



## **TSR Main Manual** Vers. 1.44 (03.2010)

### **Released Software**

- **Boeing 737-NG**
  - *Includes AutoBrake Pro*
  - *ICAO Position program to simulate sloped or other RWY conditions*
  - *SixPack Logic and Outputs*
  - *Indicators A/P A/T FMC , SixPack , ...*
  - *Full Flaps Control*
  - *TE / LE Flaps control*
  - *Autoslats*
  - *Alternate Flaps System*
  - *Autopilot DISENGAGE by Controls (Aileron, Elevator adjustable range)*
  - *GPWS Mode 4A / 4B / 5*
  - *SYS-TEST Sound control (G/S + Pull Up + Wind Shear)*
  - *Cockpitsonic Hardware Support*
- **Cockpit Systems - B737 (Diagnose program)**
- **Autobrake Pro - B737**
- **Autobrake Pro - Airbus 320 / 330 / 340**
- **Electronic Checklist - B737 / User defined**
- **B737 SwitchSound (for pmSystems B737)**



## Introduction

TSR produces Flight Simulator addon software designed to be run across a computer network or as well on a single PC. Primary usage is for flight simulators or flight training devices. **The software can be used in professional or private use.** Any of our software **isn't** visible in **FS Full Screen Mode when it runs on FS's PC** because it is **not** part of Microsoft's FS panels, they are standalone applications. **But** that means when any of our software is running on a different PC over the Network it doesn't matter in what mode FS is running.

All of the TSR software follows very similar install procedures.

This manual has been split into various sections where the different software function specific to each software is described.

If you find technical errors in this manual please e-mail: [thomas@technicalservicerichter.com](mailto:thomas@technicalservicerichter.com)

## Requirements

- MSFS FS9 (FS2004) / FSX
- Windows 2000 / XP / Vista 32 / Vista 64
- Full registered version of FSUIPC
- Full registered version of WideFS for network installation
- Computer Network TCP/IP or IPX for network installation, check WideFS documentation
- .Net Framework 2.0 (or higher) must be installed on that PC



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**Caution:**

All TSR software requires that the Microsoft .NET Framework 2.0 be installed. Without .NET Framework 2.0 installed, our software will not launch properly and the user will see an error message.

**The Application failed to initialize Properly (0xc0000135)**

**Compatibility :**

**Windows 2000 / XP / Vista 32 / Vista 64**

The software uses the FSUIPClient.dll by **Paul Henty** to communicate with FSUIPC / FS (by **Peter Dowson**).



## Registration

Please make sure you **install the software on that PC where it should run later**, because the Key and DLL file will be created and work on that PC then **only**.

Before you start please run the Registration Program first to create the Reg.ini file. This Reg.ini file you will find in the installation path of the main program,

E.g. **YourDrive:\program files\TSR\CockpitSystemsB737\**

Copy this file and send it to [thomas@technicalservicerichter.com](mailto:thomas@technicalservicerichter.com).

If you have any questions please feel free to ask at [thomas@technicalservicerichter.com](mailto:thomas@technicalservicerichter.com)

Please fill in all fields; it is required for the correct registration.

After you filled in all fields press the **Create Regfile** button, which creates the needed **Code.ini** file in the same folder where this program is placed.

TSR - Reg

Please complete all Fields

First Name, Last Name:

Street, Number:

Zip Code, City:

Country:

Your e-mail:

Vendor

SimMarket  BMT Micro  FS Pilot Shop

Registration for program(s) on this system

AutoBrake Pro Airbus  Electronic Checklist

AutoBrake Pro Boeing 737  Switch Sound

Boeing 737-NG  Cockpit Systems B737

Send the created "Reg.ini" file to

[thomas@technicalservicerichter.com](mailto:thomas@technicalservicerichter.com)

It contains the following lines.

Computer Name:  
Computer OS:  
Generated Code  
First Name, Last Name:  
Street, Number:  
Zip Code, City:  
Country:  
Your e-Mail:  
Vendor:

EXIT

You will get as soon as possible the created File and the Registration Key.

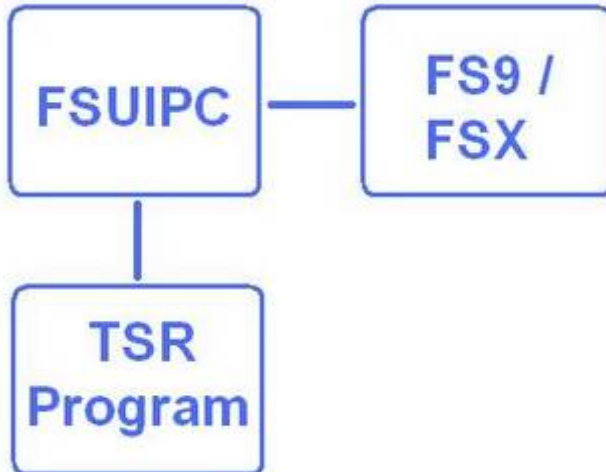


## System Setup (FS <-> FSUIPC <-> TSR / FS <-> FSUIPC <-> WideFS <-> TSR)

### 1. Installation on FS-PC

A registered FSUIPC (by Peter Dowson) is needed.

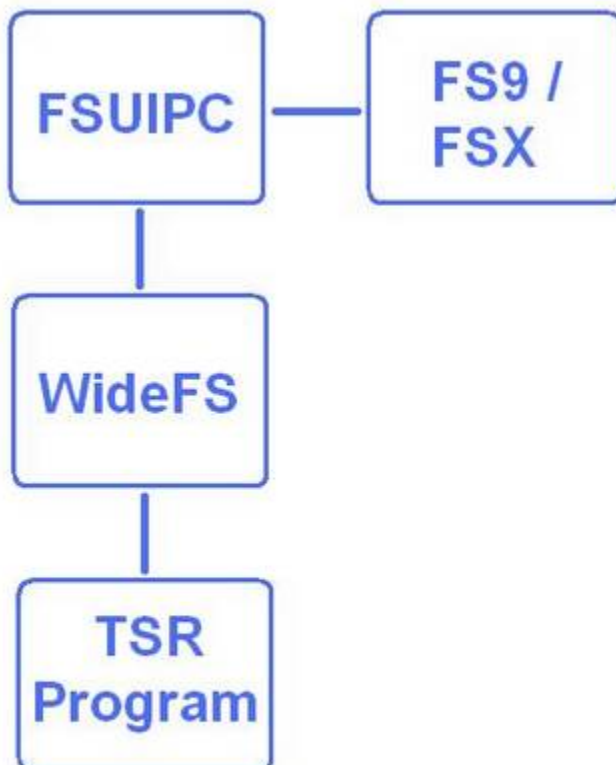
**Electronic Checklist doesn't a registered FSUIPC when used in User defined Checklist mode.**



### 2. Installation on Network PC (Client)

A registered FSUIPC and WideFS (by Peter Dowson) are needed.

**Electronic Checklist doesn't a registered FSUIPC/ WideFS when used in User defined Checklist mode.**





## Cockpit Systems B737



Cockpit Systems is a **Project Magenta** based program to set up and control in a very easy way **Your** Cockpit. So it doesn't make sense to use the program if you **don't** have a **Project Magenta** licence.

Cockpit Systems gives you most information's that are needed and if you decided to install the program on a PC that is connected to your Cockpit Network, it displays also the actually state of the decided Input or Output direct from FS when it is connected to.

So it is not only an **Information** system but more a **needed Diagnostic Tool** !



## Supported Systems

- Forward Overhead Panel (Project Magenta Status)
- After Overhead Panel (Project Magenta Status)
- Pedestal
- Throttle Quadrant
- Captain Main Panel
- First Officer Main Panel
- EICAS
- Side Glare shield
- Flight Controls
- Rudder Pedals

You will get as well needed special information about some systems they are tricky to handle by side all other information like Offsets and its values.

When you connect the program to your FS9/FSX setup you will get the current settings for the selected system and its Offsets.

So you will see live what's going on in your system

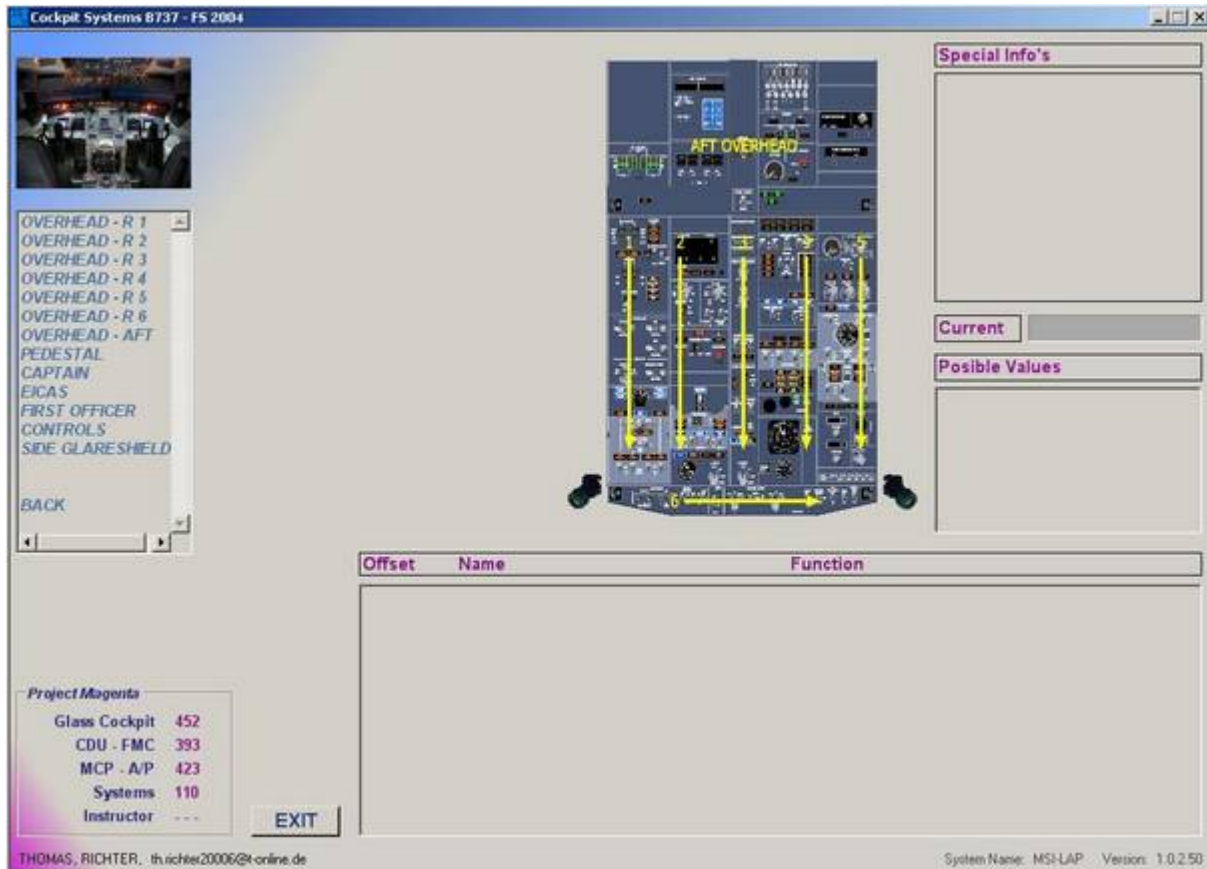
- Do you use the correct Offset
- Do you use the correct values
- Do you use the correct Bits
- Is the state correct compared to the debit

They will be ever up-to-date by FREE UPDATES for our customers

The up-to-date status depends of the Project Magenta's status, so if something will be new or changed in Project Magenta's software you will find close to it or at the same time an Update.



## B 737 Start Screen



The program connects after its start to Flight Simulator FS9 or FSX if available. To do so it is needed that program is installed on a PC or better Laptop that has connection to your Cockpit setup via WideFS.

It is not needed to run the program on a FS connected PC / Laptop but it can give you only information about the switches state or Indication / lights when it has a connection to FS.

Without a connection to FS it gives you all needed information in a "DRY" way.

When the program has connected will get the information which Flight Simulator it has connected to in the program bar on top.

As well you will get the information below which Project Magenta software is connected and its version number. So you have as well the information if you may be need to update older versions of Project Magenta software to be up-to-date.

Project Magenta	
Glass Cockpit	452
CDU - FMC	393
MCP - A/P	423
Systems	110
Instructor	---

In the under most line of the program window you will find on the left YOUR email address, on the right Your PC-name and the program version.

From time to time please check our web page for new updates; they are FREE for our customers.  
<http://www.technical-service-richter.com/> and navigate to Update page.

To exit the program just press EXIT below and it will disconnect from FS and close.



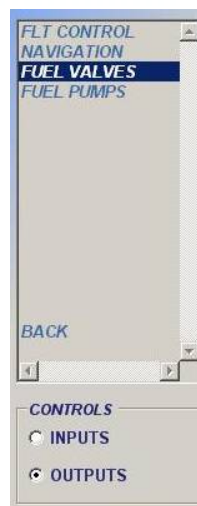
## Program use

To select a section just click on a Item in the left Select Box. Available Items are

- Overhead – R1
- Overhead – R2
- Overhead – R3
- Overhead – R4
- Overhead – R5
- Overhead – R6
- Overhead - AFT
- Pedestal
- Captain
- EICAS
- First Officer
- Controls
- Side Glare shield



By selecting a Item you will get into this section, e.g. Overhead – R1 will then let you select the different panels of this section and as well what will be displayed, **INPUTS** or **OUTPUTS** you need to select.



The available information you will get for each Switch or Indicator / Light looks like the following.



Cockpit Systems B737 - FS 2004

FLT CONTROL  
NAVIGATION  
FUEL VALVES  
FUEL PUMPS

BACK

CONTROLS  
INPUTS  
OUTPUTS

Project Magenta  
Glass Cockpit 452  
CDU - FMC 393  
MCP - A/P 423  
Systems 110  
Instructor ---

EXIT

THOMAS, RICHTER, th.richter20006@t-online.de

Special Info's  
For Phidgets Led64 e.g.  
xxxx LE01 SparVal1 MAX2

Current 0

Possible Values  
OFF = 0  
DIM = 1  
BRIGHT = 2

Offset	Name	Function
57AC	EngVal1	ENGINE 1 Fuel Valve
57AD	EngVal2	ENGINE 2 Fuel Valve
57AE	SparVal1	SPAR 1 Fuel Valve
57AF	SparVal2	SPAR 2 Fuel Valve
56B6	FuelTemp	FUEL TEMP
57C2	ByPass1	FILTER Bypass 1
5694	FuelCrossFeedBrite	FUEL Cross Feed
57C2	Bypass2	FILTER Bypass 2

System Name: MSI-LAP Version: 1.0.2.50

So you get the e.g. the following information about the **SPAR VALVE 1** (Engine 1) as

- Offset in **Hexadecimal**
- Offset name used by Project Magenta in **Sysvar.txt**
- Its **function / description**
- The **possible states** and the corresponding **values**
- Additional information e.g. for use in **Phidgets.txt**
- The **current state / value** if FS is connected to

So the use is as easy as it is possible and the information you get is as informative as needed to setup your Cockpit.

If you have any problems in your Cockpit setup or while you are setting up your hardware you easy **diagnose** what's going on with your hardware and you will see **live** if your hardware is doing correct.

You don't need to check may be anything manually in your wiring or switch connection because you can ever see if the switch and your connected hardware operate the correct Offset with the needed **value** or **Bit**.

The Current information will give you for the most values the correct state, i.e. for **SparVal1** with **value 1** you will see the state **DIM / BRIGHT / OFF** or for switches **ON / OFF**.



## TSR Autobrake Pro

The Autobrake system controls the deceleration in dependence of different conditions at the braking phase. The braking phase itself starts by touchdown of the A/C. A corresponding important factor is the weather condition and the RWY quality that follows, e.g. Rain or Snow, which will prolong the braking distance extremely. But not only braking distance, as well is the “feeling” of a slippery RWY important for a realistic simulation at landing.

Up to now this important system doesn't have enough attention and didn't realize nearly a bit realistic. But this missing system we now give our attention and putting into action as realistic as needed.

“Down they come all” is not enough in our thoughts.

### Boeing



### Airbus





# TSR Autobrake Pro B737



## It contains

- 6 Position Autobrake System for Boeing 737 - 600/ - 700/ - 800/ - 900
- RTO / OFF / AB-1 / AB-2 / AB-3 / AB-MAX
- More than 1100 fixed data used for the mathematics
- Brake distance variables on weather factor (Rain, Snow and its heaviness), automatic setting by FS9 / FSX or manual by e.g. [Project Magenta pmInstructor](#)
- Slippery RWY (vulnerable to weather conditions) effects as skidding to A/C in Braking Phase
- RWY resistance on Takeoff (vulnerable to weather conditions), Rain; Slush; ...
- Displaying of used Landing Distance, as well displayable on [Project Magenta pmInstructor](#)
- Self recognition of [Project Magenta pmSystems](#) and using of its Hydraulic system for charging the Brakeaccu, without pmSystems the Hydraulic pressure is simulated when engine(s) is running
- Brake Sound control, can control a sound for braking with e.g. pmSounds
- Steering Sound control, can control a sound for steer scrubbing with e.g. pmSounds



## Settings

Here you are able to set very important options they are needed for YOUR Cockpit setup.

- **NO Analog Toe Brakes**, Your hardware works not analog OR you would like to use the build-in **DBS** (Dynamic Brake System) instead of your analog hardware. The setting is also used for Joystick-Button input if no Pedals are available
- **NO Differential Brake**, sets the left and right pedal as only one pedal input, is also used for Joystick-Button input if no Pedals are available
- **FSX / Offset \$6DB1**, the Offset HEX 6DB1 is used to control the Autobrake switch instead of the standard Offset HEX 2F80. The standard Offset HEX 2F80 is ONLY useable with a modified Air file and ONLY in FS9 (FS 2004)
- **Press High**, sets the high press value for the pushed Toe Brake Pedal in **DBS** mode
- **Press Low**, sets the low press value for the **non** pushed Toe Brake Pedal
- **Base ft/s<sup>2</sup>**, sets the base negative acceleration rate in **DBS** mode
- **WXR Manually Set**, if unchecked the FS weather will set the RWY conditions. If checked you can set the RWY conditions by e.g. [Project Magenta pmlnstructor](#)
- **Sound Output 0 - 100**, if checked you will get a Offset output value for e.g. sound programs that can handle with this value the **loudness** of a **Braking Sound**. If it is unchecked it just gives the value **0** for **NONE** braking and value **1** for braking.





## Display I

Display I	
WXR Condition	DRY
RWY Condition	DRY
Brake Pressure	0
Landing Distance	0 ft

### WXR Condition

- DRY
- WET
- WET 6mm
- SLUSH 6mm
- SLUSH 13mm
- SNOW 5cm
- ICE

### RWY Condition

- DRY
- WET
- WET 6mm
- SLUSH 6mm
- SLUSH 13mm
- SNOW 5cm
- ICE

### Brake Pressure

Displays the brake pressure in psi, is as well available by an Offset (see Offset list below)

### Landing Distance

Displays the used Landing Distance in ft, is as well available by an Offset (see Offset list below)



## Display II

Display II	
AUTO BRAKE DISARM	ANTISKID INOP
Brakeaccu - Press	3000 psi
Brakeaccu - Value	520
Left Brake	
Right Brake	
Auto Brake Switch	OFF
Brake Sound	OFF
Steering Sound	OFF

### AUTOBRAKE DISARM / ANTISKID INOP

- **AUTOBRAKE DISARM**, is as well available by an Offset (see Offset list below)
- **ANTISKID INOP**, is as well available by an Offset (see Offset list below)

### Brakeaccu Press / Value

The Brakeaccu value 0-520 reflects to the pressure 0-3000psi.

The value is readable in Offset HEX 579E, 2 Byte lengths, very useful for gauges like the Brake Press Gauge from [Flight Illusion](#) or others.

The displayed are NOT static because they will change on each braking phase.

The charging of Brakeaccu is done by the running engine or by pmSystems by [Project Magenta](#) and its Hydraulic pressure values (pmSystems is self recognized).

### Left Brake / Right Brake

It shows the actually brake pressure as bar, for left and right brakes.

### Auto Brake Switch

It reflects just the actually position of the Autobrake switch, RTO / OFF / ...

### Loudness Value

It displays the value for Brake Sound loudness with a range of 0-100, if selected.  
If the option is not selected the value will be 0 = NONE braking or 1 for braking.

### Steering Sound

The **Steer.ini** file controls the Steering (scrubbing) Sound of the front wheel while Taxiing with high steering angle.



## Project Magenta Info / User Info

### Project Magenta Info

This displays all running [Project Magenta](#) software with its current version number. Please make sure you use ever the latest versions, to be up to date.

Project Magenta	
Glass Cockpit	---
CDU - FMC	---
MCP - A/P	---
Systems	---
Instructor	---

### User Info

This displays the User info's like

- registered User Name
- Computer Name
- registered email Address

User Info	
THOMAS, RICHTER	
MSI-LAP	
support@technical-service-richter.de	



## AutoBrake System

The system is going to be active when you turn the switch from OFF to the decided position that is needed for your situation you are in. The **OFF Run** is ever needed.

### Autobrake / RTO

**RTO** – is used while Takeoff, the system can be activated with the following rules.

- Autobrake Switch in position **OFF**
- **All** Throttle levers has to be in **IDLE**
- Groundspeed has to be below **60kts**
- A/C has to be on the **ground**

If the conditions are correct the Autobrake **DISARM** light will **lit** for **3 seconds** and extinguish to display the **RTO** is armed. If one or more conditions are not correct to set the RTO, the DISARM light will **not** lit.

If the **RTO** is armed in Takeoff and you move **all** Throttle levers to **IDLE** above **90kts**, the Autobrake system will use the maximum decided negative Acceleration rate to brake down the A/C. To stop the Brake Phase you can use the manual brake (Joystick or Toe Brakes) or just move a Throttle forward. As soon you do one of the above the Autobrake DISARMS, you will here a disarm sound (if not disabled).

If you do a Landing with Autobrake in position **RTO** the **DISARM** light will lit as soon as you touch down because a Autobrake is not possible.

### Autobrake 1- MAX

**Autobrake 1 - MAX** – is used while Landing, the system can be activated with the following rules.

- Autobrake Switch in position **OFF**
- The A/C has been once airborne
- Select the decided Autobrake position that is needed for your needs
- The Autobrake is active as soon as you touch down

The Autobrake position is changeable while the system is active and working as long as the A/C's groundspeed is above **60kts**.

The following conditions will **DISARM** the Autobrake system:

- If you don't move the Throttle levers back to **IDLE** or **Retard** within **3 seconds** after touchdown
- The system also disarmed if the **Speed brakes** has been **deployed** and retract
- The manual brake is used (Joystick or Toe Brakes)
- One or more Throttle lever moves forward

The **Brakeaccu** is charged by **pmSystems** when it is running, if **pmSystems** is not used, the Brakeaccu is charged static. Each braking phase decreases the Brakeaccu so that the Hydraulic source has to charge the system up to the source pressure.

The used Offset for this is **579E**, **2 Byte length**, were the **Brakeaccu Value (0 – 520)** reflects the **Brakeaccu Press (0 – 3000)** in **psi**.

So it is very easy to set up e.g. the **Brakeaccu Gauge from Flight Illusion** to display the actual Brakeaccu Pressure.



Autobrake system with **6 Position** configuration – **RTO / OFF / 1 / 2 / 3 / MAX**

The used values for **Offset 2F80** (normal FS2004 Offset) or for **Offset 6DB1** (if selected) are

- 0 = RTO
- 1 = OFF
- 2 = Autobrake 1
- 3 = Autobrake 2
- 4 = Autobrake 3
- 5 = Autobrake MAX

If you like to use the **normal FS9** Offset it is needed to change your ????.air file from the Aircraft folder you're A/C you like to use,

e.g. for the default B737-400, **Your FS9 Folder\Aircraft\b737\_400\boeing737-400.air**.

To change this file please send **only** this file to our Support address. You will get back the changed file shortly.





## Aircraft Types

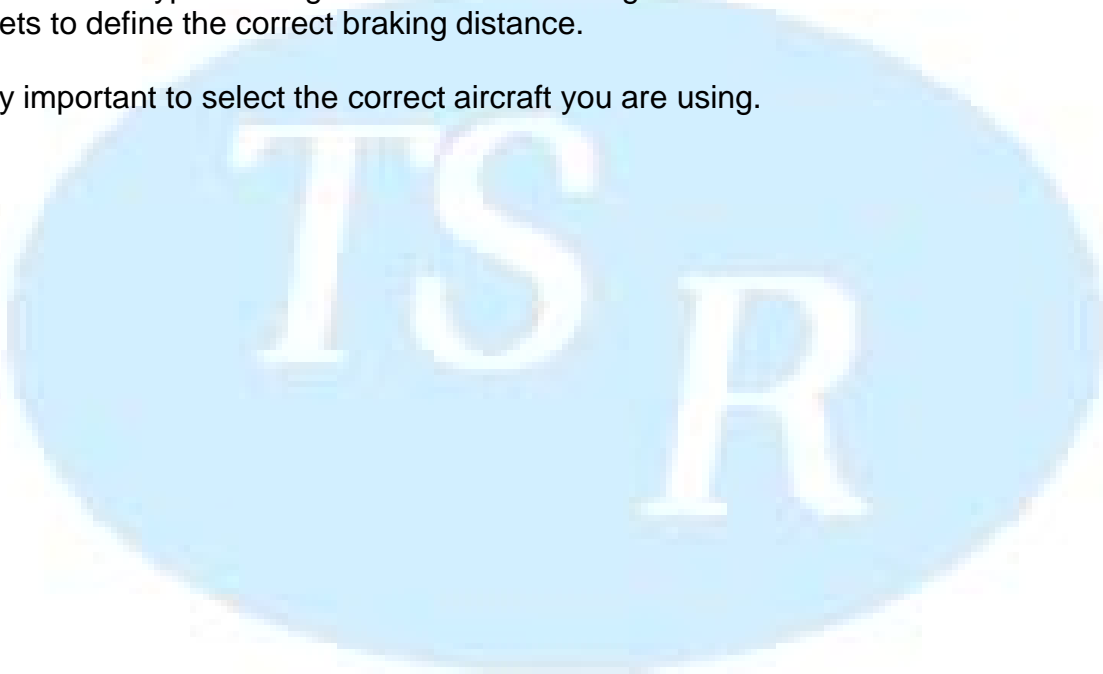
There are 4 different aircraft types of the **Boeing 737** supported.

Aircraft Type

- Boeing 737 - 600
- Boeing 737 - 700
- Boeing 737 - 800
- Boeing 737 - 900

The different aircraft types distinguish in their base weight that is needed to work with the internal spreadsheets to define the correct braking distance.

So it is very important to select the correct aircraft you are using.





## TSRAutoBrakePro.ini and Steer.ini

All settings you change when **TSR AutoBrake Pro** is running are saved for the next start.

But in any case don't change something in this file manual, may be it will damage and it is not more usable for the program.

In this case you have to delete this **TSRAutoBrakePro.ini** file manually, and then restart **TSR AutoBrake Pro** and it will create a new **TSRAutoBrakePro.ini** file with basic settings.

Below you see a typical **TSRAutoBrakePro.ini** file.

### TSRAutoBrakePro.ini

```
[TSR AutoBrake Pro]
{CODE}
xxxxxxxx

{Settings}
A/C Type      = 737
A/C Version   = 600
CycleTime     = 60
Skid Factor   = 9 // 5-15, sets the skidding on slippery RWY
NoDiffBrake   = No
NoAnalog      = Yes
Toe Base      = 65
Press High    = 45
Press Low     = 25
FSX           = Yes // Offset &6DB1 is used instead of &2F80
NoToolTips    = Yes
BrSnd 0-100   = No
WXR Man Set   = No
X Position    = 591
Y Position    = 17
PM-SIMULATOR = No // Special for Project Magenta Simulator's
```

The **Steer.ini** file controls the Steering (scrubbing) Sound of the front wheel while Taxiing with high steering angle.

The values are 300 up to 1600 and reflects the Rudder value, where **1,600 correspondence to 16,000** in FS.

The sound will be active between 7kts up to 35kts groundspeed.

You can set this values to your needs in the range of **300 – 1600**.

The controlled Offset is 5616 Bit3, e.g. for pmSounds use

**nsteersound, 5616, .3, 1, cyc, 100**

But in pmSounds there is no sound available, you need to create one or use some sound file that fulfills your needs.

### Steer.ini

```
[Steer Angle]

7 kts =1600
8 kts =1600
9 kts =1550
10 kts =1350
11 kts =1350
...
29 kts =950
30 kts =950
31 kts =950
32 kts =900
33 kts =850
34 kts =800
35 kts =750
```



## Project Magenta – MCP settings

If you use **AutoBrake II** together with Project Magenta's MCP, make sure you set the following in MCP.ini file.

**DisableAutobrakes = Off**

**DisableBrakes = On**

You will find the **MCP.ini** file in your MCP main folder.

```
MaxROC= 6000 / only if no CDB detected
MaxROD= 6000 / Maximum rate of climb/descent
ClimbThrustLimiter=On / Limits the climb thrust increase
/ if the speed increases too much
/ during FLCH/LVLCHNG climbs
DisableAutobrakes=Off / Switches Off autobrakes below 30
/ Knots
DisableBrakes=On / will disable the brake mode of
/ the MCP (for Rollout) - this is
/ *not* Autoabrakes
SwapCRS=Off / Swaps CRS 1 and CRS 2
```



# TSR Autobrake Pro Airbus



## It contains

- **3 Position Autobrake System for Airbus**  
**LOW / MED / MAX / (OFF)**
- **Brake distance variables** on weather factor (Rain, Snow and its heaviness), **automatic** setting by FS9 / FSX or manual by e.g. [Project Magenta pmlInstructor](#)
- **Slippery RWY** (vulnerable to weather conditions) effects as **skidding** to A/C in **Braking Phase**
- **RWY resistance on Takeoff** (vulnerable to weather conditions), Rain; Slush; ...
- **Displaying** of used **Landing Distance**, as well displayable on [Project Magenta pmlInstructor](#)
- Self recognition of [Project Magenta pmSystems](#) and using of its Hydraulic system for charging the Brakeaccu, without pmSystems the Hydraulic pressure is simulated
- **Spoiler ARM** control for ground handling
- **Full Flaps Control**, 0 → 1 ← 2. For correct indication of 1 / 1+F
- **Brake Sound control**, can control a sound for braking with e.g. pmSounds
- **Steering Sound control**, can control a sound for steer scrubbing with e.g. pmSounds



## Settings

Settings

NO Differential Brake

NO Analog Toe Brakes

WXR Manually Set

Sound Output 0 - 100

NO Tool Tips

Diff Brake Press

Press High

60

Press Low

25

Toe Brake Base ft/s<sup>2</sup>

7,00

- **NO Differential Brake**, sets the left and right pedal as only one pedal input, is also used for Joystick-Button input if no Pedals are available
- **NO Analog Toe Brakes**, Your hardware works not analog OR you would like to use the build-in **DBS** (Dynamic Brake System) instead of your analog hardware. The setting is also used for Joystick-Button input if no Pedals are available
- **WXR Manually Set**, if unchecked the FS weather will set the RWY conditions. If checked you can set the RWY conditions by e.g. [Project Magenta pmlnstructor](#)
- **Sound Output 0 - 100**, if checked you will get a Offset output value for e.g. sound programs that can handle with this value the **loudness** of a **Braking Sound**. If it is unchecked it just gives the value **0 for NONE braking** and value **1 for braking**.
- **Press High**, sets the high press value for the pushed Toe Brake Pedal in **DBS** mode
- **Press Low**, sets the low press value for the **non** pushed Toe Brake Pedal
- **Base ft/s<sup>2</sup>**, sets the base negative acceleration rate in **DBS** mode



## Display I

Display I	
WXR Condition	DRY
RWY Condition	DRY
Brake Pressure	1450
Landing Distance	0 ft

### WXR Condition

#### Current weather conditions in FS

- DRY
- WET
- WET 6mm
- SLUSH 6mm
- SLUSH 13mm
- SNOW 5cm
- ICE

### RWY Condition

Current runway conditions, did you put by FS or by the Instructor station.

- DRY
- WET
- WET 6mm
- SLUSH 6mm
- SLUSH 13mm
- SNOW 5cm
- ICE

### Brake Pressure

Displays the brake pressure in psi, is as well available by an Offset (see Offset list below)

### Landing Distance

Displays the used Landing Distance in ft, is as well available by an Offset (see Offset list below)



## Display II



### ANTISKID INOP

Antiskid Inop indication is as well available by an Offset (see Offset list below)

### Brakeaccu Press

The Brakeaccu value **0-520** reflects to the pressure **0-3000psi**.

The value is readable in **Offset 0x579E, 2 Byte lengths**, very useful for gauges like the Brake Press Gauge from [Flight Illusion](#) or others.

The displayed are NOT static because they will change on each braking phase.

The charging of Brakeaccu is done by the running engine or by pmSystems by [Project Magenta](#) and its Hydraulic pressure values (pmSystems is self recognized).

### Left Brake / Right Brake

It shows the actually brake pressure as bar, for left and right brakes. The value **0-520** reflects to the pressure **0-3000psi** in **Offset 0x6DC6, 2 Byte length (Left)**, and **Offset 0x6DC8, 2 Byte length (Right)**.

### Auto Brake Switch

It reflects just the actually position of the Autobrake switch, RTO / OFF / ...

### Loudness Value / Brake Sound

It displays the value for Brake Sound loudness with a range of 0-100, if selected.

If the option is not selected the value will be 0 = NONE braking or 1 for braking. The displaying in this case is ON or OFF.

### Steering Sound

The **Steer.ini** file controls the Steering (scrubbing) Sound of the front wheel while Taxiing with high steering angle.



## Project Magenta Info / User Info

### Project Magenta Info

This displays all running [Project Magenta](#) software with its current version number. Please make sure you use ever the latest versions, to be up to date.

Project Magenta	
Glass Cockpit	---
CDU - FMC	---
MCP - A/P	423
Systems	---
Instructor	---

### User Info

This displays the User info's like

- registered User Name
- Computer Name
- registered email Address

User Info	
THOMAS, RICHTER	
MSI-LAP	
support@technical-service-richter.de	



## Autobrake System (LOW / MED / MAX)

The system will be activated by switching one of the three positions (LOW / MED / MAX) to **ON**. The positions are only useable by the Offset \$6DB1.

### MAX

**MAX** – is used while Takeoff, the system can be activated with the following rules.

- A/C has to be on the **ground**
- **All** Throttle levers has to be in **IDLE**
- Groundspeed has to be below **60kts**
- Autobrake Button **MAX** pressed for **min one second**

If the conditions are correct the system displays its activity by (blue) indication of the MAX emblem.  
If one condition is missing the system will switch to **OFF**.

If you move **all** Throttle levers to **Idle** while **MAX** is active and the groundspeed is above **72 kts**, the system will braking with full brake pressure down to zero speed.  
To disarm the system you need to switch OFF the system by pressing again the **MAX** switch for min. One second or by using the manual brakes.

If **MAX** is active while landing it will switch to **OFF** as soon as you touchdown and the system is deactivated.

### LOW / MED

**LOW / MED** – is used while Landing, the system can be activated with the following rules.

- The A/C has been once airborne
- Autobrake Button **LOW / MED** pressed for **min one second**
- The Autobrake is active as soon as you touch down and Speedbrakes deployed

The Autobrake position is changeable while the system is active and working as long as the A/C's groundspeed is above **60kts**.

The following conditions will **DISARM** (switch to OFF) the Autobrake system:

- If you **don't** move the Throttle levers back to **IDLE** or **Retard** within **3 seconds** after touchdown
- The system also disarmed if the **Speed brakes** has been **deployed** and **retract**
- The manual brake is used
- One or more Throttle lever moves forward while the system is active

The **Brakeaccu** is charged by **pmSystems** or by **FS-Engine 2** (pmSystems is not running). Each braking phase decreases the Brakeaccu so that the Hydraulic source has to charge the system up to the source pressure.

The used Offset for this is **579E, 2 Byte length**, were the **Brakeaccu Value (0 – 520)** reflects the **Brakeaccu Press (0 – 3000)** in **psi**.

So it is very easy to set up e.g. the **Brakeaccu Gauge from Flight Illusion** to display the actual Brakeaccu Pressure.



## Speedbrake

### Arming / Disarming (by TSR AutoBrake Pro)

To **ARM** the Speedbrake you **SET** the defined Offset 0x6DB0, Bit3.  
The FS Speedbrake will be set to **ARMED** by internal logic of TSR AutoBrake Pro.

To **DISARM** the Speedbrake you **CLR** the Offset 0x6DB0, Bit3.  
FS Speedbrake will be **DISARMED** and Speedbrakes will be retracted if they **have been deployed**. It is then **NOT** needed to move the Throttle lever forward to get them retracted.

## Hydraulic System

### Green

The green hydraulic system charges the **Brakeaccu** for the manual **Brake, Autobrake** and **Antiskid** system. If the green hydraulic system fails or the Antiskid system is switched to OFF, the blue hydraulic system is used if hydraulic pressure is available. The steering system is in this case blocked and the Pilot can control the steering only by using the manual differential brakes.

### Blue

The blue hydraulic system charges the manual Brake and Antiskid (if switched to ON).



## Aircraft Types

There are 3 different aircraft types of Airbus supported.

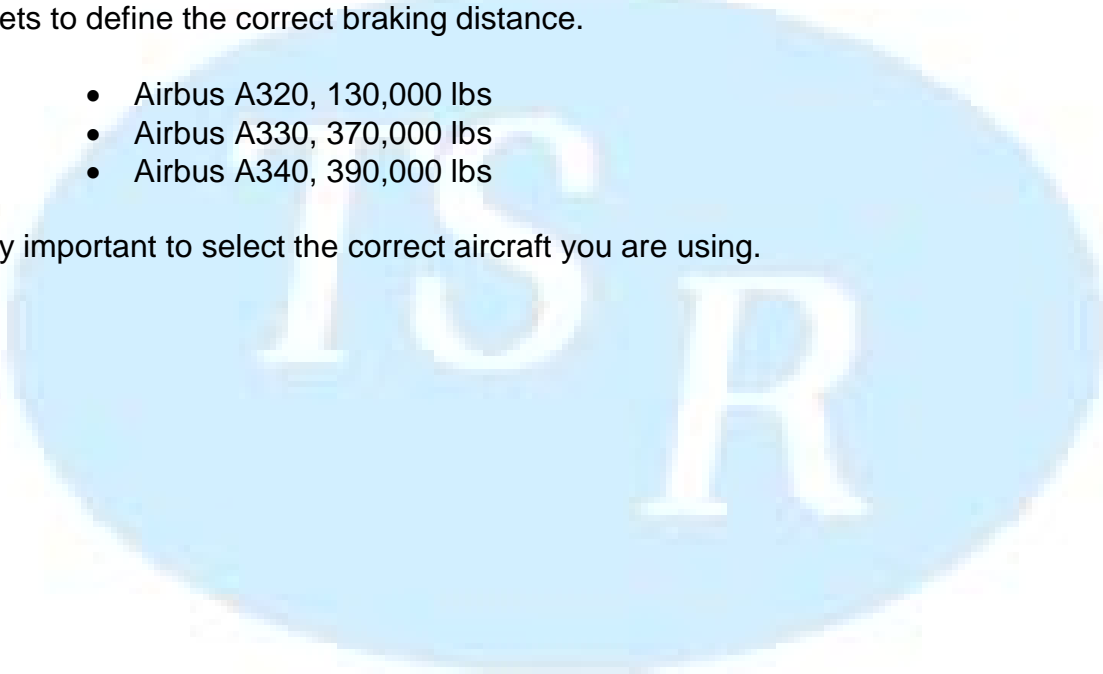
Aircraft Type

- Airbus - A320
- Airbus - A330
- Airbus - A340
- Airbus - A???

The different aircraft types distinguish in their base weight that is needed to work with the internal spreadsheets to define the correct braking distance.

- Airbus A320, 130,000 lbs
- Airbus A330, 370,000 lbs
- Airbus A340, 390,000 lbs

So it is very important to select the correct aircraft you are using.





## TSR AutoBrake Pro Airbus.ini, Steer.ini and Flaps.ini

All settings you change when **TSR AutoBrake Pro Airbus** is running are saved for the next start. But in any case don't change something in this file manual, may be it will damage and it is not more usable for the program.

In this case you have to delete this **TSRAutoBrakePro Airbus.ini** file manually, and then restart **TSR AutoBrake Pro Airbus** and it will create a new **TSRAutoBrakePro Airbus.ini** file with basic settings.

### TSR AutoBrake Pro Airbus.ini

```
[TSR AutoBrake Pro Airbus]
{CODE}
*****

{Settings}
A/C Type      =Airbus
A/C Version   =A320
CycleTime     =50
Skid Factor   =7
NoDiffBrake   =No
NoAnalog      =Yes
Toe Base      =70
Press High    =60
Press Low     =25
- -
NoToolTips    =Yes
BrSnd 0-100   =No
WXR Man Set   =No
X Position    =479
Y Position    =311
PM-SIMULATOR =No
Position MAX  =ARMED

//Normal      = active without Soiler
//Spoiler     = active only with Soiler
//ARMED       = active only with Soiler and ARMED ONLY with Spoiler ARMED
possible

FlapsControl  =Yes
//Yes = Flaps control active
```

The **Steer.ini** file controls the Steering (scrubbing) Sound of the front wheel while Taxiing with high steering angle.

The values are 300 up to 1600 and reflects the Rudder value, where **1,600 correspondence to 16,000** in FS. The sound will be active between 7kts up to 35kts groundspeed. You can set this values to your needs in the range of **300 – 1600**. The controlled Offset is 5616 Bit3, e.g. for pmSounds use **nsteersound, 5616, .3, 1, cyc, 100 !!** But in pmSounds there is no sound available, you need to create one or use some sound file that fulfills your needs.

### Steer.ini

```
[Steer Angle]

7 kts =1600
8 kts =1600
...
...
...
33 kts =850
34 kts =800
35 kts =750
```

### Flaps.ini

```
[Flaps Position 0-MAX]

Flaps Position -0 =0
Flaps Position -1 =3276
Flaps Position -1+F =6553
Flaps Position -2 =9829
Flaps Position -3 =13106
Flaps Position FULL =16383
```



## Manual Changes in FSUIPC Module

### 1) Autobrake Switch

#### a) Using the Offset 0x2F80 (FS9 and Boeing ONLY)

This Offset **0x2F80**, **1 Byte length**, is in **FS9 ONLY** useable!!

But it is **needed** to send your Aircraft **.air** file to Support to modify it, e.g. [boeing737-400.air](#) for the default 737-400, to make it useable.

#### b) Using the Offset 6DB1 (FS9, FSX ONLY, Boeing and Airbus ONLY)

This Offset **0x6DB1**, **1 Byte length**, is useable in FS9 and FSX but in any case needed to work with FSX or Airbus.

**There are NO air file changes needed.**

#### c) To set the different positions you need to define

- **Boeing 737**, x6 Position Switch (Offset **0x2F80** or Offset **0x6DB1** values 0-5)

**0 = RTO**  
**1 = OFF**  
**2 = Autobrake 1**  
**3 = Autobrake 2**  
**4 = Autobrake 3**  
**5 = Autobrake MAX**

- **Airbus**, x3 Buttons

**Bit0 = LOW** (ON / OFF)  
**Bit1 = MED** (ON / OFF)  
**Bit2 = MAX** (ON / OFF)

The **Bit** has to be **SET** by pressing the button and to be **CLR** by release the button.

### 2) Flaps Lever

#### Using the Offset 0x6DB5

In **TSR AutoBrake Pro Airbus.ini** file you need to set the Flaps control to Yes.

**FlapsControl =Yes**

Then define the Flaps position from your lever to this Offset with the following values.

**0 = Position 0**  
**1 = Position 1**  
**2 = Position 2**  
**3 = Position 3**  
**4 = Position FULL**



### 3) Toe Brake

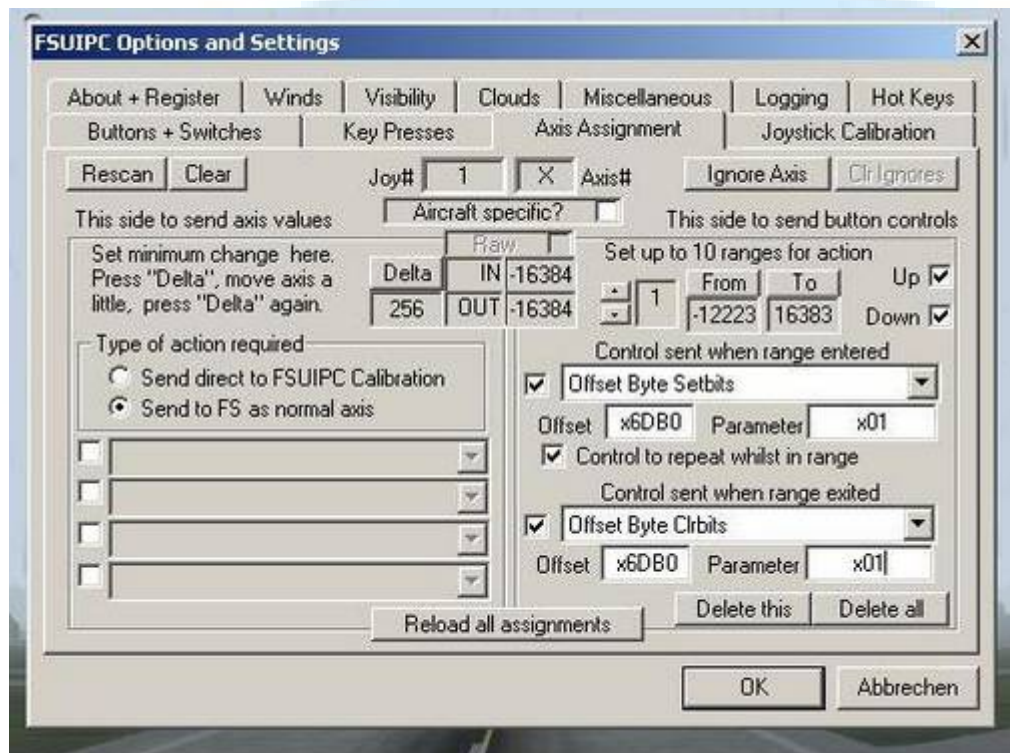
The Toe Brakes need to send a signal when they are pushed. For this there is a setting in FSUIPC to do, both for **analog** and for **digital**.

The following pictures will show this easy setting.

**The used Offset is 0x6DB0, Bit0 and Bit1.**

#### a) Left Toe Brake

- open FSUIPC and select "**Axis Assignment**"
- press "Rescan" button and move then the **Left Toe Brake**, you should see in the centre "**Raw**" changing values. If not press again "**Rescan**" and move the **Left Toe Brake**, sometimes it has to be done multiple times to get the correct axis (FSUIPC scans very fast).
- now push the **Left Toe Brake** a bit (maybe 1 cm / 0.4 in) to get a small dead space.
- hold the pedal in this position and press the "**From**" button
- push the pedal full forward and press the "**TO**" button
- now you leave the pedal, the values in the boxes IN/OUT and FROM/TO depends of your hardware and are different to the ones here
- select in the Dropdown list "**Offset Byte Setbits**" following like the picture shows
- when you finished the fill-in and highlighted the boxes correct press OK

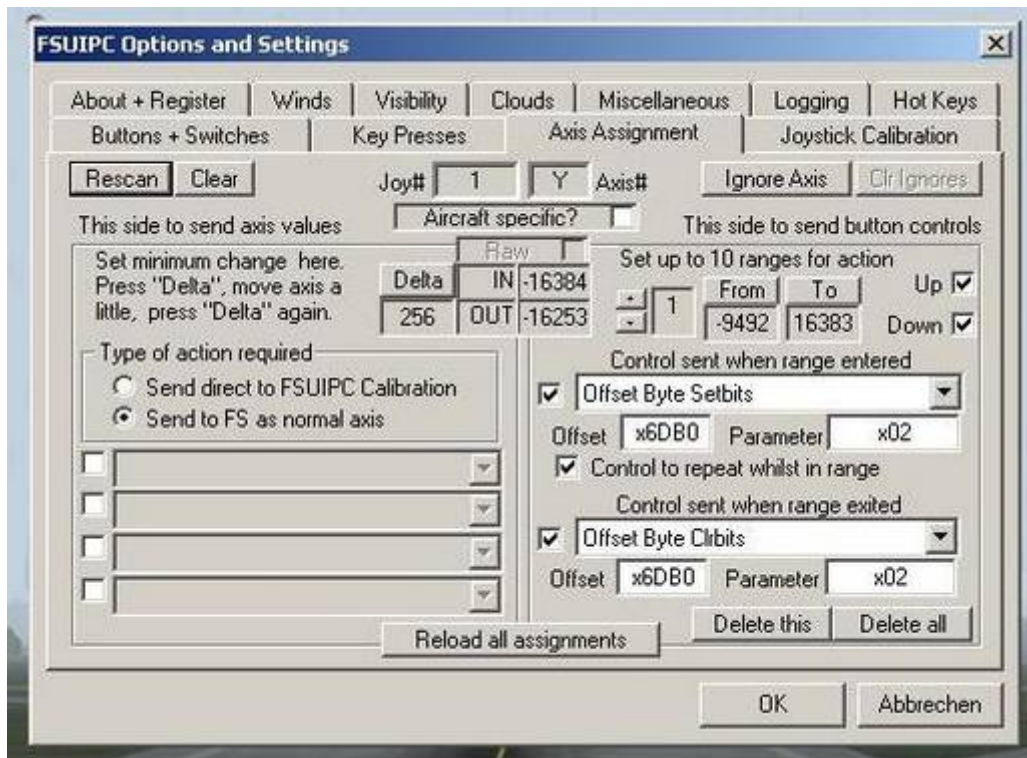


FSUIPC setting, left Toe Brake Pedal



### b) Right Toe Brake

- open FSUIPC and select “**Axis Assignment**”
- press “Rescan” button and move then the **Right Toe Brake**, you should see in the centre “**Raw**” changing values. If not press again “**Rescan**” and move the **Right Toe Brake**, sometimes it has to be done multiple times to get the correct axis (FSUIPC scans very fast).
- now push the **Right Toe Brake** a bit (maybe 1 cm / 0.4 in) to get a small dead space.
- hold the pedal in this position and press the “**From**” button
- push the pedal full forward and press the “**TO**” button
- now you leave the pedal, the values in the boxes IN/OUT and FROM/TO depends of your hardware and are different to the ones here
- select in the Dropdown list “**Offset Byte Setbits**” following like the picture shows
- when you finished the fill-in and highlighted the boxes correct press OK



FSUIPC setting, right Toe Brake Pedal



## Phidgets and FS2Phidgets

For Phidgets FSVariables???.ini you can insert the following lines (based on FS2Phidgets 4.29). You will find then this setting under "TSR-Autobrake B737".

### For 6 Position configuration

```
[TSR_AUTOBRAKE B737]
Offset=6DB1
Length=1
0=RTO
1=OFF
2=BRAKE1
3=BRAKE2
4=BRAKE3
5=MAX
FSType=Discrete
MaxDiscretes=5
Format=#####
Multiplier=1
Divisor=1
Integer=False
NormalizeAngle=False
WriteOnly=False
```

### Airbus - LOW

```
[TSR Autobrake LOW]
Offset=6DB1
Length=1
FSType=Digital
Bit=0
BitPairing=False
Partner=0
PartnerOnOffToggle=False
Format=#####
Multiplier=1
Divisor=1
Integer=False
WriteOnly=True
OffValue=0
OnValue=1
```

### Airbus -MED

```
[TSR Autobrake MED]
Offset=6DB1
Length=1
FSType=Digital
Bit=1
BitPairing=False
Partner=1
PartnerOnOffToggle=False
Format=#####
Multiplier=1
Divisor=1
Integer=False
WriteOnly=True
OffValue=0
OnValue=1
```

### Airbus -MAX

```
[TSR Autobrake MAX]
Offset=6DB1
Length=1
FSType=Digital
Bit=2
BitPairing=False
Partner=2
PartnerOnOffToggle=False
Format=#####
Multiplier=1
Divisor=1
Integer=False
WriteOnly=True
OffValue=0
OnValue=1
```

# TSR Boeing 737-NG

**Boeing 737-NG**

Indications | AB - Pro | DBS / Fuel | Settings | System Exceptions

**Display I**

WXR - Condition  
DRY

RWY - Condition  
SLUSH 13mm

Brake Press  
0

Landing Distance  
---

**Display II**

**AUTO BRAKE DISARM**    **ANTISKID INOP**

Brakeaccu - Press    --

Brakeaccu - Value    --

Left Brake   

Right Brake   

Auto Brake Switch   

Brake Sound    888

Steering Sound    888

AutoBrake Pro

**Boeing 737-NG - FS 2004**

Indications | AB - Pro | DBS / Fuel | Settings | System Exceptions

**Indications**

<b>FIRE WARN</b>		<b>MASTER CAUTION</b>		<b>A/P P/RST</b>	<b>A/T P/RST</b>	<b>FMC P/RST</b>
<b>FLT CONT</b>	<b>ELEC</b>	<b>ANTIICE</b>	<b>ENG</b>	<b>TEST 1</b>	<b>TEST 2</b>	
<b>IRS</b>	<b>APU</b>	<b>HYD</b>	<b>OVERHEAD</b>			
<b>FUEL</b>	<b>OVHDET</b>	<b>DOORS</b>	<b>AIR COND</b>			
<b>SPEED BRAKE ARMED</b>	<b>BELOW G/S P-INHIBIT</b>	<b>TOO LOW TERRAIN</b>	<b>LE SLATS TRANSIT</b>	<b>LE FLAPS TRANSIT</b>		
<b>SPEED BRAKE DO NOT ARM</b>	<b>FLAPS LOAD RELIEF</b>	<b>TOO LOW GEAR</b>	<b>LE SLATS EXT</b>	<b>LE FLAPS FULL EXT</b>		
<b>SPEEDBRAKES EXTENDED</b>	<b>FLAPS - UP -</b>	<b>TOO LOW FLAPS</b>	<b>LE SLATS FULL EXT</b>			
<b>STAB OUT OF TRIM</b>						

Hardware Output Control

Master Light Test
EXIT

Version 7472.67.211.49

Indications



## Indications

The following Indications and Sound controls are supported as close to real as possible.



FIRE WARN (Button)

MASTER CAUTION (Button)

FIRE WARN (Light)

MASTER CAUTION (Light)



RECALL (Button)

Output for each Symbol (Light)

The complete logic is included but **pmSystems (Project Magenta)** is as source needed.

The pmSystems SixPack logic is NOT relevant for the indication or its internal logic.

The supported Offsets (Output and Input) are NOT the Project Magenta ones! That means that e.g. Hardware that uses / supports ONLY Project Magenta's SixPack Offsets for Outputs and Inputs is **NOT useable!!**

**At this stage (Hardware / Driver related) e.g. the CPflight's MIP-Board is NOT useable as long you cannot define its Offsets for those Outputs.**



A/P (P/RST) (Light – red / Test-1 + logic)

A/T (P/RST) (Light – red / Test-1 + logic)

A/P (P/RST) (Light – orange / Test-2)

A/T (P/RST) (Light – orange / Test-2)

FMC (P/RST) (Light – orange / Test-1/2 + logic)

A/P (P/RST) (Button + Disarm controlled (double signal like real))

A/T (P/RST) (Button + Disarm controlled (double signal like real))

FMC (P/RST) (Button)



TEST – 1 (Button)

TEST – 2 (Button)



SPEED BRAKE ARMED (Light)

SPEED BRAKE DO NOT ARM (Light)

SPEEDBRAKES EXTENDED (Light)

TOO LOW  
TERRAINTOO LOW  
GEARTOO LOW  
FLAPS

GPWS – Mode 4 (4A + 4B)

TO LOW TERRAIN (Light)

TO LOW GEAR (Light)

TO LOW FLAPS (Light)

TO LOW TERRAIN (Sound control, to Inhibit by Offset Bit)

TO LOW GEAR (Sound control, to Inhibit by Offset Bit)

TO LOW FLAPS (Sound control, to Inhibit by Offset Bit)

(The possible **Sound Inhibit** is NOT real but for those ones the like or need to inhibit each sound while active)

BELOW G/S  
P-INHIBIT

GPWS - Mode 5

BELOW G/S (Light)

BELOW G/S (Button to Inhibit sound, self reactivation by logic)

BELOW G/S (Sound control)

FLAPS LOAD  
RELIEFFLAPS  
- 0 -Indicates the actual Flaps setting when controlled by *TSR Boeing 737-NG*

FLAPS LOAD RELIEF (Light) is an **Option** to Boeing 737's (not standard equipment). To get it work it is needed to let the program controls the whole Flaps system.

You need just to define your Flaps Lever with its 9 positions (0° to 40°) to a special Offset (value 0 to 8), so the program controls instead the Flaps and of course the **Flaps Load Relief** function.

LE SLATS  
TRANSITLE FLAPS  
TRANSITLE SLATS  
EXTLE FLAPS  
FULL EXTLE SLATS  
FULL EXTIndicates LE SLATS/FLAPS Positions when controlled by *TSR Boeing 737-NG*

This full controlled system contains

- TE FLAPS control
- LE SLATS control
- LE FLAPS control
- Autoslats system (in advanced of STALL)
- Alternate Flaps system (no Hydraulic B)

The system is very complicate and that's why it is only supported by *TSR Boeing 737-NG* Flaps full control Mode.

So the Flaps are controlled by a separate Offset (Input) and the Alternate Flaps are controlled by pmSystems Alternate Master switch and Alternate Position switch.

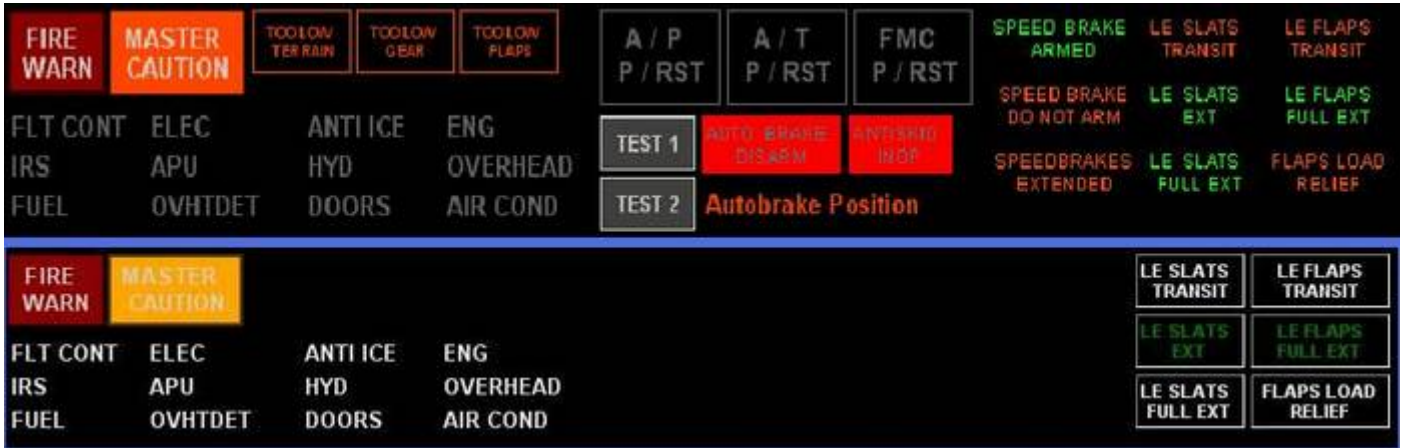
STAB OUT  
OF TRIM

Indicates STAB OUT OF TRIM when Autopilot is active.

The Limit is set in *Indication.ini* file as e.g. **Stab Out Off Trim UP=6000** and **Stab Out Off Trim DN=4500**

## Boeing 737-NG Display

This is a separate program to display any indications controlled by TSR Boeing 737-NG program. You can also control the Boeing 737-NG program with this tool if the needed hardware is not connected or available in your setup. It doesn't display any e.g. pmSystems controlled indications!



The panel can be placed above (overlapped) of any other program like PFD / ND / EICAS / ... Different groups of the indications are hide able, so you can decide what should be displayed on the screen where it is installed.

It is possible to install multiple copies in your network to display different indications on different screens.

### Program controls

- **Shift + T**                    **move UP**
- **Shift + B**                    **move DN**
- **Shift + F**                    **move LEFT**
- **Shift + H**                    **move RIGHT**
- **Shift + +**                    **size increase**
- **Shift + -**                    **size decrease**
- **Shift + Q**                    **program close**

In Boeing737NG Display.ini file you can change the different settings

**Hardware =Yes** ← this is set to Yes if you want to control the Buttons with the Mouse (no hardware is used)  
**TopMost =No** ← This sets the program into foreground when Yes is used

The following settings enables / disables the different indication groups.

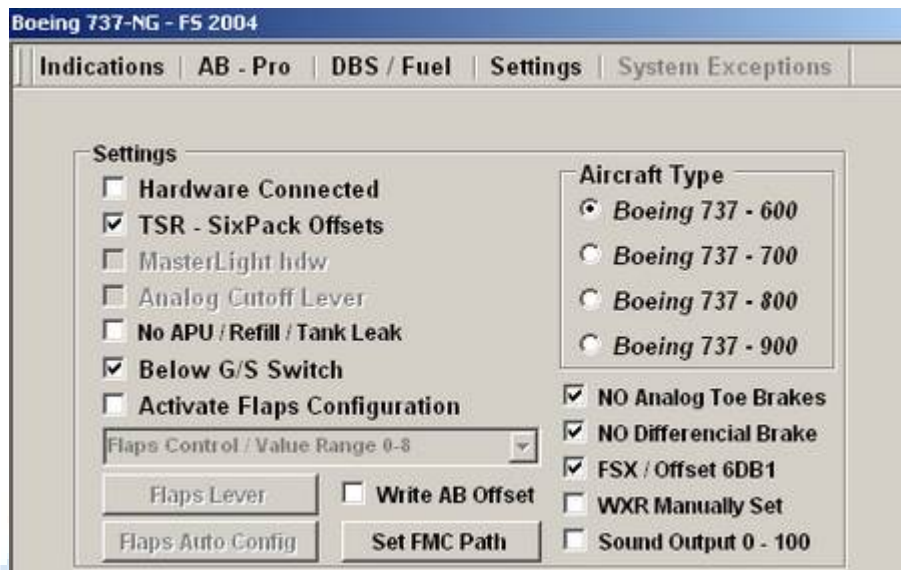
```

{Visible Indications}
SixPack =Yes
Flaps =Yes
AFDS Indication =Yes
TOO Low ... =Yes
Autobrake =Yes
Speed Brake =Yes
    
```

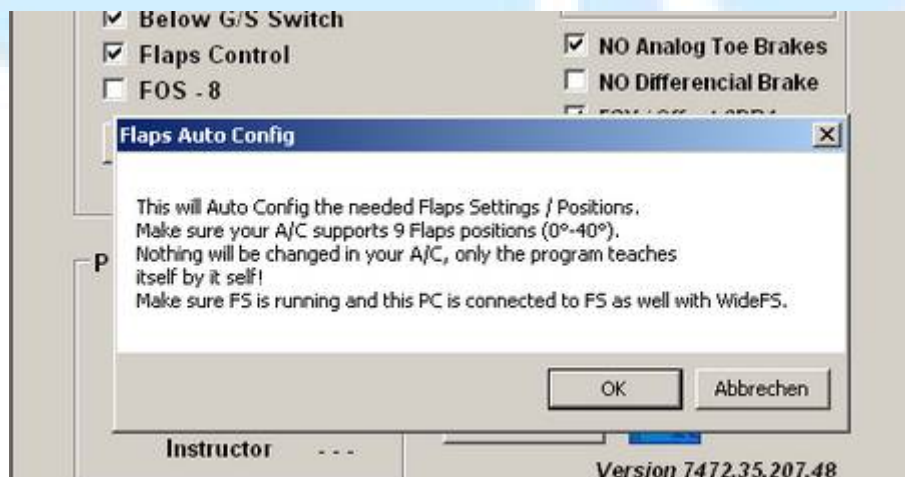


## Settings

Here we control the important settings for AutoBrake Pro and other logic.



- **Hardware Connected**, connects just the Offsets to its functions
- **TSR – SixPack**, activates the internal SixPack logic / System
- **No APU / Refill / Tank Leak**, deactivates this internal logic system
- **Below G/S Switch**, activates the internal logic / handling when a physically hardware button is available for this function (Inhibit Callout while active)
- **Flaps Control**, activates the internal Flaps logic and handling (needed for FLAPS LOAD RELIEF function)
- **Flaps Auto Config**, activates the self teaching system for needed Flaps position. Is needed for Flaps Control but as well for normal work.



While pressing **Flaps Auto Config** the system teaches itself to get any needed Flaps position. It will take may be up to one minute to **Finish** and saving the corresponding values.

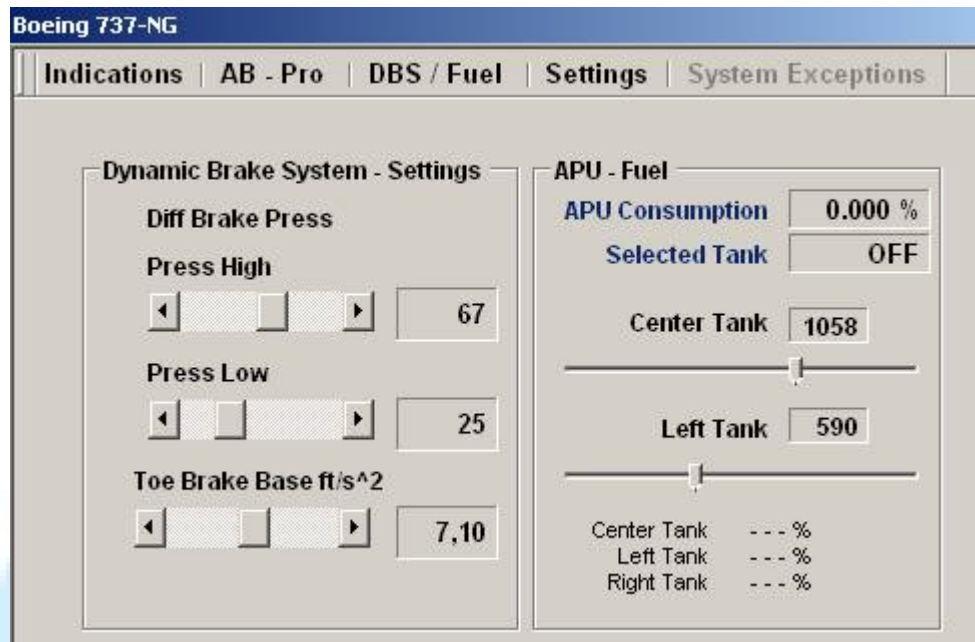
Important is that your used A/C is defined to 9 Flaps positions, **0 / 1 / 2 / 5 / 10 / 15 / 25 / 30 / 40 deg.**

**Any other settings are related to AutoBrake Pro B737 and are described in its own part above (AutoBrake Pro), [page 12](#).**



## APU Fuel consumption / Tank refill / Tank Leak

It is a controller program and Tank refill program, designed to use it together with pmSystems and its 737 logic ONLY.



1. It controls the Fuel consumption of the APU for 737, depending of the Fuel Tank selection for the APU. The APU can use fuel from Center tank or Left main tank.  
If left Center pump is ON the APU consume fuel from the Center tank, else the left Main tank is used.  
In any case the APU can only consume fuel if NO engine consume fuel from the selected Tank, to don't bother the engines consume.  
With the slider you can control the consumption for the selected Tanks, left Main or Center Tank.
2. You know there is a panel above the Bus-display named "Auxiliary Fuel Transfer" without a function.  
Now you can refill the Tanks with this switches, of course it takes a bit time like in real !

### To refill -->

**Both engines Cutoff**

**Park brake set**

**Extern Power connected and Bus connected**

You can refill the Left and Right Main tank separate or together.

If both Main tanks are filled to 100% and both switches are ON, then the Center Tank becomes filled. It takes again time.

If you switch to OFF the refilling will stops.

You can refill by **SetBit** (Start) / **ClrBit** (Stop) in Offset **0x56B3**.

**Left refill** = Bit 4

**Right refill** = Bit 5

3. You can simulate loss of fuel by **SetBit** (Start) / **ClrBit** (Stop) in Offset **0x6DB8**
  - Center Tank** = Bit0
  - L-Main Tank** = Bit1
  - R-Main Tank** = Bit2

## System Exceptions

Here you can select or disable included systems logic.

**Boeing 737-NG**

Indications
AB - Pro
DBS / Fuel
Settings
System Exceptions

**System Exceptions / Settings II**

<input checked="" type="checkbox"/> No Logic <input type="checkbox"/> No IRS Handling <input type="checkbox"/> No Drive Switches <input type="checkbox"/> Simple APU <input type="checkbox"/> No SixPack <input type="checkbox"/> No Indicators <input type="checkbox"/> FES - 7 <input type="checkbox"/> FES - 8 <input type="checkbox"/> FES - 9 <input type="checkbox"/> FES - 10	<input checked="" type="checkbox"/> Bleed / Pack System <input checked="" type="checkbox"/> Bus Click
---	--

**Project Magenta**

600	---
CDU - FMC	---
MCP - A/P	---
Systems	---
Instructor	---

User Info

*MSI-LAP*

*support@technical-service-richter.de*

*FSUIPC is not OPEN*

*Master Light Test*

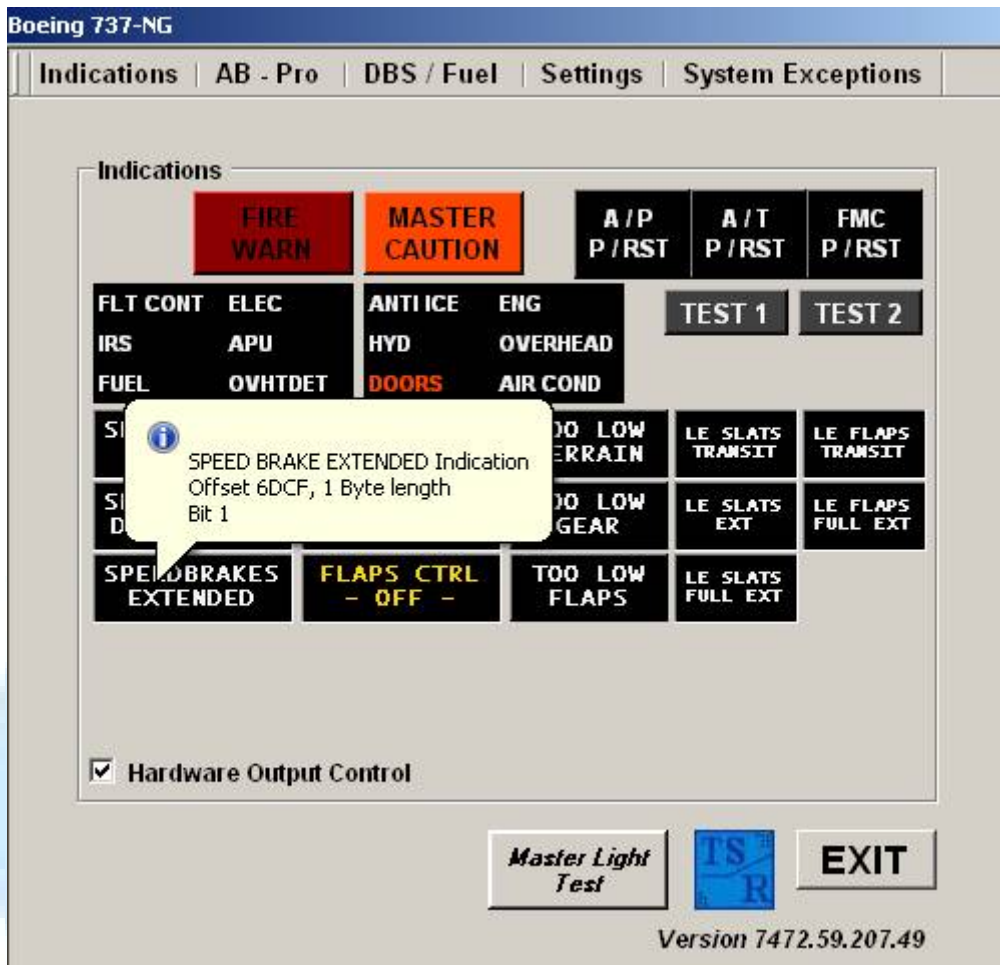
EXIT

*Version 7472.76.211.49*

If you want to use the build in Bleed / Pack System make sure you removed the corresponding lines in the logic file (.lgc), check **pmSystems changes** page.

## Hardware Output Control

To activate this function just check the Box below and the system goes into Check-Mode.



Check-Mode (Hardware Output Control) means that you can set any indication to blink mode by clicking direct on it. The corresponding Output Offset is then as well in blink modus and you can check your connected hardware for its correct working.

The blink modus will stop if you cclick again on the decided indication.

Further information's about the decided indication Offset you will get if you move the mouse above the indication, Hardware Output Control needs to be checked.



## Boeing 737-NG.ini / Flaps.ini / Indication.ini / Scrubbing.ini

In this files there are all settings saved you did in the program or need to change also manually.

### 1. Boeing 737-NG

```
[Boeing 737-NG - 7472.29.207.48]

[Logic Settings]
A/C Version B737 - =600
Hardware Connected =NO
TSR - SixPack =YES
MasterLight hdw =NO
Analog Cutoff Lever =NO
No APU/Refill/Leak =NO
BELOW G/S Switch =YES
FLAPS CONTROL =YES
    //FOS-8

[AutoBrake Pro]
No Analog Toe Brake =YES
No Different. Brake =NO
Use Offset 0x6DB1 =YES
WXR Manual Set =NO
Sound Output 0-100 =NO
CycleTime =50
Toe Base =71
Press High =67
Press Low =25
Skid Factor =7
PM-SIMULATOR =NO
AT/Dis. Offset 050A =YES

[pmFMC - Path]
FMC Main Path =\AMD-HARDWARE\pmCDU
NAV Date =010105

[System Exceptions]
No IRS Handling =YES
No Drive Switches =NO
    //FSE-3
Simple APU is used =YES
No Logic =YES
No Indicators =NO
No SixPack =NO
    //FSE-8
    //FSE-9
    //FSE-10
    //FSE-11
    //FSE-12
    //FSE-13
    //FSE-14
    //FSE-15
    //FSE-16
    //FSE-17
    //FSE-18
    //FSE-19
    //FSE-20

[Fuel Handle]
Center =1058 // Sets the Fuel used for Center-Tank, 10 <-> 1600
Left =590 // Sets the Fuel used for Left-Tank, 10 <-> 1600
Wing Refill =150
Cent Refill =150 // Refill Rate 20 <-> 200, default 150

[Screen Settings]
Position - X =722
Position - Y =143 // X/Y = 0 <-> 1100/750 , default 10
```

The **red** market lines are without any meaning for you!



## 2. Flaps.ini

The Flaps Position settings are done by the program itself in teach modus.

The only settings that you can change if needed is the **Flaps Speed** setting for **Flaps 30°** and **Flaps 40°** which is the reference for **FLAPS LOAD RELIEF** function.

*[Flaps Position/Speed 0-40]*

```
Flaps Position - 0 =0
Flaps Position - 1 =2047
Flaps Position - 2 =4095
Flaps Position - 5 =6143
Flaps Position - 10 =8191
Flaps Position - 15 =10239
Flaps Position - 25 =12287
Flaps Position - 30 =14335
Flaps Position - 40 =16383
```

```
Flaps Speed - 30 =176
Flaps Speed - 40 =163
```

```
Flaps Lever - 0 =0
Flaps Lever - 1 =1
Flaps Lever - 2 =2
Flaps Lever - 5 =3
Flaps Lever - 10 =4
Flaps Lever - 15 =5
Flaps Lever - 25 =6
Flaps Lever - 30 =7
Flaps Lever - 40 =8
```

## 3. Indication.ini

The FLAPS POS. 5 / 10 / 15 Deg. Settings are done by the program itself in Teach modus.

*[Indication Settings]*

```
G/S ARMED ALTITUDE =1800 // Sets the ARMED Altitude (ft), 1000 <-> 2000 (default 1000)
G/S MIN ACTIVE =60 // Sets the G/S MIN deviation, 45 <-> 85 (default 60)
FLAPS POS. 1 Deg. =409
FLAPS POS. 2 Deg. =819
FLAPS POS. 5 Deg. =2047
FLAPS POS. 10 Deg. =4095
FLAPS POS. 15 Deg. =6143 // Sets the Flaps Value of Offset 0x0BE0 for 1°-10°
```



#### 4. Scrubbing.ini

The settings are described in AutoBrake Pro Scrubbing.ini file settings above. But the difference is that there are now settings for each weather condition. They have all a base setting but can be changed to your needs by yourself.

```
[Boeing 737-NG]
```

```
[Condition DRY]
```

```
7 kts =1600
```

```
8 kts =1600
```

```
9 kts =1550
```

```
...
```

```
[Condition WET]
```

```
7 kts =1480
```

```
8 kts =1460
```

```
9 kts =1450
```

```
...
```

```
[Condition WET 6mm]
```

```
7 kts =1460
```

```
8 kts =1450
```

```
9 kts =1400
```

```
...
```

```
[Condition SLUSH 6mm]
```

```
7 kts =1450
```

```
8 kts =1440
```

```
9 kts =1390
```

```
...
```

```
[Condition SLUSH 13mm]
```

```
7 kts =1400
```

```
8 kts =1380
```

```
9 kts =1370
```

```
...
```

```
[Condition SNOW 5cm]
```

```
7 kts =1380
```

```
8 kts =1370
```

```
9 kts =1350
```

```
...
```

```
[Condition ICE]
```

```
7 kts =1200
```

```
8 kts =1170
```

```
9 kts =1150
```

```
...
```



# TSR Electronic Checklist

The **Electronic Checklist** brings you to no paper need !!

## Create Your Own Checklists !!

The **Electronic Checklist** is a nearly **full automatic** Checklist system that checks all available clear settable positions and settings in the decided Checklist, in B737 Mode when **pmSystems** is connected only.

In **Customer Mode** you can **create** your own **needed Checklist**, up to **20 Checklists** with **50 Points** for each!  
The **Electronic Checklist** is by **Key / Offset (registered FSUIPC) / Control Panel** settable to **VISIBLE / HIDE**, so you can switch it to **ON / OFF** to don't have it as **interference factor** in view.

### B737 – Mode, **pmSystems** is connected.

The Pilot needs to set the requested Configurations and when the request is fulfilled the next Checklist Point will be selected by automatic.

### B737 Manual – Mode, **pmSystems** is NOT connected / needed.

The Pilot needs to set the requested Configurations if available and needs to mark the Checklist Point as **CHECKED**; the next Checklist Point will be selected by automatic.

### Customer – Mode, it just works as a **STAND ALONE** application on any PC (Framework 2.0 needed).

You are able to **create your own Checklists** with your to your fulfills.

- up to **20 Checklists**
- up to **50 Checklist points per Checklist**
- useable for **ANY Aircraft**
- useable e.g. for **ONLINE FLYING** to create your **Online-Flying-Checklists**, you will never forget your important things to do and your Controller will be amazed !

It is easy to handle with a lot of options to control.

- Supported system **B737**
- Supports **Customized Checklists** created by yourself for **Your needs or different A/C's !**
- **Auto Check** or **Manual Check** selectable
  - **Auto Check**, detects **pmSystems** (default logic file) and needed FS status information
  - **Manual Check**, if **NO pmSystems** is used or in a **different configuration** use
- full **Keyboard** control
- full **Mouse** control
- full **Offset** control via FSUIPC/WideFS
- separate **Control Panel**, installed on a **different PC** via FSUIPC/WideFS
- **Hide / Visible** status to be visible overlapped of e.g. ND display or another Display.
- **Resize-able** up to **1280 x 1024**, **Position** and **Size** is saved.
- **Font size**, **Color** (white or green) and **Bold** is set-able
- each **Checklist** can be **cleared**, one or multiple



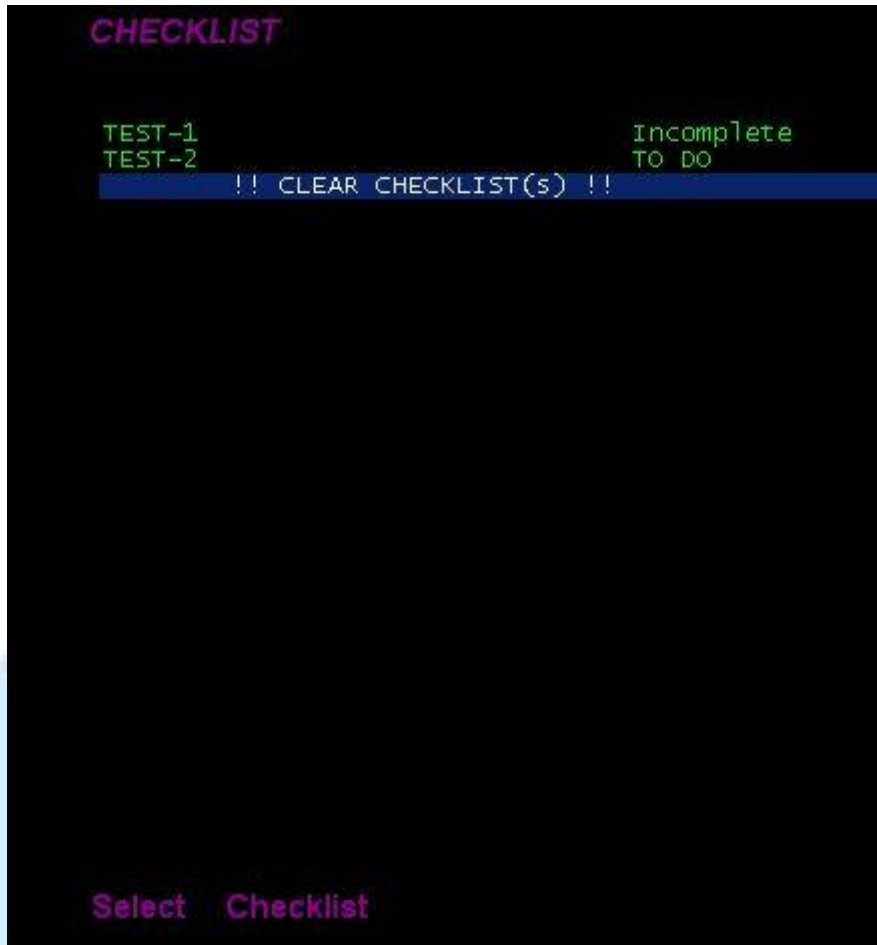
TSR Electronic Checklist overlapped of ND display

## It contains the following Checklists / Function for B737

- RECEIVING COCKPIT
- BEFORE ENGINE START
- CLEARED FOR ENGINE START
- ENGINE START
- AFTER ENGINE START
- BEFORE TAKEOFF
- CLEARED FOR TAKEOFF
- AFTER TAKEOFF
- DECENT
- APPROACH
- LANDING
- AFTER LANDING
- PARKING
- TERMINATION
- CLEAR CHECKLIST(S), one or more Checklist(s) can be cleared



## Create your own Checklists for your needs or different A/C's





Control Panel to control the Electronic Checklist from a different PC by using the mouse



The system in Autocheck mode waits for minimum APU EGT to set the CHECKED status



```

BEFORE ENGINE START

Battery. . . . .ON . CHECKED
Standby Power. . . . .AUTO . CHECKED
LIGHT TEST . . . . .ON . CHECKED
OXYGEN & INTERPHONE. . . . . CHECKED
APU. . . . .ON . CHECKED
APU. . . . .START . CHECKED
APU EGT. . . . . > 600 °C . CHECKED
BUS TRANS. . . . .AUTO . CHECKED
APU BUS LEFT . . . . .ON . CHECKED
APU BUS RIGHT. . . . .ON . CHECKED
NAVIGATION TRANSFER. . .NORMAL . UNCHECKED
Display Switches. .AUTO/NORMAL . UNCHECKED
AFT-1 Fuel Pump . . . . .ON . UNCHECKED
FWD-1 Fuel Pump . . . . .ON . UNCHECKED
AFT-2 Fuel Pump . . . . .ON . UNCHECKED
FWD-2 Fuel Pump . . . . .ON . UNCHECKED
CTR-1 Fuel Pump . . . . .ON . UNCHECKED
CTR-2 Fuel Pump . . . . .ON . UNCHECKED
CAB / UTIL. . . . .ON . UNCHECKED
IFE / Pass Seat . . . . .ON . UNCHECKED
Emergency Exit. . . . .ARMED . UNCHECKED
No Smoking. . . . .SET . UNCHECKED

Autocheck OFF
    
```

Autocheck Mode is OFF, Font colour white



Menu by pressing **ESC** Key



## Settings

Here you are able to set very important options they are needed for YOUR Cockpit setup.

### Electronic-Checklist.ini file

```
[Electronic-Checklist]
{CODE}
xxxxxxxx

-----
Size-X      = 366
Size-Y      = 260
Position-X  = 1037
Position-Y  = 178
Font Size   = 8
A/C System  = 737

[Options]
Offset Hide = Yes
TSR AutoBrk = No
NO FSUIPC   = No
              // FSUIPC is not registered or pmSystems is not used
              // Is set to Yes if a unregistered version of FSUIPC is running
AutoCrs OFF = No // Switch Auto Cursor Function, one Down, to OFF
Font BOLD   = Yes // Sets the Font to BOLD
Font WHITE  = No // Sets the Font to WHITE instead of GREEN
# 6         = No // Future setting
# 7         = No // Future setting

[System Exceptions]
NO Oxygen Switch = No
NO IRS Selectors AFT = No
NO PWR/OVHT Test = No
NO FS-GEN-BUS     = No
NO CTR-1/2 PumpCheck = Yes
```

### A/C System = 737

- **737** is used for the internal Checklist for **B737**.
- Any other is used for your own created Checklist, e.g. **DC10**. In this case the name of your own Checklist file would be **DC10.ini**

### Options

- **Offset Hide**, sets the program to Visible / Hide function by using the **Offset 6DB3, Bit3 only**
- **TSR AutoBrk**, sets the program to use the **Offset 6DB1, 1 Byte length** instead of the FS Offset
- **NO FSUIPC**, disables the use of FSUIPC and sets the program to **Manual Check** mode for all checklists

### System Exceptions

- **NO Oxygen Switch**, there is NO Oxygen switch in your After Overhead panel connected so it is to check manually
- **NO IRS Selectors**, there are NO IRS Selectors in your After Overhead panel connected so it is to check manually

**If there are Customer needs, more can be included !**



## Program Control



The **Control Panel** can be placed somewhere on a **different PC** in your Network than the **Electronic Checklist** is installed to control it as well by mouse, FSUIPC / WideFS connection is needed.

In **Electronic-Checklist.ini** file you need to set the following Option to **YES**.

```
[Options]
Offset Hide = Yes
```

## Key Control

The **used Keys** to control the program on that PC where it is installed and the program has focus, are as follows.

- **Cursor UP / DOWN**, to go up and down in the menus
- **ENTER**
  - to select the Checklist or on “←” symbol to go to previous menu
  - to **CHECK** manual selection in the Checklist
  - to select in **CLEAR CHECKLIST** the Checklist (s) as deleted (cleared to UNCHECKED / TODO)
- **SCROLL / LOCK**, to HIDE / VISIBLE the Electronic Checklist on the screen
- **“ESC” Key**, to get into Windowed mode for move and resizing the panel. By pressing again “ESC” Key the program switches back to normal screen
- **CTRL + “Q” Key**, to close the program

## Mouse Control

By using the mouse to control the program just click on the functions you want to.

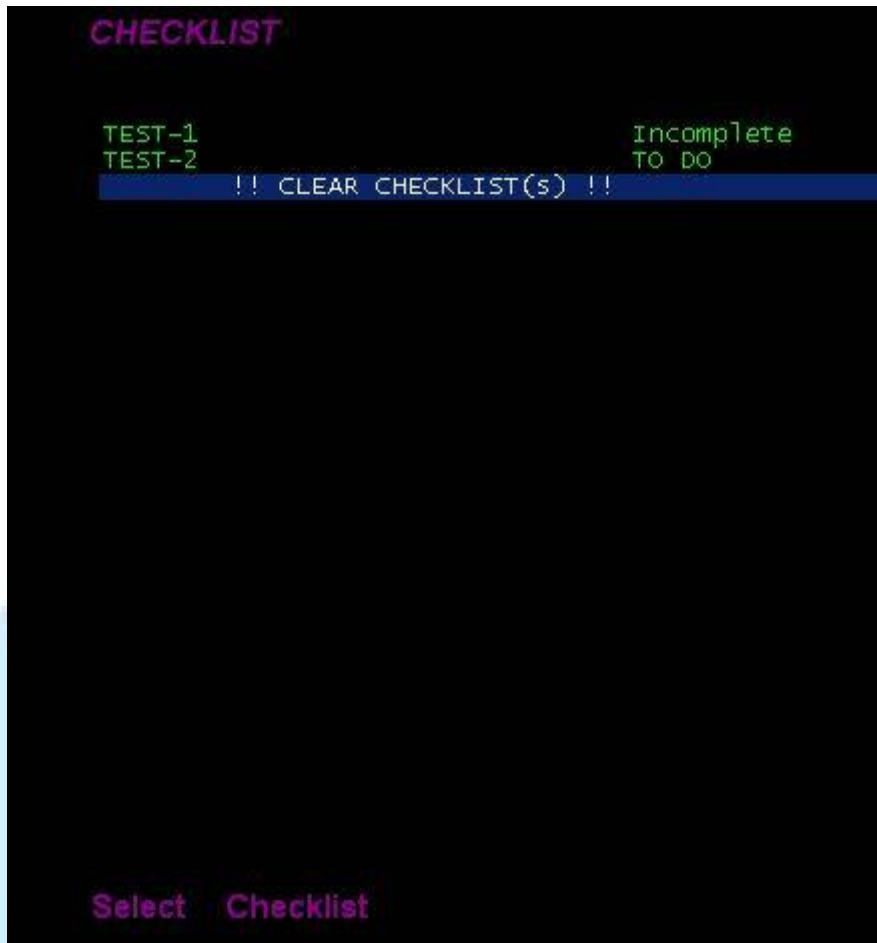
## Offset Control

Here are the **used Offsets** to control the program by hardware or direct from the FS-PC with FSUIPC Key or Button (e.g. Joystick Buttons) programming.

- **Cursor UP / DOWN** → **Offset 6DB3 Bit0 Cursor UP / Bit1 Cursor DN**
- **ENTER** → **Offset 6DB3 Bit2 Cursor ENTER**
  - to select the Checklist or on “←” symbol to go to previous menu
  - to **CHECK** manual selection in the Checklist
  - to select in **CLEAR CHECKLIST** the Checklist (s) as deleted (cleared to UNCHECKED / TODO)
- **SCROLL / LOCK**, → **Offset 6DB3, Bit3 = Checklist Visible / Hide**
  - to HIDE / VISIBLE the Electronic Checklist on the screen
- **“ESC” Key**, to get into Windowed mode for move and resizing the panel. By pressing again “ESC” Key the program switches back to normal screen
- **CTRL + “Q” Key**, to close the program

## User Defined Checklists

This is an example of two user defined Checklists, TEST-1 and TEST-2.



To create your own Checklist you need to **follow exactly this regulate!!**  
 You will find a base example file, **User100.ini**, in the main folder. The File name has to be changed in the Electronic-Checklist.ini to your own created file name e.g.

**A/C System = DC10**

In this case the name of your own Checklist file would be **DC10.ini**

1. Line = number of checklist items (subfolders), **here we use 3** (TEST-1, TEST-2 and TEST-3). Possible value is 25, so there are 25 Checklists to define if needed.
2. Line = number of included lines for the first Checklist, this is needed for each Checklist! **Here we use 5** because our first Checklist has 5 check items.
3. Line = number of included lines for the second Checklist, see above!
4. Line = number of included lines for the third Checklist, see point above 2.!

This lines 2. – 4. You have to do for all Checklists you want to define, e.g. you want define 5 Checklists with 4, 8, 20, 12 and 20 Check items, so you need to write the following in this first part

- 5** ← defines 5 Checklists
- 4** ← defines 4 Checklist items for the first Checklist
- 8** ← defines 8 Checklist items for the second Checklist
- 20** ← defines 20 Checklist items for the third Checklist
- 12** ← defines 12 Checklist items for the fourth Checklist
- 20** ← defines 20 Checklist items for the fifth Checklist

Then it has to follow a **blank line**

Now you write the **Headline**, name of the Checklist (here **TEST-1**)

Then the above defined **4** Checklist items have to follow.

This part has to be done for each Checklist, ever starts with a **blank line** (space holder).

**VERY IMPORTANT** is that you use the style of **32 letters** for each line (**Headline and Check items**), if not the Checklist will look a **bit chaotic**.

**So just fill ever shorter lines with space or dots like below, that's why I changed the back colour to display the writing structure.**

**3**  
**5**  
**14**  
**3**

```

TEST-1
Speedbrake . . . ARMED & GREEN .
Gear . . . . . DOWN & 3 GREEN .
Fl aps. . . . . SET & GREEN .
NAV Di spl ay. . . . . SET
Course Arrow . . . AS REQUI RED .
    
```

```

TEST-2
Anti -Ice . . . . . AS REQUI RED .
Trim Air Swi tch. . . . . OFF .
Press. . . . . AS REQUI RED .
ENG-1 Starter. . . . . OFF .
ENG-2 Starter. . . . . OFF .
APU. . . . . AS REQUI RED .
Exteri or Li ghts. . AS REQUI RED .
Autobrake. . . . . OFF .
Speedbrake . . . . DOWN DETENT .
Fl aps. . . . . UP .
Radar. . . . . OFF .
Transponder. . . . . OFF .
Landi g Li ghts. . . . . OFF .
Taxi Li ghts. . . . . ON .
    
```

```

TEST-3
Anti -Ice . . . . . OFF .
Trim Air Swi tch. . . . . ON .
Press. . . . . OFF .
    
```



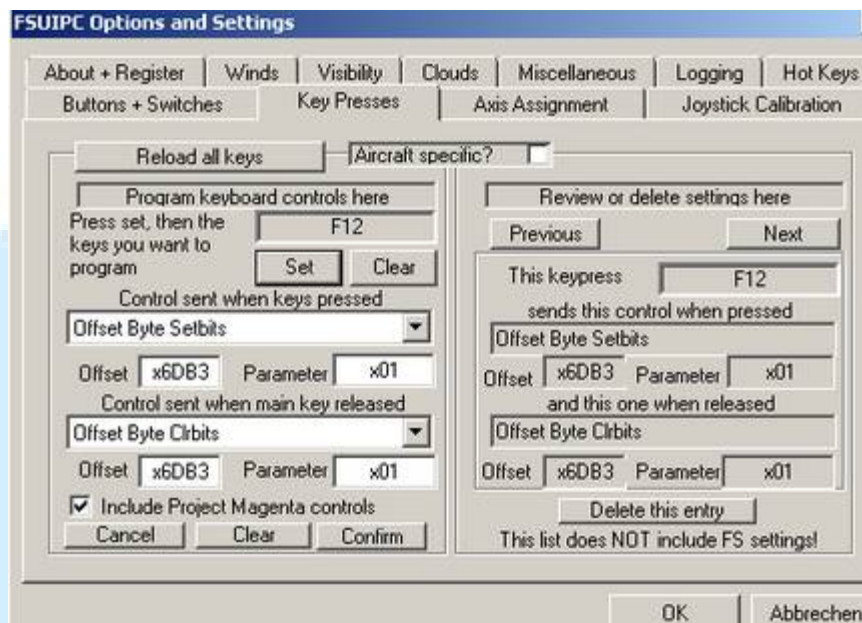
## Manual Changes in FSUIPC Module

4) For Key Control on FS-PC to control the program over the Network

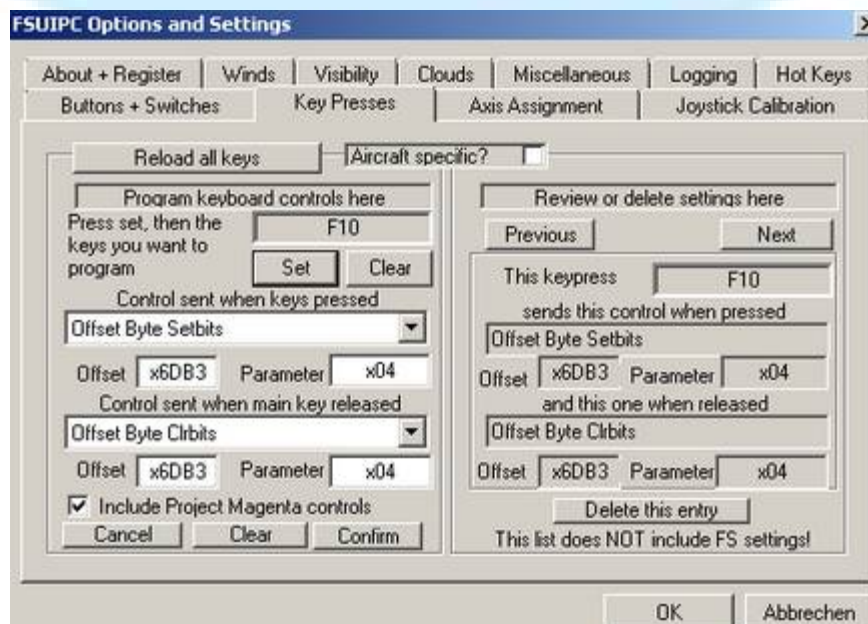
5) For Button Control with Joystick to control the program over the Network, just use instead the “Buttons + Switches” section for set up.

### Using the Offset 6DB3, 1 Byte length

- Cursor Up = Bit0 (Parameter x01)
- Cursor Down = Bit1 (Parameter x02)
- Enter = Bit2 (Parameter x04)
- Display Hide/Visible = Bit3 (Parameter x08), but needs to be **Togglebits – without** “Control sent when main Key released” definition !!



Setting in FSUIPC for **Cursor UP, Bit0** ( $2^0 = 1$ )



Setting in FSUIPC for **ENTER, Bit2** ( $2^2 = 4$ )



# TSR B737 SwitchSound



The **B737 SwitchSound** lets you hear on each switch state change on the B737 Overhead Panel a switch sound.

**This software is for those they use e.g. a Touch Screen for the overhead panel and need to hear that a switch has been really touched.**

The program starts minimized and connects to WideClient or FSUIPC direct. When pmSystems (**Project Magenta**) is running it recognized each switch state change and plays a sound.

There are 4 different sound defined you can change in its ini file.

### **[TSR B737 SwitchSound]**

**Sound file Switch Normal =switch\_large**

**Sound file Switch Center =switch\_large**

**Sound file Switch Rotary =switch\_rotary**

**Sound file Switch Button =switch\_small**

The attached sound files are taken from FS9 (Microsoft ® Flight Simulator 2004) as examples and are **not** part of the software.

To change the sound files just write the new name (without ".wav") in the corresponding line.

**Normal** = there are normal switches with ON / OFF position defined

**Center** = there are switches with a center position defined

**Rotary** = there are rotary switches like the engine starter switch defined

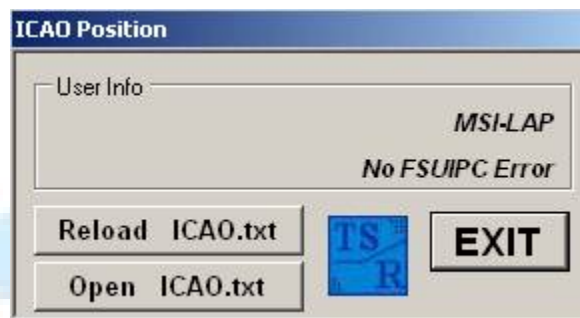
**Button** = there are momentary button switches like Groundcall defined



## ICAO Position

It is this one is required or contained around a program addition as of Boeing 737-NG version **7472.86.225.50**.

Far more than 26,000 airport positions have been saved internally with corresponding ICAO codes for each Flight Simulator, FSX and FS2004!



With this additional program, what will be opened and closed by **TSR AutoBrake** program automatically you can for your needed airports define for its corresponding landing directions RWY conditions.

Conditions means here that the braking acceleration counted in **TSR AutoBrake** will be in addition **increased** or **decreased** up to **40%**.

There can be e.g. RWY's with slope or downward slope (like Lukla) or just good or bad surface simulated, they are actually not available in FS.

After opening the **ICAO.txt** file by clicking on Open ICAO.txt by following the exact syntax values are inserted or changed.

**[ICAO],[direction],[factor]**

**factor 00/10=norm, 01-09=bad/sloped negative, 11-20=good/sloped**

**ICAO = the ICAO of airports, e.g. VNLK for Lukla. *For installed Lukla Scenery from Aerosoft use also the default ICAO VNLK.***

**Direction = landing direction**, for Lukla e.g. for runway 06 we write 06 for 60 deg. Or for landing direction 180 deg the value 18 is written.

**Factor = slope / downward slope / good surface / bad surface**, for Lukla e.g. for landing direction 06 what is a extreme slope we defined the value 15.

Applies to **Factor**:

The value of 10 or 00 is the normal value what is NOT to define because it is used automatic when nothing is defined.

Values of 01 to 09 define a downward slope or a bad surface that prolong the braking distance.

01 is staying for the worst value.



Values of 11 to 20 define a slope or a good surface that shorten the braking distance.

20 is staying for the best value.

### Example Lukla – VNLK:

**VNLK,06,15**

**VNLK,24,04**

In this case in the base file we used for landing direction 06 (60 deg) the value of 15 for factor to define a slope and for direction 24 (240 deg) the value 04 to define a downward slope.

The direction 24 (240 deg) is in this case of **Lukla** not a landing direction but it will be as well used for e.g. a takeoff abort to calculate the braking distance, as long the direction is defined but not needed to define.

For the definition the **EXACT SYNTAX** is needed to use and all directions for a airport with the same ICAO has to be in the same block.

There is no need for an alphabetical or direction order, so you can write e.g.:

**EDLW,24,12**

**EDLW,06,12**

**EDDL,05,12**

**EDDL,23,08**

**EDDL,26,08**

**EDDS,07,11**

**EDDS,25,11**

After changes have been done and the file has been saved you can reload the file to update **while FS and TSR AutoBrake** is running just by clicking on **Reload ICAO.txt** button.

### Note

On Windows XP 32 and Vista 32 systems anything works well and loads in some seconds.

On a Vista 64 test system with AMD processor the ICAO Position program needs up to 5 minutes to read and organize the over 26,000 airport positions. May be this behavior depends on a unfavorable combination of hardware and Vista 64 on this test PC, should however mentioned here.



## Reserved TSR Offsets - 6DB0 – 6DCF / 7930 – 7A0F

Any settings are values unless they are named as Bit.

### INPUT – Offsets

**Offset = 0x050A, 2 Byte length – Project Magenta Offset (needed to be used in ON / OFF function)**

**Bit1** = A/P Disconnect

**Bit2** = A/T Disconnect

**Offset = 0x04F2, 2 Byte length – Project Magenta Offset**

**16** = A/T Disconnect

**Offset = 2F80, 1 Byte length - Autobrake-Switch, original Autobrake switch (FS2004 ONLY)**

**Boeing ONLY**

**0** = RTO

**1** = OFF

**2** = AB1

**3** = AB2

**4** = AB3

**5** = MAX

**Offset=5781, 1 Byte length - Overhead Button (Bleed Panel)**

**Bit3** = OvhtTest

**Bit4** = TripReset

**Offset=5782, 1 Byte length - Control Inputs for Failures, e.g. by pmlnstructor**

**Bit0** = PitotLFail

**Bit1** = PitotRFail

**Bit2** = Bleed1Fail

**Bit3** = Bleed2Fail

**Bit4** = EngBleed1Fail

**Bit5** = EngBleed2Fail

**Bit6** = IceWing1Fail

**Bit7** = IceWing2Fail

**Offset=5784, 1 Byte length - Overhead Button**

**Bit0** = FlapsTest

**Offset=5786, 1 Byte length – Aft Oh, Offsets they bring SixPack-IRS to lit**

**Bit0** = IRSDCL

**Bit1** = IRSDCR

**Bit2** = IRSFaultL

**Bit3** = IRSFaultR

**Bit4** = IRSDcFailL

**Bit5** = IRSDcFailR

**Offset=6DB0, 1 Byte length - Different Inputs**

**Bit0** = left Pedal-Input, Pedal depressed

**Bit1** = right Pedal-Input, Pedal depressed

**Bit2** = ParkBrake Lever

**Bit3** = Spoiler ARM (Airbus AutoBrake Pro)

**Bit4** = Antiskid Switch (Airbus AutoBrake Pro)

**Bit5** = CWS A

**Bit6** = CWS B

**Offset = 6DB1, 1 Byte length**

- 0 = RTO
- 1 = OFF
- 2 = AB1
- 3 = AB2
- 4 = AB3
- 5 = MAX

**Airbus**

- Bit0 = LOW
- Bit1 = MED
- Bit2 = MAX

**Offset=6DB2, 1 Byte length**

**RWY Contamination Value**, this is for use with pmlnstructor to set manually the RWY conditions

- 0 = DRY
- 1 = WET
- 2 = WET 6mm
- 3 = SLUSH 6mm
- 4 = SLUSH 13mm
- 5 = SNOW 5cm
- 6 = ICE

**Offset=6DB3, 1 Byte length - Electronic Checklist Controls**

- Bit0 = Cursor UP
- Bit1 = Cursor DOWN
- Bit2 = Cursor ENTER
- Bit3 = Hide

**Offset=6DB4, 1 Byte length - Different Buttons**

- Bit0 = TEST-1
- Bit1 = TEST-2
- Bit2 = AP-P/RST
- Bit3 = AT-P/RST
- Bit4 = FMC-P/RST
- Bit5 = Fire
- Bit6 = CAUTION
- Bit7 = Recall

**Offset = 6DB5, 1 Byte length (Airbus), 2 Byte length (Boeing 737NG)*****Flaps Lever Position*****Airbus**

- 0 = Pos 0
- 1 = Pos 1 / 1+F (controlled by internal logic)
- 2 = Pos 2
- 3 = Pos 3
- 4 = Pos FULL

**Boeing (1 Byte length)**

- 0 = Pos 0
- 1 = Pos 1
- 2 = Pos 2
- 3 = Pos 5
- 4 = Pos 10
- 5 = Pos 15
- 6 = Pos 25
- 7 = Pos 30
- 8 = Pos 40

**Or variable values for Axis value inputs (2 Byte length)**


**Offset = 6DB7, 1 Byte length - Indicator Inhibit**

**Bit0** = BELOW G/S  
**Bit1** = TO LOW FLAPS  
**Bit2** = TO LOW GEAR  
**Bit3** = TO LOW TERRAIN  
**Bit4** = GPWS Sys-Test (for sounds)

**Offset = 6DB8, 1 Byte length - Fuel Handle**

**Bit0** = Center Tank Leak  
**Bit1** = Left Main Tank Leak  
**Bit2** = Right Main Tank Leak  
**Bit3** = JetStarter1  
**Bit4** = Jetstarter2  
**Bit5** = Cutoff1  
**Bit6** = Cutoff2

**Offset = 6DB9, 1 Byte length - Lear Jet**

**Bit0** = Trim-UP  
**Bit1** = Trim-DN  
**Bit2** =  
**Bit3** =  
**Bit4** =  
**Bit5** =

**Offset = 6DBB, 2 Byte length - Failure control for Boeing 737-NG program**

**Bit0** = Engine-1 Fire  
**Bit1** = Engine-2 Fire  
**Bit2** = EEC-1 Failure  
**Bit3** = EEC-2 Failure  
**Bit4** = Nose-Gear Failure  
**Bit5** =  
**Bit6** =  
**Bit7** =  
**Bit8** =  
**Bit9** =  
**Bit10** =  
**Bit11** =  
**Bit12** =  
**Bit13** =  
**Bit14** =  
**Bit15** =

**Offset=6DBD, 1 Byte length - A320 Pager, write values**

**0** = ENG  
**1** = BLEED  
**2** = PRESS  
**3** = ELEC/AC  
**4** = ELEC/DC  
**5** = HYD  
**6** = APU  
**7** = COND  
**8** = DOOR  
**9** = WHEELS  
**10** = F/CTL  
**11** = FUEL  
**12** = C/B  
**13** = ALL

**Offset=7932, 2 Byte length**



**Offset=0x7934, 2 Byte length**

**Offset = 0x7945 - 794A, each 1 Byte length – Dim control, value 1 - 100**

**0x7945 = Cpt. PFD**

**0x7946 = Cpt. ND**

**0x7947 = Up EICAS**

**0x7948 = Lo EICAS**

**0x7949 = F/O PFD**

**0x794A = F/O ND**

**Offset=0x794B, 1 Byte length, int CS**

**Offset=0x794B, 1 Byte length, int CS**

**Offset=0x794E, 2 Byte length**

**Speedbrake Lever in from Throttle**

**Offset=0x7950, 1 Byte length**

**Starter Switch B737 Original**

**Offset=0x7951, 2 Byte length**

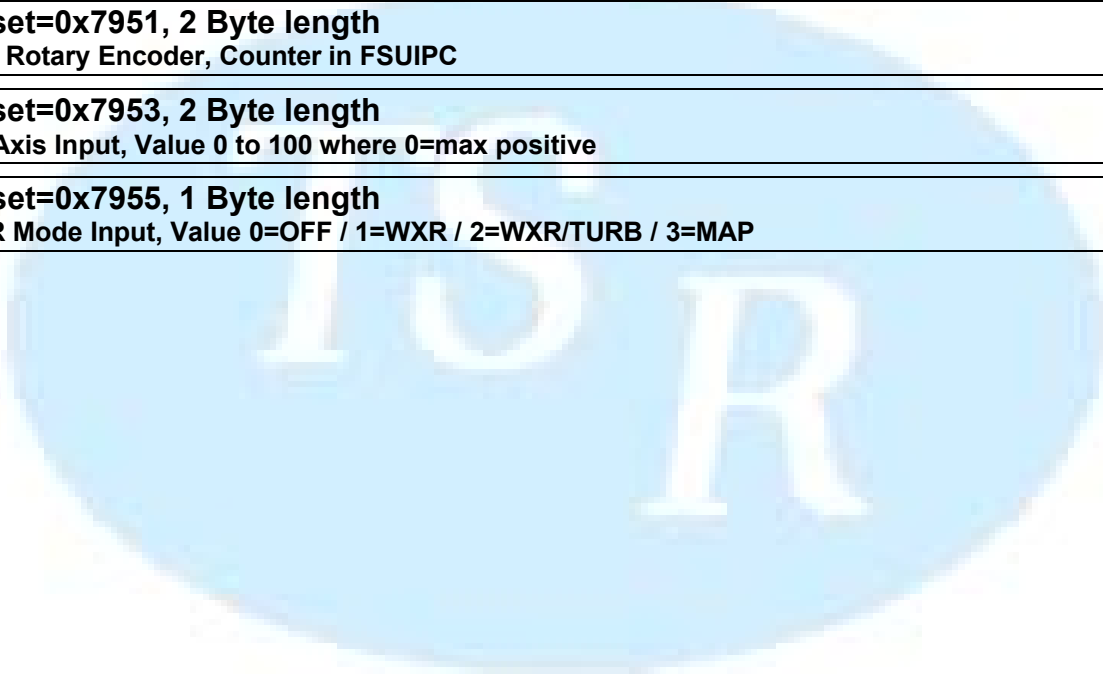
**ECP Rotary Encoder, Counter in FSUIPC**

**Offset=0x7953, 2 Byte length**

**Tilt Axis Input, Value 0 to 100 where 0=max positive**

**Offset=0x7955, 1 Byte length**

**WXR Mode Input, Value 0=OFF / 1=WXR / 2=WXR/TURB / 3=MAP**





## OUTPUT – Offsets

**Offset=5616, 1 Byte length - Steering Sound (scrubbing effect)**  
Bit3 = Steering with high angle

**Offset=5780, 1 Byte length - Overhead Indications (Bleed Panel)**  
Bit0 = Wing1FailSet  
Bit1 = Wing2FailSet  
Bit2 = Zonetemp1  
Bit3 = Zonetemp2  
Bit4 = Zonetemp3  
Bit5 = Pack1Fail  
Bit6 = Pack2Fail

**Offset=5781, 1 Byte length - Overhead Indications (Bleed Panel)**  
Bit0 = LBleedFail  
Bit1 = RBleedFail

**Offset=579E, 2 Byte length - Brake-Accu**  
0 – 520 reflects 0 – 3000Psi

**Offset=6DC0, 1 Byte length - Autobrake Indication**  
Bit0 = Autobrake DISARM  
Bit1 = Antiskid Light  
Bit2 = Autobrake - **LOW** indication  
Bit3 = Autobrake - **MED** indication  
Bit4 = Autobrake - **MAX** indication  
Bit5 = DECEL - **LOW** indication  
Bit6 = DECEL - **MED** indication  
Bit7 = DECEL - **MAX** indication

**Offset=6DC1, 1 Byte length - Brake Sound Loudness or ON / OFF**  
0 = OFF, when “Sound Output 0-100” is NOT selected  
1 = ON, when “Sound Output 0-100” is NOT selected  
0 – 100, where 0 = OFF and 100 = max volume

**Offset=6DC2, 2 Byte length - Landing Distance**  
Value reflects in ft

**Offset=6DC4, 2 Byte length - SixPack Indication**  
Bit0 = FIRE  
Bit1 = CAUTION  
Bit2 = FLT CONT  
Bit3 = ELEC  
Bit4 = IRS  
Bit5 = APU  
Bit6 = ENG  
Bit7 = OVERHEAT  
Bit8 = ANTI ICE  
Bit9 = AIR COND  
Bit10 = HYD  
Bit11 = FUEL  
Bit12 = OVERHEAD  
Bit13 = DOORS

**Offset=6DC6, 2 Byte length - Brake-Press Left, Airbus only**  
0 – 520 reflects 0 – 3000Psi

**Offset=6DC8, 2 Byte length - Brake-Press Right, Airbus only**  
0 – 520 reflects 0 – 3000Psi

**Offset=6DCA, 1 Byte length - Indicators**

**Bit0** = AP // orange  
**Bit1** = AT // orange  
**Bit2** = FMC // orange  
**Bit3** = AP // red  
**Bit4** = AT // red  
**Bit5** = Page All (Airbus)

**Offset=6DCB, 2 Byte length****Brake Press Display**

Reflects to the actual Brake Press in psi

**Offset=6DCD, 1 Byte length - Weather Conditions**, gives the value (0 – 6) of the internal used weather condition

**0** = DRY  
**1** = WET  
**2** = WET 6mm  
**3** = SLUSH 6mm  
**4** = SLUSH 13mm  
**5** = SNOW 5cm  
**6** = ICE

**Offset=6DCE, 1 Byte length - Electronic Checklist / Airbus Stick Logic**

**Bit0** = Hide Status, Hide = ON / Visible = OFF  
**Bit1** = Priority → - RED  
**Bit2** = CPT - GREEN  
**Bit3** = Priority ← - RED  
**Bit4** = F/O - GREEN  
**Bit5** = Sound Left  
**Bit6** = Sound Right

**Offset=6DCF, 1 Byte length - Indicators**

**Bit0** = SPOILER ARMED  
**Bit1** = SPOILER EXTENDED  
**Bit2** = SPOILER DO NOT ARM  
**Bit3** = BELOW G/S  
**Bit4** = FLAPS LOAD RELIEF  
**Bit5** = STAB OUT OF TRIM  
**Bit6** = ParkBrake Solenoid  
**Bit7** = ParkBrake Lamp

**Offset=7930, 1 Byte length - TSR GPWS Sound control**

**Bit0** = Takeoff Warn  
**Bit1** = Too Low Terrain  
**Bit2** = Too Low Gear  
**Bit3** = Too Low Flaps  
**Bit4** = Glide Slope  
**Bit5** = Windshear (only for Sys-Test)  
**Bit6** = Pullup (only for Sys-Test)  
**Bit7** = Tail Strike

**Offset=7931, 1 Byte length - TSR CWS A/B active**

**Bit0** = CWS A  
**Bit1** = CWS B

**Offset=7934, 2 Byte length –**

**Bit0** = StickShaker

**Offset=7940, 2 Byte length - Flaps Gauge when TSR Flaps Control is used**

Reflects to the actual Flaps position, corrected by LE Flaps/Slats setting for Autoslats

**Offset=7942, 1 Byte length - TSR LE Flaps/Slats Indication****Bit0** = LE SLATS Transit**Bit1** = LE SLATS Extended**Bit2** = LE SLATS Full Extended**Bit3** = LE FLAPS Transit**Bit4** = LE FLAPS Extended**Offset=7943, 1 Byte length - Outputs for A/T added (PM's MCP), to connect/disconnect e.g. Servos or Motors by using a Relais card****Bit0** = Both Engines, using one Output to control both e.g. Servos**Bit1** = Left Engine, separate control instead of both together**Bit2** = Right Engine, separate control instead of both together**Bit3** = Trim Motor DN**Bit4** = Trim Motor UP



## pmlnstructor Example Setup

To configure your **Project Magenta pmlnstructor** you need to change its e.g. Controls.txt file in **Instructor's Configs** subfolder. You can just add this example below the default section. The added part with it functions is then available under **CONTROLS** when you go through its different pages.

The pmlnstructor page looks then like the following.

### Control WXR and RWY Condition

WXR DRY	WXR LIGHT WET	WXR WET	WXR LIGHT SLUSH	WXR SLUSH	WXR SNOW	WXR ICE
RWY DRY	RWY LIGHT WET	RWY WET	RWY LIGHT SLUSH	RWY SLUSH	RWY SNOW	RWY ICE
AB DISARM	ANTI- SKID					
BRKPRES ####	LNDDIST ####					

page, WXR AND RWY CONDITION

```

WXR/DRY, 6DCD, 1, 0
WXR/WET, 6DCD, 1, 1
WXR/WET/6MM, 6DCD, 1, 2
WXR/SLUSH/6MM, 6DCD, 1, 3
WXR/SLUSH/13MM, 6DCD, 1, 4
WXR/SNOW/5CM, 6DCD, 1, 5
WXR/ICE, 6DCD, 1, 6
return
RWY/DRY, 6DB2, 1, 0
RWY/WET, 6DB2, 1, 1
RWY/WET/6MM, 6DB2, 1, 2
RWY/SLUSH/6MM, 6DB2, 1, 3
RWY/SLUSH/13MM, 6DB2, 1, 4
RWY/SNOW/5CM, 6DB2, 1, 5
RWY/ICE, 6DB2, 1, 6
return
AB/DISARM,6DC0, .3, 1
ANTI-/SKID,6DC0, .4, 1
return
BRKPRES/####, 6DCB, 2
LNDDIST/####, 6DC2, 2
    
```

The lines are as well available as an attached file, **controls-sample2.txt** in the programs main folder.



**Bleed Failure**

**LEFT  
BLEED**

**RIGHT  
BLEED**

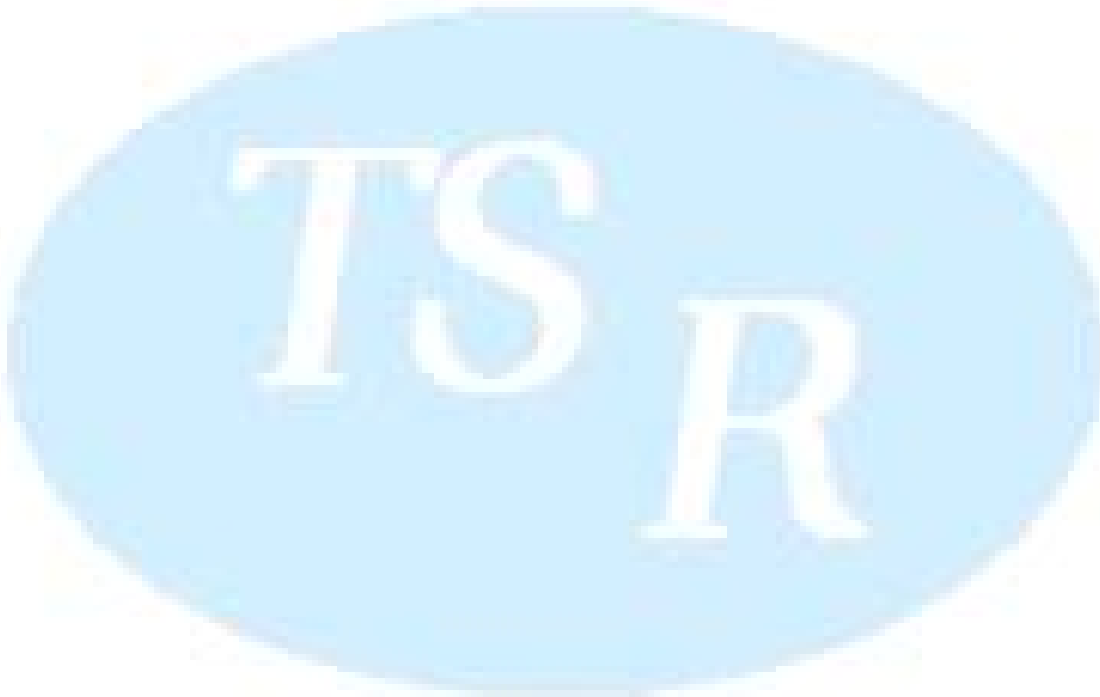
**ENG-1  
BLEED**

**ENG-2  
BLEED**

**LEFT  
WING**

**RIGHT  
WING**

page, BLEED FAILURE  
LEFT/BLEED, 5782, .2, 1, 0  
RIGHT/BLEED, 5782, .3, 1, 0  
ENG-1/BLEED, 5782, .4, 1, 0  
ENG-2/BLEED, 5782, .5, 1, 0  
LEFT/WING, 5782, .6, 1, 0  
RIGHT/WING, 5782, .7, 1, 0





## pmSounds Example Setup

To setup the Sound-Offsets from TSR Boeing 737-NG in pmSounds **Soundlist.txt** just do the following.

- find and open the **soundlist.txt** file in pmSounds main folder
- add this lines

***nsteeringsound, 5616, .3, 1, on  
nbrakesound, 6DC1, .0, 1, on  
ntowarn1, 7930, .0, 1, on  
ntoolowterrain1, 7930, .1, 1, on  
ntoolowgear1, 7930, .2, 1, on  
ntoolowflaps1, 7930, .3, 1, on  
nglideslope1, 7930, .4, 1, on  
nwindshear1, 7930, .5, 1, on  
npullup1, 7930, .6, 1, on***

- go to **Sounds** subfolder in pmSounds main folder
- search and change the following existing sound files names (.wav)

<b><u>FROM</u></b>		<b><u>TO</u></b>
<b><i>ntowarn</i></b>	→	<b><i>ntowarn1</i></b>
<b><i>ntoolowgear</i></b>	→	<b><i>ntoolowgear1</i></b>
<b><i>ntoolowflaps</i></b>	→	<b><i>ntoolowflaps1</i></b>
<b><i>ntoolowterrain</i></b>	→	<b><i>ntoolowterrain1</i></b>
<b><i>nglideslope</i></b>	→	<b><i>nglideslope1</i></b>

- Copy **nwindshear.wav** and paste in the same folder (your drive\pmSounds\sounds\)
- Rename this file to **nwindshear1.wav**
- Copy **npullup.wav** and paste in the same folder (your drive\pmSounds\sounds\)
- Rename this file to **npullup1.wav**

For **nbrakesound** and **nsteeringsound** you need to add a sound file (wav) to sounds folder because this sound files doesn't exists.



## pmSystems changes

This is for AutoBrake Pro ONLY, **NOT needed for TSR Boeing 737-NG!**  
Just add this Offsets to sysvar.txt of pmSystems.

### 6DB1 1 TsrAb

and this lines to Logic section (somewhere below [Logics])

```
DisableGCMessages = 1
setmessage '4 Less BRAKEACCU' brakeaccu < 200
setmessage '4 Auto Brake RTO' (TsrAb = 0)
setmessage '4 Auto Brake OFF' (TsrAb = 1)
setmessage '4 Auto Brake 1' (TsrAb = 2)
setmessage '4 Auto Brake 2' (TsrAb = 3)
setmessage '4 Auto Brake 3' (TsrAb = 4)
setmessage '4 Auto Brake MAX' (TsrAb = 5)
```

But DONT change the message text to "Autobrake" instead of the "Auto Brake"

### Bleed / Pack System

If Bleed / Pack System is enabled you need to remove the following lines from your logic file, e.g. pmsys737.lgc

**!! BUT DON'T REMOVE THIS BOTH LINES !!**

```
off = 0
on = 1
```

This lines needs to be removed.

```
if (apumode = 3) and apubleed
  if (fsStarter1 = 1) or (fsStarter2 = 1)
    bl 5 = 30
  else
    bl 5 = 20
  endif
else
  bl 5 = 0
endif

if eng1bleed and (fs1n1 > 12)
  bl 1 = 26
else
  bl 1 = bl 5
endif

if eng2bleed and (fs2n1 > 12)
  bl 2 = 26
else
  bl 2 = 0
endif

if isolationvalve > 0
  if (bl 1 > bl 2) or (bl 1 = bl 2)
    b1r = bl 1
  endif
  if (bl 2 > bl 1) or (bl 2 = bl 1)
    b1r = bl 2
  endif
  b2r = b1r
else
```



```

        b2r = bl 2
        b1r = bl 1
    endi f

    i f (FlapsPosL > 0) or FsonGround
        Ramval ve = 1
    el se
        Ramval ve = 0
    endi f

    i f b1r
        i f pack1
            b1r = b1r - (2 * pack1)
            ramai r = Ramval ve [1]
        el se
            ramai r = 0
        endi f
    el se
        ramai r = 0
    endi f

    i f b2r
        i f pack2
            b2r = b2r - (2 * pack2)
            ramai rr = Ramval ve [1]
        el se
            ramai rr = 0
        endi f
    el se
        ramai rr = 0
    endi f

    i f batt1 = 0
        b1r =0
        b2r =0
    endi f

    dual bleed = (apubled and eng1bled)
    i f dual bleed = 0
        dual bleed = (isolati onval ve and (apubled and eng2bled))
    endi f

    i f pwr
        bleedpsi 1 = counter b1r 15
        bleedpsi 2 = counter b2r 15
        bleed1ref = b1r
        bleed2ref = b2r
    endi f

```

## GC - Dimm / Bus-Click

If BusClick is enabled you need to remove the following lines from your logic file, e.g. **pmsys737.lgc**

```

    i f not pwr
        pmCaptPFDI nop = 1
        pmCaptNDI nop = 1 [. 5]
        pmFONDI nop = 1 [. 7]
        pmFOPFDI nop = 1 [. 3]
        pmSD11 nop=1 [. 7]
        pmSD21 nop=1 [. 7]
        pmCDUI nop=1
        pmRCDUI nop=1
        pmStandByI nop=1
        pmAPI nop = 1
    el se
        pmCaptPFDI nop = 0
        pmCaptNDI nop = 0
        pmFONDI nop = 0
        pmFOPFDI nop = 0
        pmSD11 nop=0
        pmSD21 nop=0
        pmCDUI nop=0 [1]
        pmRCDUI nop=0 [3]
        pmStandByI nop=0 [2]
        pmAPI nop = 0
    endi f

```