

# Autopilot Functional Example



Intentionally Left Blank

### **Table of Contents**

Setup	4
Loading the Aircraft Configuration File	5
Modifying the Aircraft Configuration File	5
Autopilot Functional Test Flight	6
Before TakeOff	6
TakeOff	7
Acceleration Height	9
Thrust Reduction Altitude	.10
Climb Using Flight Level Change	.11
Altitude Capture	.12
Heading Select	.14
Track Select	.15
Descent Using Flight Level Change	.15
Introducing V/S	.16
V/S Arm Mode	.16
ILS Approach	.17
737	.17
777	.23
Flare and Rollout	.23
MCP Reset	.24
Glossary	.24
Server – Autopilot Tuning Values	.25

### Setup

When the Server is started, it checks that all of the required files are available. If any are missing, they are created. This includes the .INI files and aircraft .CFG files.

Favorite Links	Name	Date modified	Туре
Favorite Links	Name Server.exe FS9-MELJET-B772.CFG FS9-PMDG-B737.CFG FS9-POSKY-B738.CFG FS9-POSKY-B738.CFG FSX-Default-B737.CFG FSX-Dofault-B737.CFG FSX-POSKY-B772.CFG FSX-POSKY-B772.CFG FSX-VILCO-FEELTHERE-B772.CFG FSX-WILCO-FEELTHERE-B772.CFG FSX-WILCO-FEELTHERE-B772.CFG FSX-WILCO-FEELTHERE-B772.CFG FSX-WILCO-FEELTHERE-B772.CFG FSX-POSKY-B737.CFG FSUIPC_JOJNI FSUIPC_JOJNI FSUIPC_JOJNI FSUIPC_JOJNI FSUIPC_JOJNI FSUIPC_JOJNI FSUIPC_JOJNI FSERVER_INI FSERVER_CDU_HDR_STATUS.DAT	Date modified 24/05/2011 14:03 05/05/2011 15:20 03/06/2011 18:25 05/05/2011 18:25 05/05/2011 12:53 20/05/2011 12:53 20/05/2011 13:53 24/05/2011 13:53 05/05/2011 13:38 05/06/2011 15:48 05/06/2011 15:4	Type Application CFG File CFG File Configuration Sett Configuration Sett Configuration Sett Configuration Sett Configuration Sett Configuration Sett Configuration Sett
Vavigation_Data  Voerhead_Panel  Performance_Data  Server  Sound	SERVER_CDU_HDR_STATUS.DAT SERVER_CDU_RTE_STATUS.DAT SERVER_CRITICAL_STATUS.DAT SERVER_STATUS.DAT	05/06/2011 15:48 05/06/2011 15:48 05/06/2011 15:48 05/06/2011 15:48	DAT File DAT File DAT File DAT File
TCP_Client Terrain and Weather Radar	-	N	

Supplied Aircraft Configuration files:

- FS9 Meljet 777
- FS9 POSKY 777
- FS9 POSKY 737
- FS9 PMDG 737
- FSX POSKY 777
- FSX POSKY 737
- FSX Default 737
- FSX Wilco 777
- Xplane 737

The .CFG files contains specific information for the type of aircraft select. Most of this information is displayed and can be changed on the "Aircraft Details" tab in the Server. These files also include the information found on the Autopilot tuning tab.

it is important that the correct file is loaded to match the aircraft you are using.

# If the wrong aircraft file is loaded the Autopilot will not be able to control the aircraft properly.

### Loading the Aircraft Configuration File

You can see the Aircraft Configuration File currently loaded in the status bar at the bottom of the Server window.

Latest Server Version = 1.161 Latest Avionics Version = 1.161 Latest CDU Version = 1.161 Latest MCP Version = 1.161	*	FIRE WARN DEL CUTOLT	MASTER CAUTION PUEN TO RELEF	A/P A/T FMC P/RST P/RST P/RST	Start Pushback
Latest Overhead Panel Version = 1.161 Latest Sound Module Version = 1.161 Latest Terrain and Weather Radar Version = 1.161	3	FLT CONT IRS FUEL	ELEC APU OVHT/DET	ANTI-ICE ENG HYD OVERHEAD DOORS AIR COND	- 0 + Degs Cancel Pushback
DB:737 Current Aircraft => C:\Sim-Avio	- onics\Se	erver\FSX-	Default-B	737.CFG	

Here you can see that the FSX-Default-B737.CFG file is loaded

You can load a new aircraft configuration file via the Server Menu:

#### Aircraft Specific > Load Aircraft

This selection is then stored in the Server.ini file when the Server is closed and the correct aircraft file will then be automatically loaded when the server is restarted.

This means that you do not have to 'Load Aircraft' everytime you start the Server.



### Modifying the Aircraft Configuration File

You can make changes to the information on the **Aircraft Details** tab but need to ensure that you **SAVE** the aircraft config before closing the Server. If you close the server and restart without saving the aircraft, the changes will be lost.

You can Save the aircraft configuration file changes via the Server Menu: **Aircraft Specific > Save Aircraft** 

The **Autopilot Tuning** tab is for making adjustment to the way the Autopilot controls the selected flight model.

We would recommend that you DO NOT make any changes to the values in this tab until you are familiar with the software. If these values are incorrectly changed it could cause the Autopilot to lose control of the aircraft.

### **Autopilot Functional Test Flight**

This section will describe how to perform a basic flight, testing some of the Autopilot functionality.

We will <u>NOT</u> be using the CDU, so LNAV and VNAV will not be used. The purpose of this flight is to test the handling, stabilty and a few of the different modes of the autopilot.

In addition to explaining some of the MCP modes, this will highlight if the wrong configuration file has been loaded or if there are any problems in the aircraft config file.

#### **Before TakeOff**

For this test you will need to have

- Flight Simulator Running
- Server Running and connected to FS
- Press the Quickstart button on the Server to Power the aircraft systems
- Avionics running displaying the PFD. (Also the ND and EICAS may help but this is optional)
- MCP.exe

Ensure that you have loaded the correct aircraft configuration file on the server which matches your FS version and flight model.

ie If you are using the Default 737 aircraft in FSX you would load the file :

#### FSX-Default-B737.CFG

For this flight we will assume that we are flying a 737.

Once everything is running set the MCP to :

Speed = **170** HDG = RWY Heading Altitude = **30000** A/T Arm = ON CPT F/D = ON

Now your MCP should look like this.



Select Flaps 1, 2 or 5 for takeoff.

\* Please be aware that you may find that some of the VREF speeds will be incorrect. This is because we are not running the CDU and it's ok to ignore this.

Your PFD should now look like this :







### TakeOff

- Release the brakes
- Increase the throttles to 60-70%
- Before reaching 60kts Press the N1 button (737) or CLB button (777) to engage TOGA (You would normally press the TOGA buttons on the throttles, but this is an easy way for testing purposes.)

After pressing TOGA you will see:

Thrust Mode = N1 (737) or THR REF (777) HDG Mode = HDG SEL (737) or TOGA (777) Pitch Mode = TOGA





After 80kts the Thrust FMA will change to THR HLD (Throttle Hold)

At aprx 140kts – Rotate the aircraft and pitch to approx 18-20 degs to stabilize the acceleration and to target the V2+25 speed set on the MCP of 170kts.

#### Set Gear Up.

At 800ft RA the Thrust FMA will change back to ARM mode. (737 Only)



#### **Acceleration Height**

The Acceleration height is set on the Takeoff page in the CDU and is normally set to 1000ft RA, but this will change depending on Noise Procedure, Airline Policy and aircraft performance. This is the height where in VNAV mode, the CDU would increase the Speed bug from the V2 target speed to the planned Climb Speed.

The Climb Speed is set on the VNAV CLIMB page of the CDU and is either the :

Climb Speed Transition Speed Alt Restriction Speed Waypoint Constraint Speed Which ever is lower.

Assuming there are no waypoint constraint speeds this would usually be 250kts below 10000ft.

But, as we are not using VNAV, at the 1000ft acceleration height you should manually increase the MCP speed bug to 250kts.

To accelerate the aircraft you will need to reduce the pitch angle down to 10-15 degrees.



Once you are within 20kts and accelerating towards the Flaps UP Speed Bug you can select Flaps UP.

#### **Thrust Reduction Altitude**

The next important height is the Thrust Reduction Altitude.

This is also set on the Takeoff page in the CDU and can be triggered by an Altitude or Flap setting.

The Thrust Reduction Altitude is the point at which the Takeoff thrust is reduced to the Climb Thrust setting. By default this is set to happen at 1500ft RA.

So at 1500ft RA the Thrust FMA will change to N1 (737) or THR REF (777) to command the CLB power.

At this point the Thrust Ref and Thrust mode will also change on the EICAS from TO to CLB.

Without the CDU running the default CLB thrust is 89.9% N1. This will produce a fairly gentle climb.



### **Climb Using Flight Level Change**

At this point we're still flying manually. The HDG mode is Heading Select and the Pitch mode is TOGA.

You should now press LVL CH (737) or FLCH (777).

When you select this mode the MCP Speed will be set to the Current Indicated Airspeed, so if you press this before reaching 250kts, to continue the acceleration you will need to reset the Speed back to 250kts.

The Pitch FMA will change to MCP SPD (737) or FLCH (777).

Whenever you're ready you can engaged the Autopilot by pressing one of the **CMD** buttons (737) or one of the **MCP ON** buttons (777).

To indicate that the autopilot is enaged the A/P mode annunciator on the PFD will change from FLT DIR to CMD (737)

or F/D to A/P (777)



You can continue like this up to 10,000ft or until you are told there is no speed restriction by ATC.

At 10,000ft you can increase your speed from 250 up to your climb speed. Lets assume your climb speed will be 280kts. **Set the MCP Speed to 280.** This speed increase would happen automatically in VNAV.

The aircraft will now pitch down slightly to accelerate to 280kts.

In VNAV Mode

The MCP automatically changes from Speed to MACH when reaching the CRZ MACH selecte on the VNAV page.

### Altitude Capture

Within 900ft of the Target Altitude, the ALT ACQ mode will be annunciated and the Altitude Capture horn will sound (if the sound module is running)

The A/T will change to MCP SPD mode. This means the A/T stops targeting the CLB Thrust and starts targeting the speed of 280kts.

The EICAS Thrust Ref changes from CLB to CRZ.

The Altitude Capture box is illuminated to indicate an altitude is being captured.



Within 200ft of the Target Altitude, ALT HOLD is annunicated and the A/P will level and maintain the target altitude.

The Altitude Capture box is extinguished.



### **Heading Select**

At any point you can change the aircraft's heading by adjusting the MCP HDG. If the **HDG SEL** light is illuminated and the FMA HDG Mode = HDG SEL, then the aircraft will fly the heading set in the MCP HDG window.

### **Track Select**

#### \*777 ONLY

By pressing the HDG / TRK button above the MCP HDG Window the 777 can be switched to Track mode.

Now the value in the HDG window becomes a TRACK, and the Autopilot will automatically adjust the aircraft heading to correct for Wind.

The FMA HDG Mode will change to TRK SEL, and will fly the track set in the MCP HDG window.

### **Descent Using Flight Level Change**

To Descend, You should first select a lower Altitude on the MCP. Lets assume we're cleared down to 10,000ft. **Set the MCP Altitude to 10000ft**.

Next, press the LVL CHG (737) or FLCH (777) button.



Thrust Mode changes to RETARD (737) or IDLE (777) Pitch Mode changes to MCP SPD (737) or FLCH (777)

The Engines will slowy come back to idle which will cause the aircraft to pitch down to maintain the select MCP speed of 280kts.

You can reduce your speed in the descent by selecting a lower MCP Speed. This will cause the aircraft to pitch up slightly allowing the speed to reduce.

Be very careful applying speedbrakes in this mode as it can cause a very steep rate of descent.

### Introducing V/S

To shallow the descent rate or to set a specific descent rate you might want to switch over to a Vertical Speed V/S descent.

To do this, simply press the  ${\bf V/S}$  button on the MCP. The V/S window on the MCP will open at the current rate of descent allowing you to adjust as required.

Speedbrakes will now cause a speed reduction rather than a pitch change.

Approaching the target altitude the MCP will go through the same Altitude Capture sequence as before.

### V/S Arm Mode

From ALT HOLD mode, setting a new target altitude on the MCP will place V/S into an 'Arm' mode. Just moving the V/S thumb wheel will set the MCP into V/S Mode.

### **ILS Approach**

#### 737

An ILS approach can be flown using a single A/P. (This is Not an Autoland)

Either :

Tune the ILS frequency into NAV1 and use MCP CRS1 + CMD A Tune the ILS frequency into NAV2 and use MCP CRS2 + CMD B

For a full Autoland BOTH NAV1 and NAV2 are required to be tuned to the ILS freq and Both MCP CRS1 and CRS2 set to the LOC crs.

Once an ILS has been tuned it's IDENT and Course are displayed on the PFD below the FMA's

In this example it's ILS Ident : IWW and course 260 degrees Set MCP CRS1 and CRS 2 = 260 to match the displayed ILS course

Now we are stable flying a 30 degree intercept course of 290 degrees to capture the Localiser, at 3000ft and at FLAPS 1.

The Current MCP Modes are SPEED HDG SEL ALT HOLD

You can see the Localiser indication is parked to the right and the Glideslope indication is parked above us.

Once we have been cleard for the ILS approach we can press the APP Button. This '<u>Arms</u>' the VOR/LOC and GS modes.



Now we wait to intercept the Localiser.

Once the Localiser starts to move the A/P HDG Mode will change to VOR/LOC. The A/P Mode changes to SINGLE CH to remind us that we are currently only using a single A/P.



When the Glideslope indication gets within half a dot above, the pitch mode will change to GS to indicate the Glideslope Capture.

At this point a virtual runway is also indicated showing our alignment to the runway.



SINGLE CH Mode can be used all the way to the Runway. But in this mode you are NOT in an Autoland configuration and the aircraft will NOT flare and land the aircraft.

To engage the Autoland mode you must have :

NAV1 and NAV2 tuned to the ILS freq.

MCP CRS1 and CRS2 tuned to the ILS Rwy Course

If either of these are not true then the ILS Ident and ILS Course on the PFD will be highlighted in yellow and crossed out. Having both the Ident and Course in white is good.

Once the Localiser and Glideslope have been captured the second A/P can be engaged.

Both CMD A and CMD B will be illuminated.

Above 1500ft RA the A/P Mode changes from **SINGLE CH** to **CMD**.



Below 1500ft RA the AP Mode changes to **LAND 3** and Rollout and Flare modes are armed. This is your indication that an Autoland is enabled.



#### 777

The Localiser and Glideslope are captured in the same way as the 737 except the 777 will autotune the ILS frequency based on the selected Arrival Runway in the CDU.

An ILS Frequency can be manually tuned via the NAV RAD page on the CDU.

Once a valid ILS frequency has been identified the Course is automatically determined and set.

In addition, Autoland functionality is always enabled as long as there are no A/P failures. No additional action is required to enable an autoland.

#### **Flare and Rollout**

At the FLARE altitude (set on the aircraft Details tab) the FLARE mode is engaged.

At the IDLE altitude (set on the aircraft Details tab) the A/T will IDLE the throttles.

2 seconds after touchdown the A/T Arm switch is set to OFF (737 Only)



You will need to :

- Verify the Throttles are at IDLE
- Deploy the SpeedBrake
- Apply Reverse Thrust as required
- Apply Brakes as required

Speedbrake deploy and Brakes can be made automatic, but are not relevent for this tutorial.

### MCP Reset

After Landing it is important to ensure that :

- 737 Both CMD A and CMD B are OFF
- 777 A/P is OFF and the Master Warning Cancelled.
   Press the A/P ON a second time to cancel the A/P disconnect warning.
- Both Flight Director switches **F/D's** = **OFF**
- A/T Arm Switches = OFF

This will reset the A/P modes and clear the FMA's ready for the next flight.

#### Glossary

Term	Description
A/P	Autopilot
A/T	Auto Throttle
ALT	Altitude
CRS	Course
EICAS	Engine Instrument and Crew Alerting System
F/D	Flight Director
FLCH	Flight Level Change
FMA	Flight Mode Annunciator
HDG	Heading
HDG	Heading Select
ILS	Instrument Landing System
LNAV	Lateral Navigation
LVL CH	(Flight) Level Change
МСР	Mode Control Panel
RA	Radio Altitude
SPD	Speed
TRK	Track
V/S	Vertical Speed
VNAV	Vertical Navigation

## Server – Autopilot Tuning Values

#### FSX-Default-737

Sim-Avionics - Server : Versio	on 1.164	
lystem Aircraft Specific Ten	rain Activation Version Infomation	About
WWW.SIM-AVIONICS.COM Contact	Sim-Avio	
MAIN Control Pane	EFIS Flight Controls Aircraft	Detail Autopilot Tuning FSUIPC I/O Interface Offset Moni
Airspeed Hold		Thrust Ref
Sensitivity Reduction Damping	8 Change Rate 12	Sensitivity Reduction         28         Change Rate         12           Damping         18         Lvl Off Reduct         22
HDG Select		
Turn Agression	1280 Bank Angle Gain	1.5
Roll Accel Scalar	2500 Turn Rate Stabilzer	-5 FD Roll Scaler 1
LNAV		
LNAV Capture Large	1 Offset Varience	0.5 Small
FLCH		
Sensitivity Reduction Damping	-0.01         Climb Aggression           0.09         Descent Aggression	FD Pitch Scaler -0.008
Vertical Speed		9
Sensitivity Reduction	7	ED Ditch Scaler 02
Damping	0.2	PD Pitch Scaler  0.2
Altitude Hold		
Capture Aggression	4 Pitch Damping	-170 Pitch Accel 1
Damping	0.2 Elevator Rate	0.7 Scale FD Pitch Scaler 0.2
LOC / GS		
Sensitivity Reduction	7 Glide Slope Captu	re Agg 7.5
LOC Damping	9 GS Damping	8
Misc	101	
CWS Pitch Reduction	12 TAC Tuning	Autobrake Scalar 5
CWS Pitch Damping	0.1 Rudder Dampe	r 40 FBW Pitch Tuning -65

#### FSX-POSKY-738

ontact		Sim-Avio	nic	5)		GITTDECKSO	LOTIONS
MAIN Control Pane	EFIS	Flight Controls Aircraft	Detail	Autopilot Tuning	SUIPC	I/O Interface	Offset Mo
irspeed Hold	نن ـــــــــــــــــــــــــــــــــــ		Thrust	Ref	_		
Sensitivity Reduction Damping	6 0.55	Change Rate 14	Sensi Damp	tivity Reduction ing	18 10	Change Ra	ate 12 duct 26
DG Select							
urn Agression	1580	Bank Angle Gain	1.2				
Roll Accel Scalar	2500	Turn Rate Stabilzer	-5		FD F	Roll Scaler	2
NAV							
NAV Capture Large	0.4	Offset Varience	0.8	Small			
ensitivity Reduction Camping	-0.03 0.08	Climb Aggression Descent Aggression	1.8 1.2		FD F	Pitch Scaler	-0.003
ertical Speed	-						
ensitivity Reduction	18	-			FD F	itch Scaler	0.4
Jamping	10.2						
ltitude Hold	<b>F</b>				6		
Capture Aggression	4	Pitch Damping	-20	Pitch Accel Scale	1		-
Damping	0.2	Elevator Rate	10.8	Source of the	FD F	Pitch Scaler	0.3
OC / GS							
ensitivity Reduction	6	Glide Slope Captu	re Agg	7			
OC Damping	7	GS Damping		9			

#### FSX-POSKY-772

		Sim-Avic		<b>&gt;</b>			
MAIN Control Pane	EFIS	Flight Controls Aircraft	Detail /	Ref	SUIPC	/O Interface	Offset Mo
Sensitivity Reduction Damping	5 0.6	Change Rate 18	Sensit Dampi	ivity Reduction ng	22 17	Change R Lvl Off Re	ate 10 duct 22
IDG Select			a a				
Furn Agression Roll Accel Scalar	1180 3000	Bank Angle Gain Turn Rate Stabilzer	1.2		FD F	oll Scaler	1
NAV			-				
NAV Capture Large	0.3	Offset Varience	0.3	Small			
LCH							
Sensitivity Reduction Damping	-0.02 0.03	Climb Aggression Descent Aggressior	2.0 1.3		FD P	itch Scaler	-0.008
/ertical Speed							
Sensitivity Reduction Damping	16 0.005				FD P	itch Scaler	0.2
ltitude Hold							
Capture Aggression Damping	4	Pitch Damping Elevator Rate	-80 0.9	Pitch Accel Scale	1 FD P	itch Scaler	0.2
OC / GS							
Sensitivity Reduction	8	Glide Slope Captu	re Agg	7			

#### FS9-POSKY-738

			-	-		CUTDECKCO	
ontact		Sim-Avio	nic	5) "	/W.FLI	GHIDECKSO	LUTIONS.C
MAIN Control Pane	EFIS	Flight Controls Aircraft	Detail	Autopilot Tuning	SUIPC	I/O Interface	Offset Mon
Airspeed Hold	-		Thrust	Ref	Contract of		-
Sensitivity Reduction Damping	6 0.4	Change Rate 14	Sensi Damp	tivity Reduction ing	18 12	Change R	duct 22
HDG Select							
Turn Agression	800	Bank Angle Gain	1.4				
Roll Accel Scalar	4000	Turn Rate Stabilzer	-5		FD F	Roll Scaler	1
LNAV							
NAV Capture Large	2	Offset Varience	1.5	Small			
					_		_
	0.01	Climb Anoreasian	1.0	1			
Sensitivity Reduction	0.1	Descent Aggression	1.0	-	FD F	itch Scaler	-0.008
Valiation	1	beseentriggression	1		_		
Consitivity Reduction	14						
Damping	0.1				FD F	Pitch Scaler	0.4
	1						
Capture Aggression	4	Pitch Damoing	-30	Pitch Accel	-2	-	
Damping	0.1	Flevator Rate	0.9	Scale	ED F	itch Scaler	0.5
	100				101	ten beder	1
LOC / GS	_						
Sensitivity Reduction	8	Glide Slope Captu	re Agg	9			
LOC Damping	7	GS Damping		6			
Misc							
WS Pitch Reduction	12	TAC Tuning	20		Auto	brake Scala	r 10
CWS Pitch Damping	0.1	Rudder Dampe	40		FBW	Pitch Tunin	-65

#### FS9-POSKY-772

vstem Aircraft Specific Te	rrain Activation Ve	rsion Information Abo	ut		
WWW.SIM-AVIONICS.COM Contact	Sin	n-Avionia		WW.FLIGHTDECKS	OLUTIONS.CO
MAIN Control Pan	el EFIS Flight Cor	trols Aircraft Detai	Autopilot Tuning	FSUIPC I/O Interface	Offset Mon
Airspeed Hold		Thr	ist Ref		
Sensitivity Reduction Damping	7 0.43 Change R	tate 12 Ser Dar	isitivity Reduction nping	18 Change I 12 Lvl Off R	Rate 12 educt 22
HDG Select					
Turn Agression	980 Bank A	ngle Gain 1.2			
Roll Accel Scalar	3000 Turn Ra	ate Stabilzer -9		FD Roll Scaler	1
LNAV					
NAV Capture Large	2 Offset	Varience 1.5	Small		
10000					_
FLCH					
Sensitivity Reduction	-0.01 Climb	Aggression 1.8	_	FD Pitch Scale	-0.008
Damping	Desce	nt Aggression			14. 
Vertical Speed	112				
Sensitivity Reduction	0.1			FD Pitch Scale	0.4
Damping	0.1				
Altitude Hold	Ditab	Domoino	Ditch Accel	[1	
Capture Aggression	01 Class	bamping -50	- Scale	FD Ditch Conto	0.5
Damping	In FIEVS	itor kate  0.9		FD Pitch Scale	0.5
LOC / GS					•
Sensitivity Reduction	9 Glide	Slope Capture Ag	g 9		
LOC Damping	7 GS D	amping	7		
Misc					
CWS Pitch Reduction	8	TAC Tuning 2		Autobrake Scal	ar 7
CWS Pitch Damping	0.3 R	udder Damper 60	-	FBW Pitch Tuni	ng -65

#### FS9-PMDG-737

100	Sim-Avionics -	Server : Versio	on 1.164		dises.			100/	
	System Aircraft	Specific Terr	r <mark>ain</mark> Activ	vation Version Infomation	n About				
	WWW.SIM-AV Contact	IONICS.COM		Sim-Avio	) Dinic		WW.FLI	GHTDECKSOL	UTIONS.COM
ļ	MAIN	Control Pane	EFIS	Flight Controls Aircraft	Detail	Autopilot Tuning	FSUIPC 1	[/O Interface	Offset Monitor
	Airspeed Hold Sensitivity F Damping	Reduction	8 0.6	Change Rate 25	Thrust Sensi Damp	Ref tivity Reduction ing	18 28	Change Ra Lvl Off Red	ate 22 duct 23
	HDG Select								
	Turn Agress Roll Accel S	ion calar	1000 1900	Bank Angle Gain Turn Rate Stabilzer	2 -8.0		FD R	oll Scaler	1
	LNAV LNAV Captur	re Large	0.6	Offset Varience	2	Small			
	FLCH								
	Sensitivity F Damping	Reduction	-0.02 0.1	Climb Aggression Descent Aggressior	2 1.2		FD P	Pitch Scaler	-0.008
	Vertical Speed								
	Sensitivity F Damping	Reduction	8 0.2				FD P	Pitch Scaler	0.3
l	Altitude Hold								
	Capture Ag Damping	gression	4 0.2	Pitch Damping Elevator Rate	-200 0.8	Pitch Accel Scale	1 FD P	Pitch Scaler	0.3
	LOC / GS								
	Sensitivity F LOC Dampin	Reduction g	7 7	Glide Slope Captu GS Damping	re Agg	7.5 4			
	Misc								
	CWS Pitch R CWS Pitch D	eduction amping	12 0.1	TAC Tunin Rudder Dampe	g <mark>4</mark> r 60		Auto FBW	brake Scalar Pitch Tunin	r 10 g -65

#### FS9-MELJET-777

Sim-Avionics - Server : Versio	on 1.164		
System Aircraft Specific Terr	rain Activation Version Infomation	About	
WWW.SIM-AVIONICS.COM Contact	Sim-Avio		/W.FLIGHTDECKSOLUTIONS.COM
MAIN Control Pane	el EFIS Flight Controls Aircraft	Detail Autopilot Tuning F	SUIPC I/O Interface Offset Monitor
Airspeed Hold Sensitivity Reduction Damping	8 0.34 Change Rate 8	Thrust Ref Sensitivity Reduction Damping	18Change Rate1214Lvl Off Reduct23
HDG Select			
Turn Agression Roll Accel Scalar	1000Bank Angle Gain3800Turn Rate Stabilzer	1.2 -5	FD Roll Scaler 1
LNAV LNAV Capture Large	2 Offset Varience	1.5 Small	
FLCH			
Sensitivity Reduction Damping	-0.01Climb Aggression0.1Descent Aggression	1.9 1.2	FD Pitch Scaler -0.008
Vertical Speed			
Sensitivity Reduction Damping	12 0.1		FD Pitch Scaler 0.4
Altitude Hold			
Capture Aggression Damping	4         Pitch Damping           0.1         Elevator Rate	-120 Pitch Accel 0.9 Scale	1.5 FD Pitch Scaler 0.5
LOC/GS			
Sensitivity Reduction LOC Damping	7     Glide Slope Captur       9     GS Damping	re Agg 12 5	
Misc	<b>9</b>		Autobusha Castar 7
CWS Pitch Reduction CWS Pitch Damping	TAC Tuning     O.3     Rudder Damper	r 40	FBW Pitch Tuning -65

#### **END OF MANUAL**