



# **PCL** **Pilot controlled lights**

Version 1.2

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# Austrian X-Plane Design Group

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## 1. Description

Pilot-controlled lighting (PCL), also known as aircraft radio control of aerodrome lighting (ARCAL) or pilot-activated lighting (PAL), is a system which allows aircraft pilots to control the lighting of an airport or airfield's approach lights, edge lights, and taxiways via radio. At some airfields, the aerodrome beacon may also be ARCAL controlled. ARCAL is most common at non-towered or little-used airfields where it is neither economical to light the runways all night, nor to provide staff to turn the runway lighting on and off. It enables pilots to control the lighting only when required, saving electricity and reducing light pollution.

To activate the lights, the pilot clicks the radio transmit switch on the ARCAL frequency a certain number of times within a specified number of seconds. There are two type of ARCAL systems, type J and type K.

Type J systems are activated by keying the microphone five times within 5 seconds, while type K is initially activated by clicking seven times within 5 seconds. Once activated, the intensity of type K systems may then be turned to low, medium, or high intensity settings by keying the microphone three, five, or seven times within 5 seconds, respectively. If runway identification lights are also controlled by type K ARCAL, they may be turned off by keying the microphone three times.[1]

When either type of system is activated, a 15-minute countdown starts, after which the lights turn off. While the lights are on, whenever a lighting command is issued, whether it changes the lighting intensity or not, the fifteen minute countdown is reset. At some airfields, the lights may flash once to warn pilots that the lights are about to go off, before turning off two minutes later.

When using ARCAL, it is strongly recommended that aircraft on final approach to the airfield issue a fresh lighting command, even if the lights are already on (especially if the lights were activated by another aircraft). This is so that the lighting does not turn off at a critical moment (such as when crossing the runway threshold).

(Source: Wikipedia)

This LUA plugin will allow switching on the lights at airports that are equipped with switchable lighting.

## 2. Installation

First install "FlyWithLUA": <http://forums.x-plane.org/index.php?app=downloads&showfile=17468>

If LUA works, just copy the script "PCL.lua" into the "Scripts" folder of LUA.

Start X-Plane and have fun :-)



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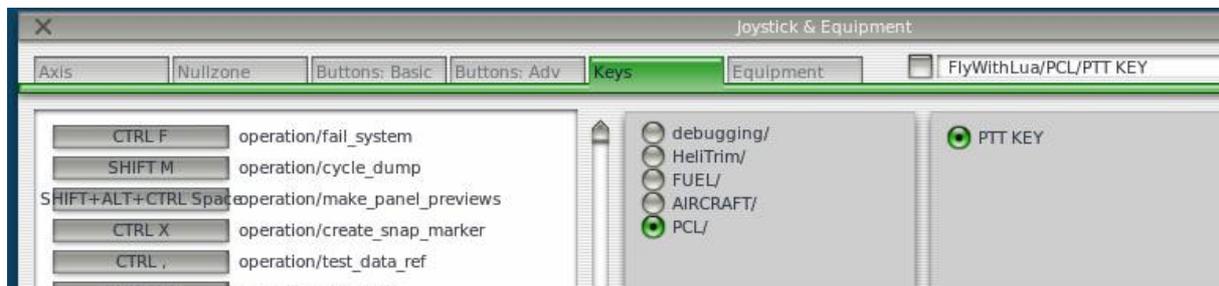
### 3. Functions

- Switches the frequency of the standby-ADF1 to 200 and back to the previously set value.

### 4. Operation (Pilots)

In the X-Plane-Menu "Setup / Joystick ...." assign a Joystick-Button (index tab "Buttons Adv") or a key (index tab "Keys") for the function

- "PTT KEY"



With the key defined here the lighting can be switched ON (Standby-ADF2 = 200).

To turn ON the lights press the key defined here 5 times within 5 seconds. The lighting is switched on for 15 minutes. I recommend to repeat this on the final approach to prevent automatic switch OFF the lighting just before touch down.

Note: The light can also be switched by manually setting the standby ADF2 to the value "200", even if the LUA plugin is not installed.



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## 5. Operation (Scenery-Designer)

The packet consists of:

- some objects (lights), only visible when Stby-ADF2 = 200
- some .str-files, for easier positioning the objects
- the LUA-Script, for switching ON the lights like in real life.

Place	Position	Color	Heading	up/inset	Filename .obj	Filename .str
APRON	side	blue	round	up	a_elevated_edge_twy_B	s_edge_twy_B
TWY	side	blue	round	up	a_elevated_edge_twy_B	s_edge_twy_B
TWY	center	green	directional	inset	a_inset_centerline_twy_GG	s_centerline_twy_GG
HOLD	side	yellow	round	up	a_elevated_edge_YY	
HOLD	cross	yellow	directional	inset	a_inset_hold_short_Y	s_hold_short_steady_Y
HOLD	cross	red/green/yell	directional	inset	a_inset_hold_twy_YY_RG	s_hold_short_twy_YY_RG
RWY	side	white	round	up	a_elevated_edge_WW	s_edge_rwy_el_W
RWY	centerline	white	directional	inset	a_inset_centerline_rwy_WW	s_centerline_rwy_in_W
RWY	centerline	red	directional	inset	a_inset_centerline_rwy_RW	s_centerline_rwy_in_RW
RWY	end	red/green	directional	inset	a_inset_rwy_thr_GR	s_end_rwy_in_RG
RWY	end	white	round	up	a_elevated_REIL_omni	

The table above indicates the objects, their use, and the location of the installation and the file name of the. Str files.

For lighting on the Taxiway you need the elements:

- a\_elevated\_edge\_twy\_B for the blue lights on the side. Positioning with "s\_edge\_twy\_B.str".
- a\_inset\_centerline\_twy\_GG for the green lights in the middle. Positioning with "s\_centerline\_twy\_GG.str".
- a\_inset\_hold\_short\_Y for the yellow inset lights at the holding. Positioning with "s\_hold\_short\_steady\_Y.str."
- a\_elevated\_edge\_YY.obj are the lights on the side at the hold

In the. str files in WED the "Spacing" (distance between the lights) must be set correct. With two-colored lights you have to examine if these are positioned correctly (if not, turn the line by 180°). Also the two-colored single objects must be positioned in the correct direction.

All objects are based on the original objects by Laminar Research.

For signalling your scenery is equipped with this object, use the "PCL\_Logo.png" on the manual of the scenery or on the download-site.

**Update 1.1:** new Hold-Line with yellow lights to the Runway and red (if lights are switched off) or green (if lights are switched off) to the Apron.

**Update 1.2:** Bugfix: faulty objects corrected



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### 6. Required Software:

X-Plane® Version 10.25+ oder 9.7  
FlyWithLUA (only for the LUA-Plugin)

### 7. Credits

LAMINAR RESEARCH® für X-Plane®  
X-Friese für "[FlyWithLUA](#)"

### 8. Betatester-Team

DanielMan, greuff, PAA196, PetJedi, grissley, davewing  
alle Mitglieder der AXDG.

### 9. License terms

This package is freeware and stays in the possession of the developer/s. Upon installation of the freeware the user accepts the terms of use. It is not allowed to upload the package or parts of it to other websites without the explicit permission in writing of the developer/s. Furthermore it is forbidden to use the package or parts of it on a commercial basis without the explicit permission in writing of the developer/s. Changes and modifications for the private use are allowed. But it is not allowed to share such changed or modified versions without the explicit written permission from the developer/s.

Apart from that the respective terms of copyright law are applicable.

The developer/s are not responsible for any malfunctions or possible failures of hard- or software in connection with this package. Under <http://forum.aerosoft.com/index.php?/forum/621-x-plane-10-freeware-airports-beitraege-und-diskussionen/> the developer/s are available for questions or remarks regarding this scenery but cannot give the guarantee that this scenery will work on all computer systems.

Have fun with the PCL-equipped objects!

*Gerhard, OE3GSU*

