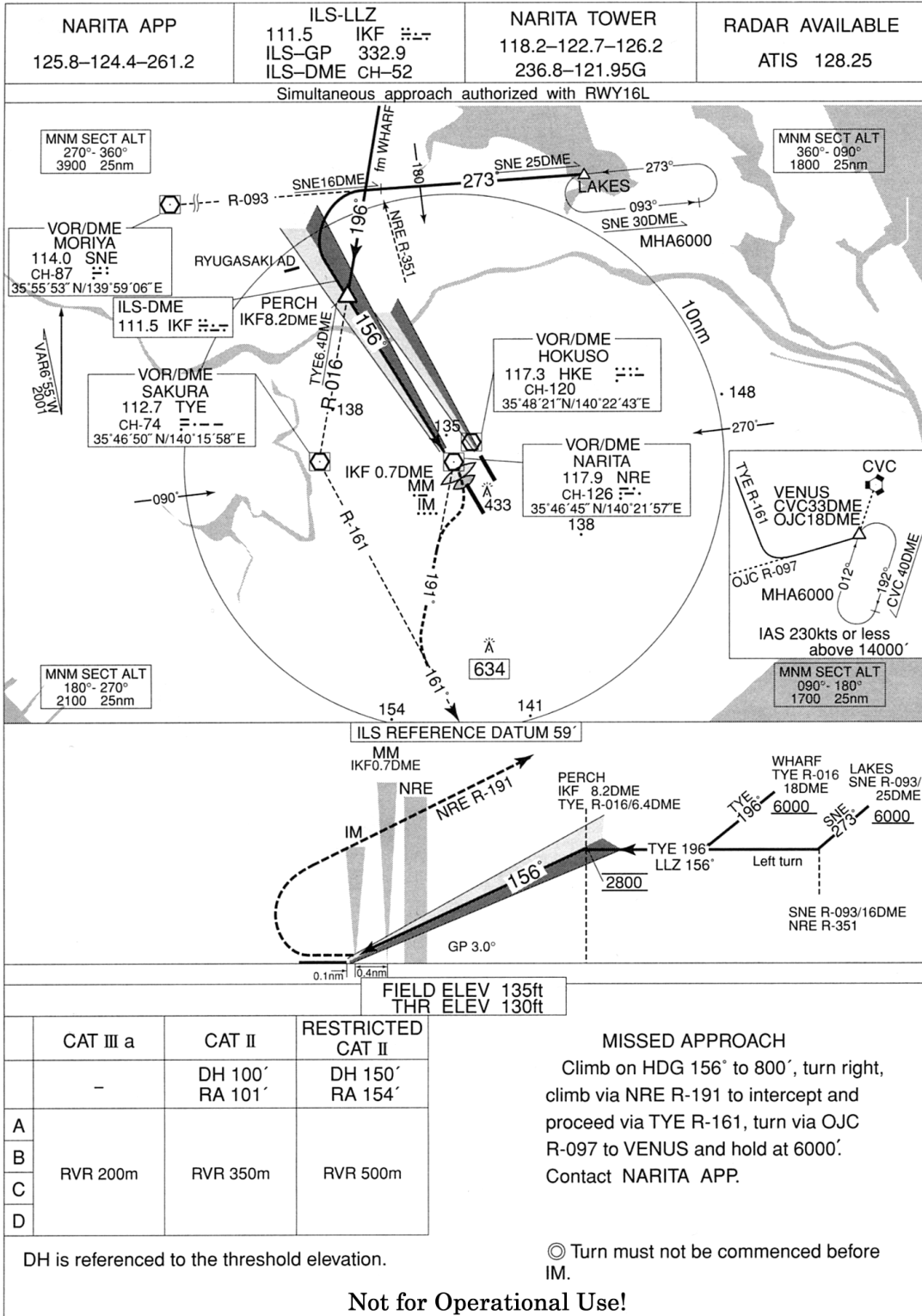
When your aircraft has deviated from the course considerably, adventure program may no longer give you any reaction. Press the ESC key to exit from the program

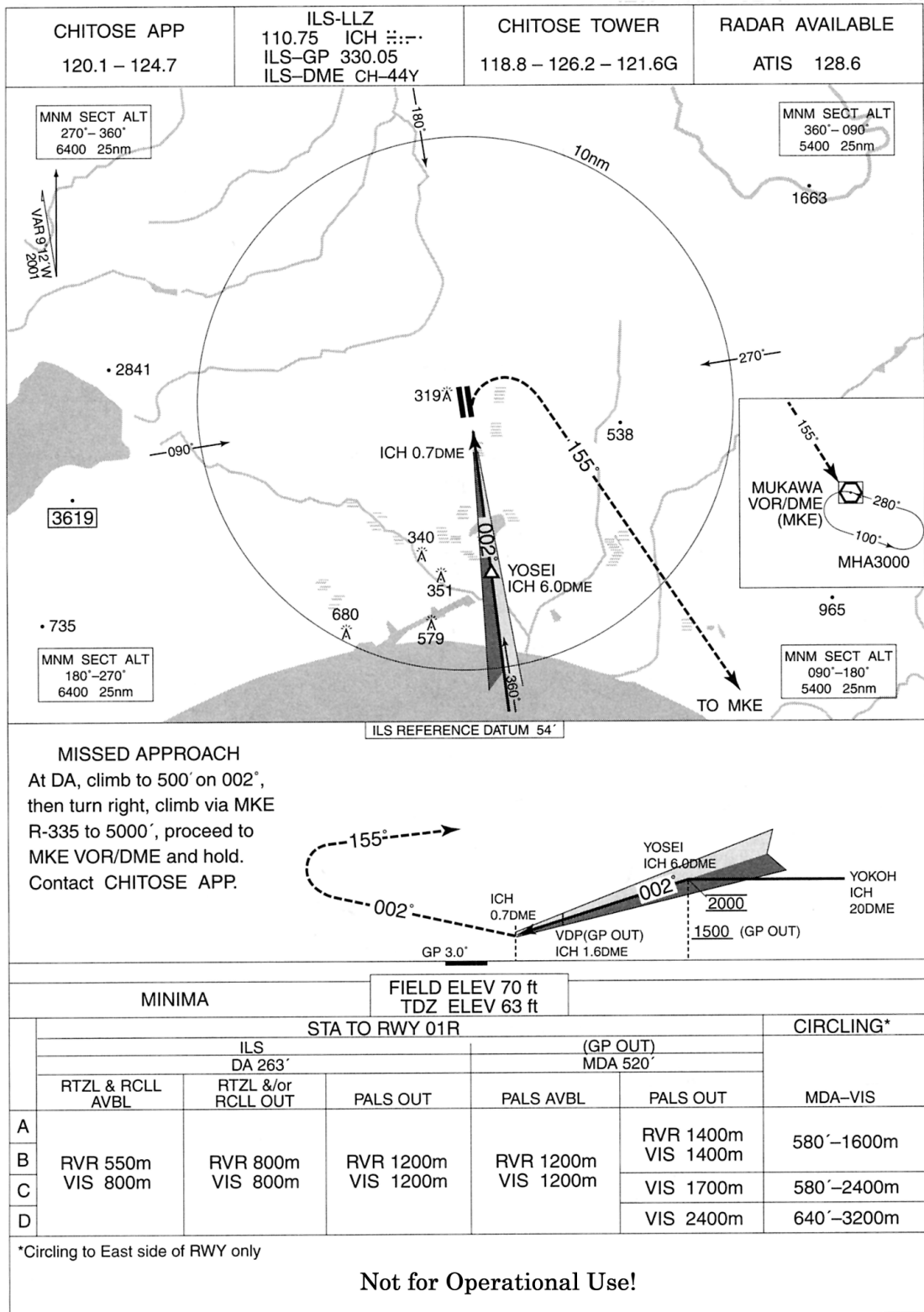


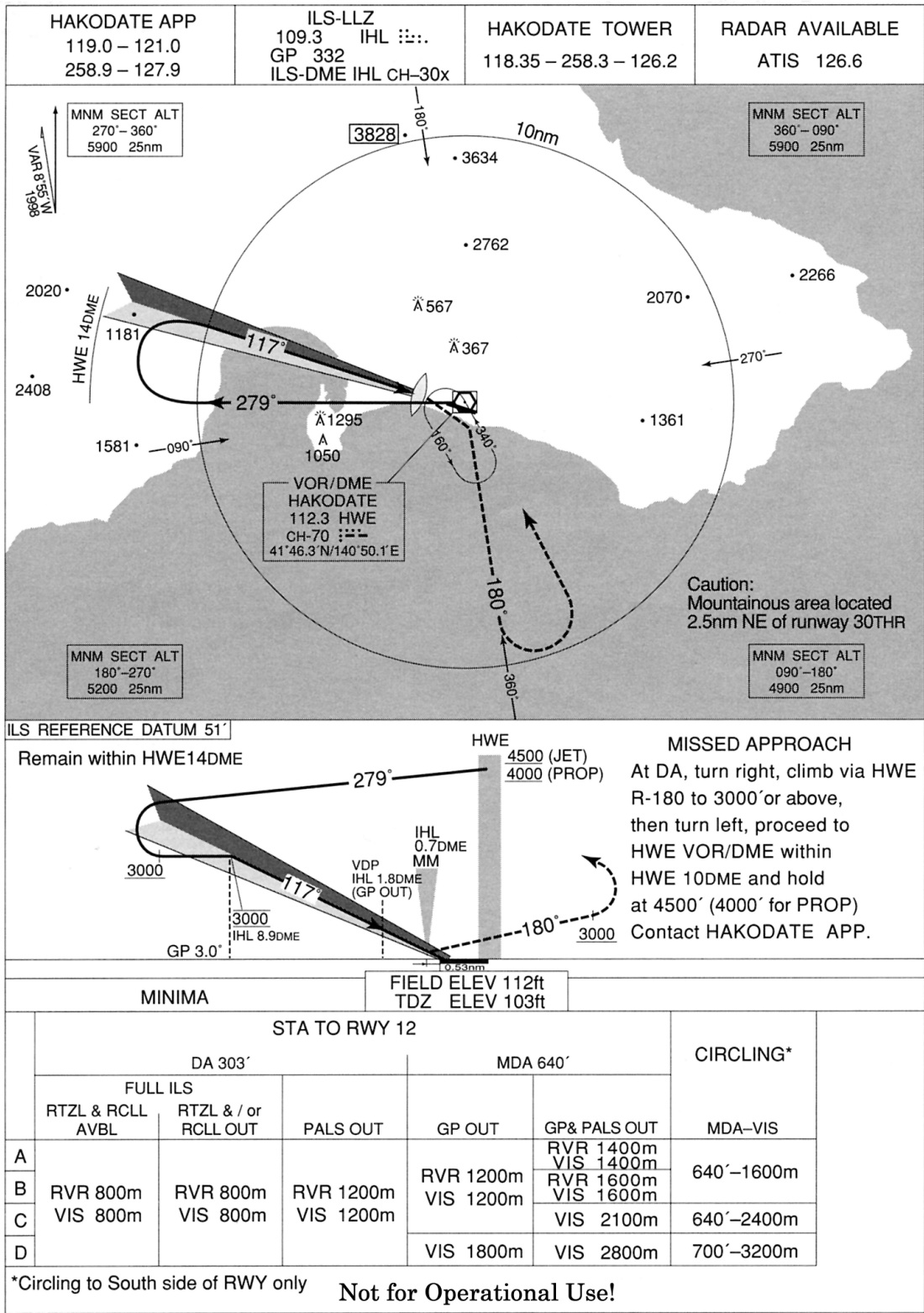
Important things to remember!

1. Be sure to set idling power when you start flying the adventure flight.
2. Be sure not to tick the box for download winds aloft data with real-world weather. If the box is checked, then weather does not change to the weather set by the adventure program.
3. In the observer mode, an aircraft may not be able to land on the centerline of runway, or in the touch zone area of runway due to a fact that the terrain and winds subtly affect the turn and descent rate of an aircraft. Also, same things may happen due to over stress of CPU when the pilot views from the cockpit are frequently changed.
4. Perform calibration of your joystick once in a while. (Ref. FS2004 guide)
5. Flaps setting and radio handling are automatically done (by pilot not flying). During the Adventure flight, flaps setting and frequency tune in of NAVAIDS shall not be done manually.
6. Due to limitation that came with FS2004, the gear extension and parking brake set are no longer controllable by the program code of the adventure. Please, extend the landing gear and set parking brake manually when you are instructed to do so.
7. If you exit the adventure program by pressing the ESC key, while the wav file are being played, this may cause the flaw in subsequent play of the wave files. If this happens, re-launch the FS2004
8. Never fly other than “normal” sim rate. Aircraft flying with the sim rate of x2, x4 and higher will not be controlled by the ATC controller in these add-on adventures. Stick to “normal”, or you will be faded away from the ATC radarscope.
9. When you attempt to operate the adventure flight repeatedly, restart the FS2004 before your next flight. Otherwise, it may be forcibly aborted. Even if this occurs, it can be restarted without any problem.

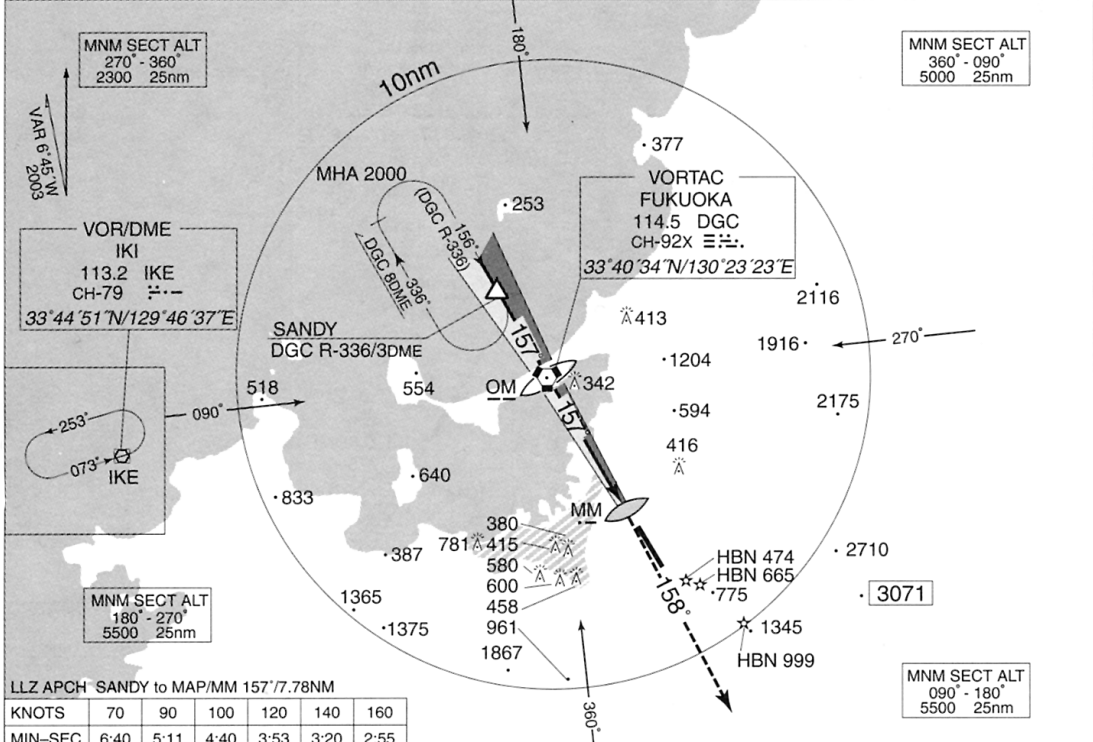
Instrument Approach Charts







FUKUOKA APP 119.1 – 119.65 – 120.7 261.2 – 270.8	ILS-LLZ 111.7 IFO ILS-GP 333.5	FUKUOKA TOWER 118.4 – 126.2 236.8	RADAR AVAILABLE ATIS 127.2
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MISSED APPROACH
At DA, climb via DGC R-158 to YAMEK, cross YAMEK at or above 5000', then turn right to intercept and proceed via IKE R-126 to IKE VOR/DME and hold at 6000'. Contact FUKUOKA APP.

MINIMA	FIELD ELEV 30ft TDZ ELEV 18ft
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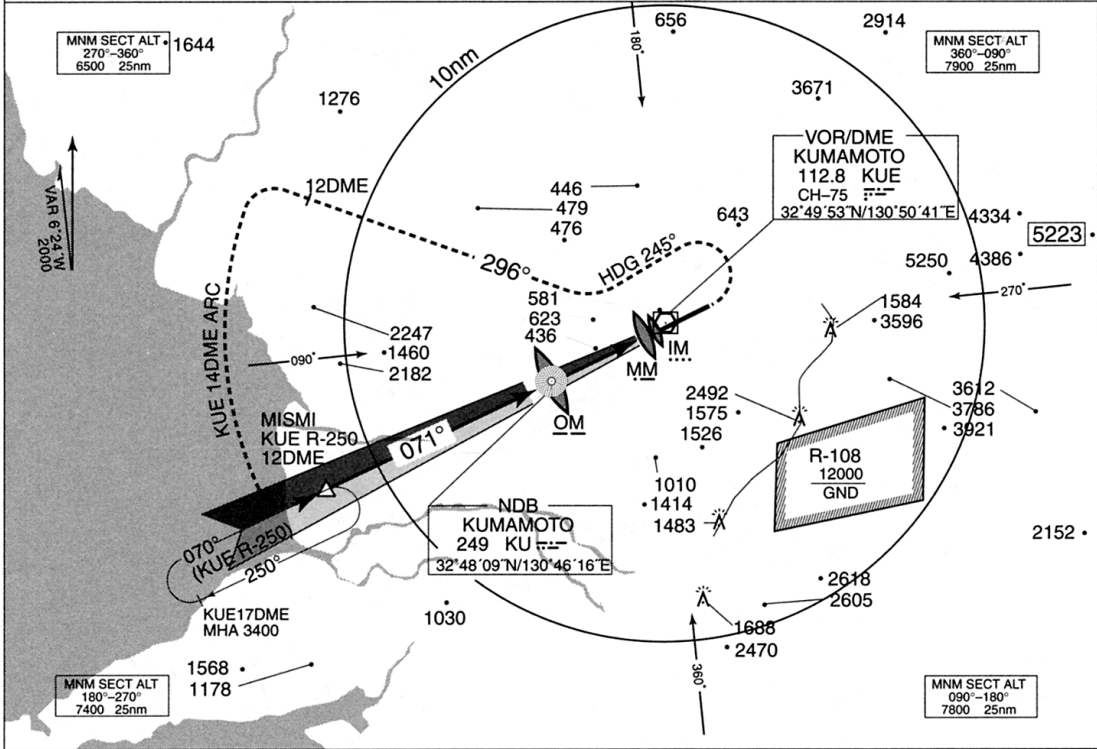
	STA TO RWY 16					CIRCLING*
	ILS			(GP OUT)		
	RTZL & RCLL AVBL	RTZL &/or RCLL OUT	PALS OUT	MM OUT	PALS AVBL	
A						860'-1600m **(860'-2100m)
B	RVR 800m	RVR 800m	RVR 1200m	RVR 1000m	VIS 1200m	VIS 2100m
C	VIS 800m	VIS 800m	VIS 1200m	VIS 1000m		VIS 2500m
D				RVR 1200m	VIS 2100m	VIS 3400m
				VIS 1200m		VIS 3400m

*Circling to West side of RWY only.
** Apply to when GP OUT.
Aircraft executed missed approach shall keep the following climb gradient until passing 1000ft.

Not for Operational Use!

SPEED (KNOTS)	60	90	120	150	180	210
RATE (Feet/Min)	300	450	600	750	900	1050

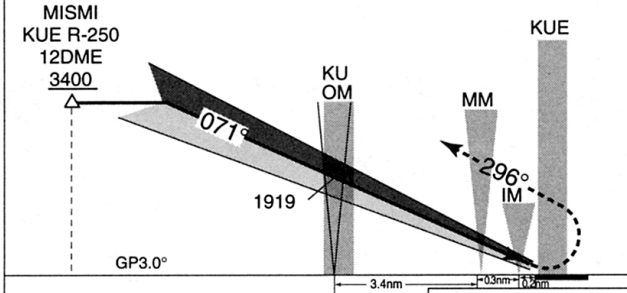
KUMAMOTO APP 119.0 – 126.5 122.9 – 258.9	ILS-LLZ 109.3 IKU $\ddot{=}$ ILS-GP 332.0	KUMAMOTO TOWER 118.7 – 126.2 122.9 – 258.9	RADAR AVAILABLE ATIS 128.8
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ILS REFERENCE DATUM 54'

MISSED APPROACH

Climb on HDG 071° to 1000', turn left HDG 245° to intercept and proceed via KUE R-296 to KUE 12DME, turn left, proceed via KUE 14DME counter clockwise ARC to intercept and proceed via KUE R-250 to MISMI and hold at 3400'.
 Contact KUMAMOTO APP.
 ◎ Turns must not be commenced before IM.
 ◎ Maintain 200kts (IAS) or less until completing initial left turn.
 ◎ Maintain 5% missed approach climb gradient until 1000'.

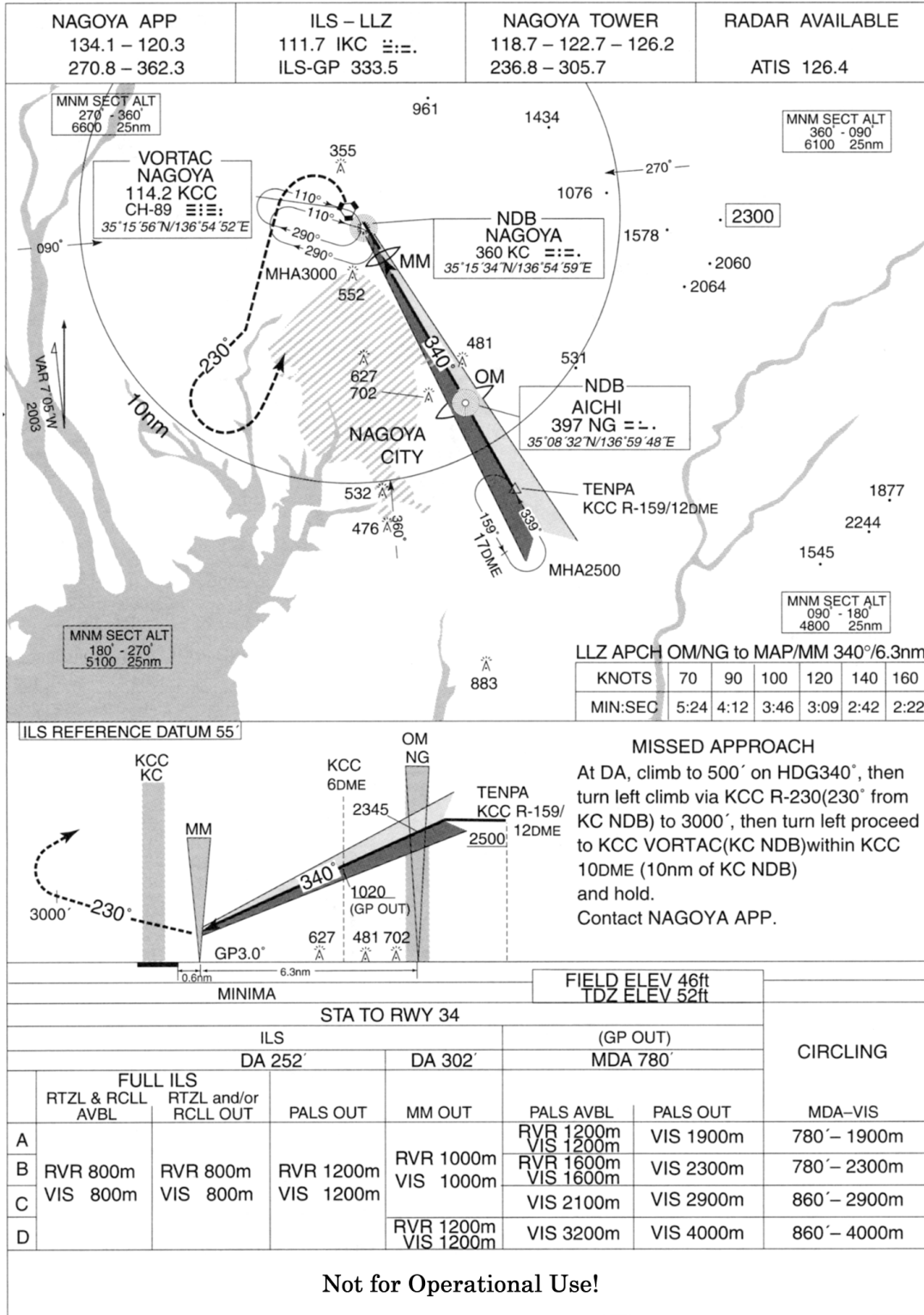


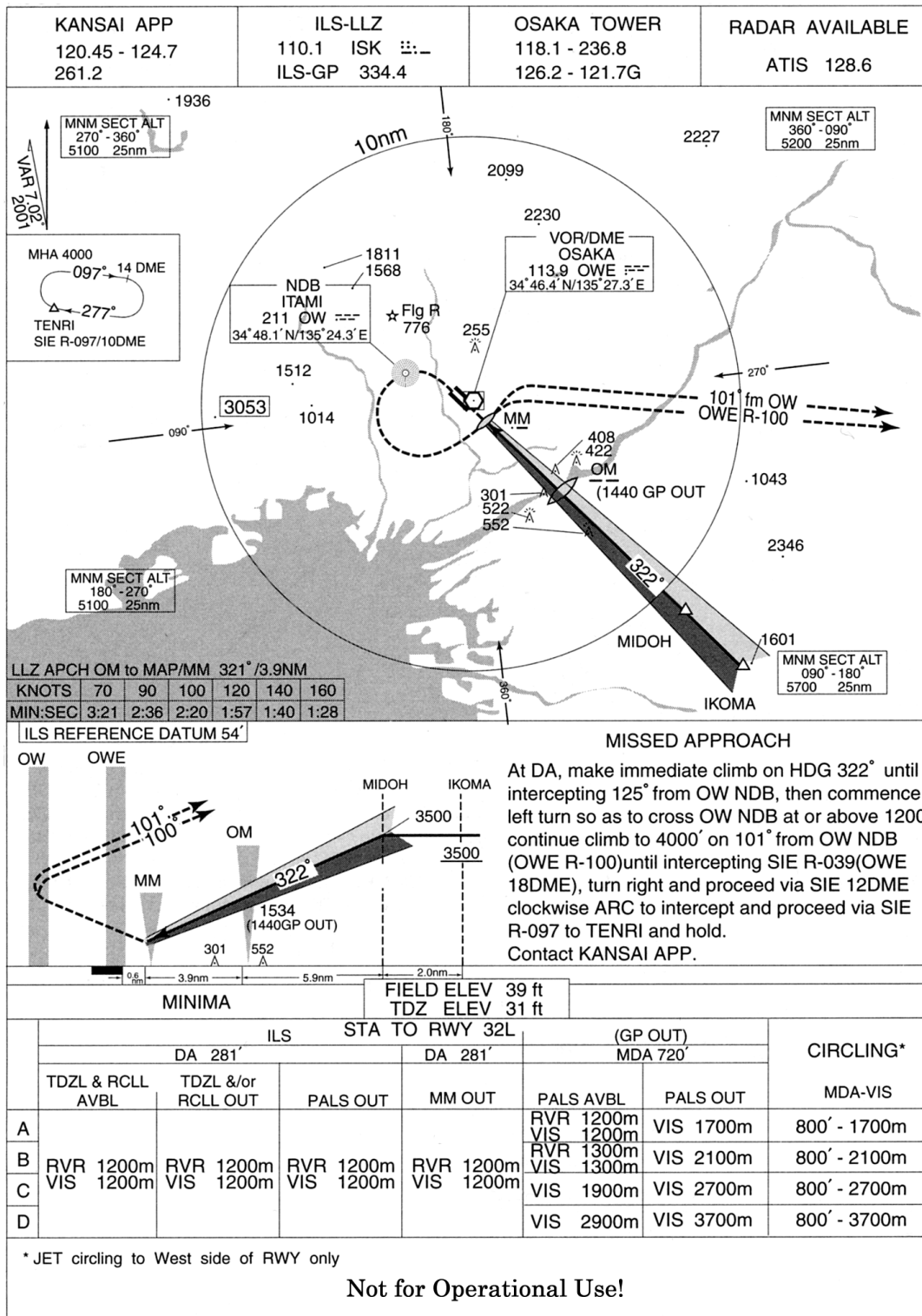
FIELD ELEV 632ft
 TDZ ELEV 625ft
 THR ELEV 601ft

MINIMA	
CAT III a	CAT II
-	DH 174' RA 242'
A	RVR 200m
B	RVR 500m
C	
D	

* DH is referenced to the threshold elevation.

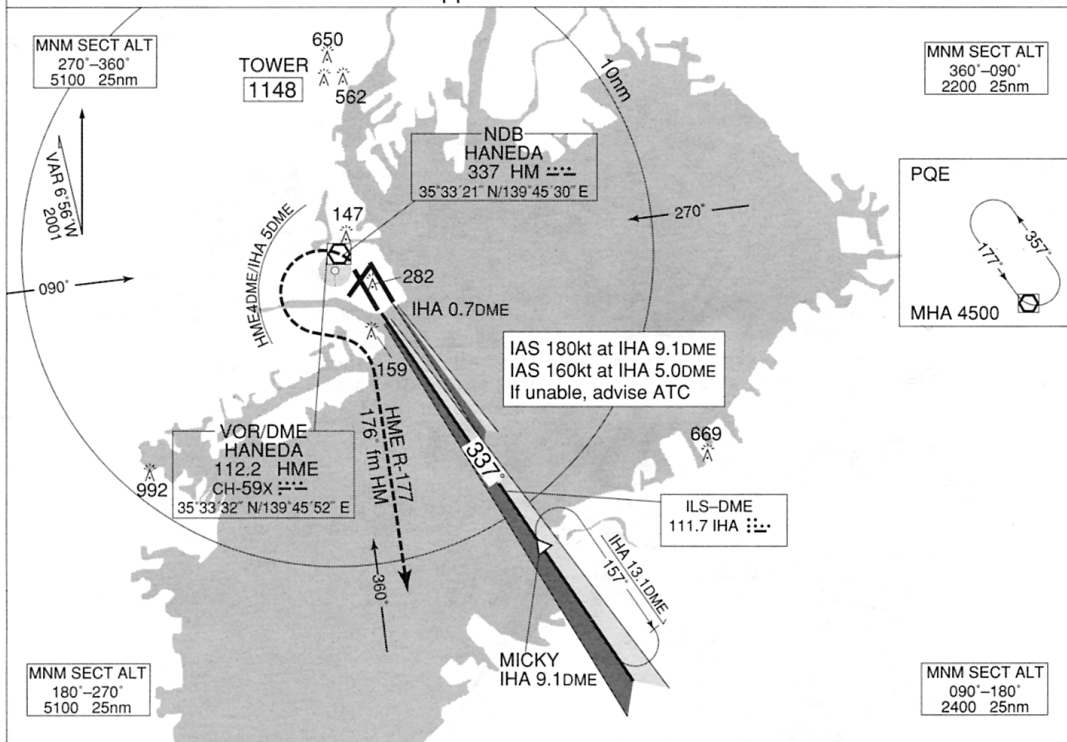
Not for Operational Use!



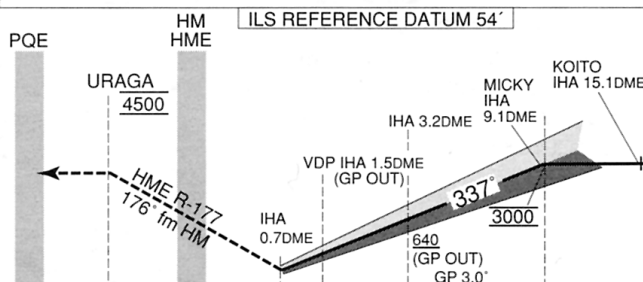


TOKYO APP 119.1 – 119.4 – 119.7 126.5 – 236.8 – 261.2	ILS – LLZ 111.7 IHA ILS-GP 333.5 ILS-DME CH-54X	TOKYO TOWER 118.1 – 124.35 – 118.8 126.2 – 236.8	RADAR AVAILABLE ATIS 128.8
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Simultaneous approach authorized with RWY34R



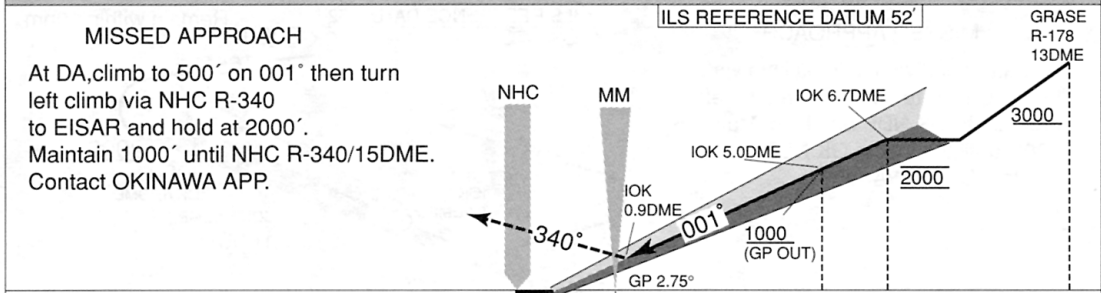
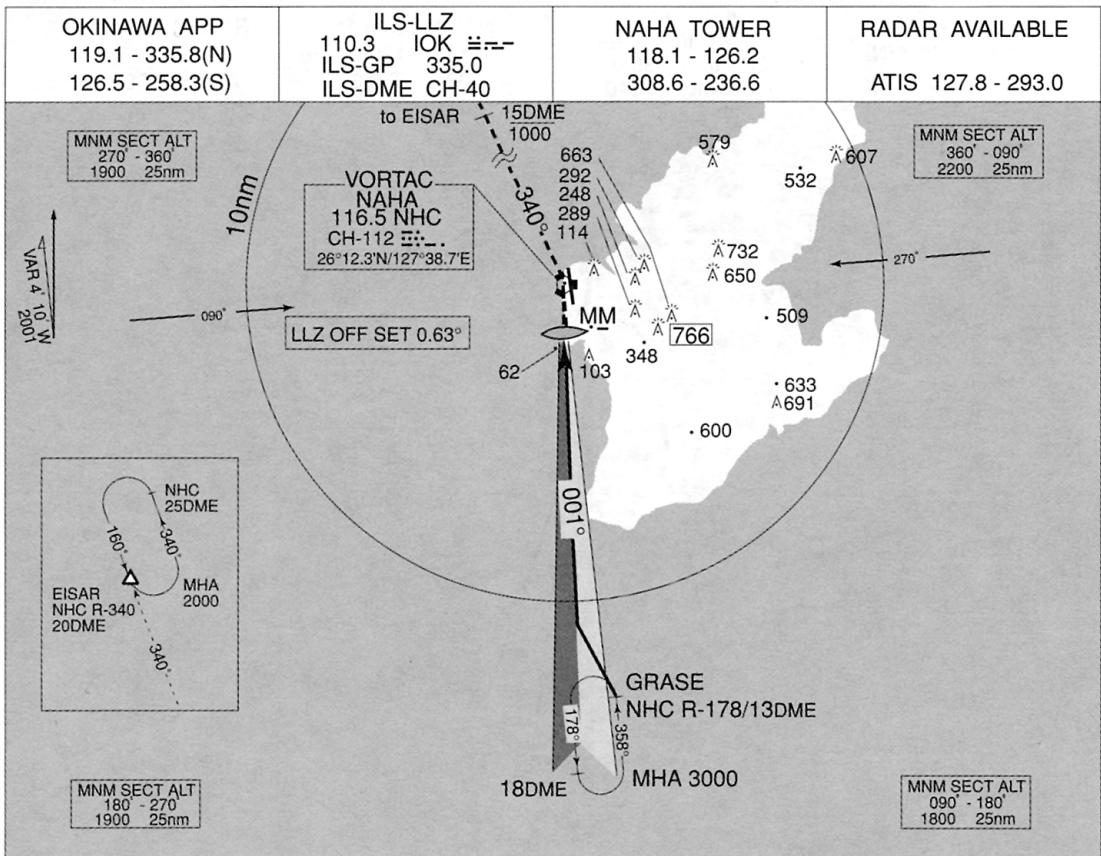
MISSED APPROACH
At DA, climb to 500' on 337°, turn left within HME 4DME/IHA 5DME, climb to 4500' via HME R-177 (176° from HM NDB) to URAGA, then via PQE R-357 to PQE VOR/DME and hold. Cross URAGA at 4500'. Contact TOKYO APP.



MINIMA		FIELD ELEV 21 ft TDZ ELEV 20 ft			*CIRCLING		
		STA TO RWY 34L					
		ILS		(GP OUT)			
		DA 220'		MDA 460'			
		RTZL & RCLL AVBL	RTZL &/or RCLL OUT	PALS OUT	PALS AVBL	PALS OUT	MDA-VIS
A						RVR 1400m VIS 1400m	600' – 1600m
B	RVR 550m VIS 800m	RVR 800m VIS 800m	RVR 1200m VIS 1200m	RVR 1200m VIS 1200m		VIS 1700m	620' – 2400m
C						VIS 2300m	620' – 3200m
D							

*Circling not authorized during the nighttime except counterclockwise circling to RWY 16R/16L/34R.

Not for Operational Use!



MINIMA		FIELD ELEV 11ft TDZ ELEV 11ft			
	ILS STA TO RWY 36		(GP OUT)		CIRCLING* MDA-VIS
	RTZL & RCLL AVBL	RTZL & /or RCLL OUT	PALS OUT	PALS AVBL	
A	RVR 800m			RVR 1200m	480' - 1600m
B	VIS 800m		RVR 1200m	RVR 1200m	
C			VIS 1200m	VIS 1200m	480' - 2400m
D	RVR 1000m			VIS 1500m	
	VIS 1000m			VIS 2100m	580' - 3200m

*Circling to West side of RWY only.

Not for Operational Use!

Frequently Asked Questions

Aircraft

- Q1. When I lunched FS2004, I get an aircraft painted in black color or painted in strange looking.
- A1. This may happen when box for “enable hardware acceleration” of Display Setting is not ticked.
- Q2. Instrument panel looks blurry and not clear.
- A2. Go to option for setting-display, and under the tab of HARDWARE, select 1024x768 or higher from available display resolutions.
- Q3. Pop-up-windows of the panel does not appear, even if I tried to get them as instructed in Manual.
- A3. Use the number key of the keyboard, and do not use them on the NUM PAD.
- Q4. Airliner would stall immediately after take off and it seems to have no capability of climbing to higher altitude.
- A4. Adjust the amount of fuel to be loaded. Normally don't fill up to the neck of fuel tanks. However, when large amount of fuel are to be loaded for the long haul flight, try to gain airspeed in the first stage of climb by keeping the pitch lower than 10 degrees. As a rule of thumb, refuel only 20 to 30% of fuel for Domestic Flight, and 70 to 80% for Oversea Flight.
- Q5. How can I open the cargo door ?
- A5. Press down the key combination of Shift+E and key 1 (regular numeric key in row and not the one on the num-pad) to open the passenger door. Press down the key combination of Shift+E and key 2 to open the cargo door.

Adventure

- Q1. When landing in the observer mode, aircraft slips off from the runway.
- A1. Disable the joystick when flying in the observer mode. Also, go to Aircraft for realism setting, and then tick the box for autorudder.
- Q2. Aircraft is not capable of landing in the observer mode.
- A2. Landing gear must be extended manually before landing by pressing the “G” key. Automatic gear extension is not programmable in the adventure of FS2004.
- Q3. During the operation of the Pilot Mode, the verbal instructions of controller are not heard for quite some time.
- A3. Aircraft might have deviated from the course considerably. Adventure program might have missed your aircraft. Also, never fly other than “normal” sim rate. Aircraft flying with the sim rate of x2, x4 and higher will not be controlled by the ATC controller in these add-on adventures. Stick to “normal”.

Others

- Q1. Error occurs when install of the program is in progress, why?
- A1. Please clean up the pick-up head of your CD-ROM drive by using the CD cleaner. The data of the product has been burnt into the CD to the fullest extent. Therefore, the CD pickup head may move more than the range that it usually covers. In certain instances, error in reading a disk may occur by dirt of a lens in the range that is not covered by usual motion of the head.

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Product Support Services

1. Update File

Whenever update files are released, the update files (patch) will be made available on our web site for your download:

<http://www.aerosim.co.jp>

When you attempt to unzip the downloaded update file, you will be asked for a password. Password is,

CeleBrity780

Be sure to type in exactly as it is when you enter a password, as case sensitive.

Important Notice

Update File intended for the update of CD Boxed Version of our product is also made available for those who purchased our CD product (packed in Box) in the Domestic Market. These update file are useless for the Download Version (RegNow Version) of our product.

2. Contact us by e-mail

For any inquiry you may have, send your e-mail to:

support_e@aerosim.co.jp

When you contact us by e-mail, we kindly ask you to provide us with the following information.

- Name of manufacturer, Type, CPU, Memory, Video card (memory size) and empty space in HDD.
- Operating system
- Name of Drive and Folder where your FS2004 resides.
- Nature of trouble as much detail as possible

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