

BpB (Better PushBack)

Installation

Uncompress BetterPushback_vxx.zip file in your Resources/plugins folder.

For Mac Users Only:

- Some actions may be needed about the security :
 - open the terminal and type
 - `cd <X-Plane folder>/Resources/plugins`
 - `xattr -dr com.apple.quarantine *`
 - it will allow in 1 command all plugins.
- Or use this utility: [Mac OS - CleanUp Quarantine Flags](#)

Requirements

The latest version of Xp11 or Xp12 (Windows, Mac/Intel/Arm, Linux).

Upgrade

From version 1.0.11 you can use [SkunkCrafts Updater Standalone client](#)

or

Remove the previous BetterPushBack folder from the Resources/plugins folder, proceed to the installation step.

if the previous version is below v1.0.4, do the followings steps:

- Delete the folder [X-Plane folder]\Output\caches\BetterPushbackAirports.cache
- Delete the file [X-Plane folder]\Output\caches\BetterPushback_routes.dat

THE MAGIC SQUARES





The magic squares are 3 shortcuts and 1 status located at the left side of the screen. They are displayed only with compatible aircrafts and when on the ground.

In the Preferences windows, you can:





- Hide them permanently (“Hide the magic squares” option)
- Change their positions by moving them up or down (“Magic squares position” setting)

Each magic square appears according the pushback phase

Setting “Always connect the tug first” is **disabled** (see FAQ about the “Always connect the tug first”)

	What does it do ?	When does it appear ?
	Start the pre-plan	The pushback is not in progress
	Connect tug first	The pushback is not in progress
	<ul style="list-style-type: none"> • Start the pushback (if no pushback is in progress) • Resume the pushback (“connect tug first” was previously triggered) 	<ul style="list-style-type: none"> • The pushback is not in progress • The tug is connected at the aircraft and waiting (“connect tug first” was previously triggered)
	By hovering the mouse on it, it will display the current status of the ongoing push-back	The pushback is in progress

Setting “Always connect the tug first” is **enabled** (see FAQ about the “Always connect the tug first”)

	What do it do ?	When does it appear ?
	Start the pre-plan	Not displayed
	Connect tug first	Not displayed
	<ul style="list-style-type: none"> • Start the pushback (if no pushback is in progress) • Resume the pushback 	<ul style="list-style-type: none"> • The pushback is not in progress • The tug is connected at the aircraft and waiting
	By hovering the mouse on it, it will display the current status of the ongoing push-back	The pushback is in progress

MANUAL PUSH

With Manual push, no need to pre-plan the pushback, you can control the trajectory of the tug by the use of commands bindable to any joystick buttons or any keyboard keys or the yoke/stick itself

Start the push

Use one of the 2 commands:

- `BetterPushback/manual_push_start`
- `BetterPushback/manual_push_start_no_yoke`

`BetterPushback/manual_push_start` will allow to control the tug with the yoke/stick, using this 3 directions left/right/forward.

- Yoke/stick turned to the left (or right) : tug turns left (or right)
- Yoke/stick pushed forward: tug accelerate (to change the direction use the `BetterPushback/manual_push_toggle` command

`BetterPushback/manual_push_start_no_yoke` , the yoke will not be used and be replaced by the following commands:

- `BetterPushback/manual_push_left`
- `BetterPushback/manual_push_right`
- `BetterPushback/manual_push_toggle`

Each call on `BetterPushback/manual_push_left` or `BetterPushback/manual_push_right` will make the tug turns more to the left (or right)

Each call on `BetterPushback/manual_push_toggle` will change the direction of the push (forward/backward). The command is not effective if the tug is currently moving.

Pause the push

Each call on `BetterPushback/manual_push_start` or `BetterPushback/manual_push_start_no_yoke` will pause/unpause the pushback.

Using the brakes or parking brakes will also pause the push.

Finishing the push

Just call `BetterPushback/stop`

View from the tug's cab

Just call `BetterPushback/cab_camera`

The camera position will adjust itself according the direction of the push (forward/backward)

FAQ

BpB makes x-plane crashes on a specific airport:

Make sure to install the last version (at least v1.0.7).

If already installed send the log.txt and mention the airport and the gate where the crash occurred

When asked to set the parking in order to disconnect the tug, BpB is still waiting for the parking brake activation:

In the BpB preferences, enable the option "Ignore check parking brake is set". This setting will be saved per aircraft. When the pushback is done BpB will bypass the parking brake check and finish.

During the pushback, the aircraft is not following the pre-plan or does not stop:

It could be an issue with the livery. Try with the aircraft default livery.

The gear is not moving. It means the pushback tug is not able to move the airplane to the right position. Make sure you do the right procedure and prepare for engine start before pushback. (APU on etc., on some airplanes the gear is locked otherwise. I.e. FF 767, GLF550 and maybe others)

The outline of the aircraft is not well drawn:

BpB uses the .acf file provided by the aircraft designer. Some properties needed by BpB may be missing. This will only impact on how the outline of the aircraft is drawn during the pre-plan. It will not impact the pushback itself.

The log file reports issue in parsing the acf file:

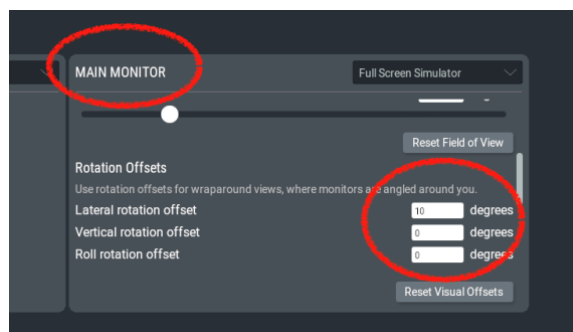
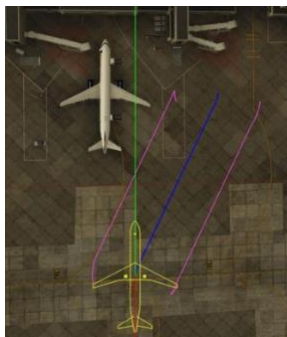
I.e. INFO: Cannot parse acf file: property _wing/15/_Croot not found, aircraft outline may not well drawn.

As said in the previous item, some properties needed by BpB may be missing. This will only impact on how the outline of the aircraft is drawn during the pre-plan.

The log reports it for information only.

There is a shift between the aircraft position / the mouse / pre-planned pushback:

In the x-plane settings/graphics, check that the visual offsets are all at 0 on the Main Monitor. BpB is not working well with multi monitors configuration.



Are there some knowing Aircraft doesn't work with Better Pushback?

Unfortunately yes. If the manufacturer controls the front wheel itself and blocks it ... BpB cannot control the aircraft correctly and therefore cannot get it to the right position.

Knowing Aircraft for the moment:

iniBuilds A300

iniBuilds BelugaST

Unfortunately we cannot solve such problems in BpB but we will try to at least give a notice to the user that he is informed that this aircraft cannot be supported by BpB.

Strange behavior of Better Pushback or general on X-Plane:

Very often, especially after an X-Plane update - clearing the cache can help. BpB also uses a cache folder. Problems can also occur when you activate/deactivate or new scenery installations. BpB's cache is created based on the currently existing scenery. So if you reinstall sceneries, they may be missing or not correct cached. But this caching is required otherwise pushback would not work. Therefore, if you have problems, mostly no matter which plugin in general... you should first cleanup the cache and see if it still occurs after that.

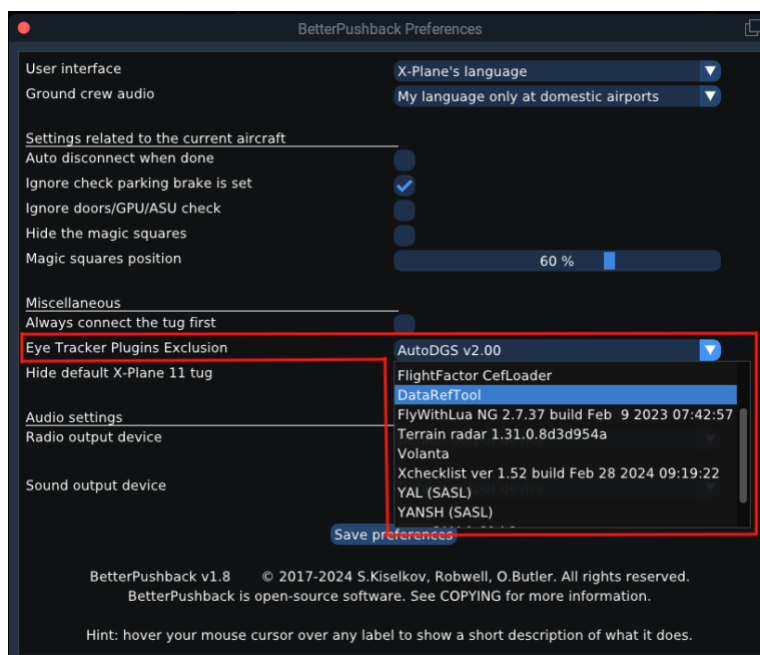
I'm a Aircraft developer and like to support Better Pushback so it works best with my aircraft. What I have to take care of?

There is a thread from skiselkov with a "Concorde FXP" developer and he explained how BP works. Maybe it helps you to make your aircraft work together with BP too.

<https://github.com/skiselkov/BetterPushbackC/issues/268>

Once in the planner, Bpb displays an external/lateral view of the aircraft instead of a top view:

Some Eye tracker plugins use the X-plane Camera system and therefore doesn't allow BpB to work while using the planner or the tug view.



Just select the plugin in conflict with Bpb

This feature can only exclude 1 plugin at the time, assuming that no more than 1 can be installed..

Doors/GPU/ASU check before pushback:

Bpb will check the status of the doors/GPU/ASU before starting the pushback.

If any doors are opened or the GPU or ASU still connected, the pushback will not start.

BpB will check in the file BetterPushback_doors.cfg (located in the Bpb plugin folder).

If your current aircraft is defined in this file, Bpb then will check the status of the doors/GPU/ASU, otherwise Bpb will bypass the check

Explanations on how to add other aircraft are at the top of this file.

If you want to disable the door/GPU/ASU check: In the BpB preferences, set the option "Doors/GPU/ASU check" to "Ignore". This setting will be saved per aircraft. While starting the pushback, BpB will bypass the doors and hatches check.

Important: don't modify this file, your changes will be lost at the next update of this plugin instead

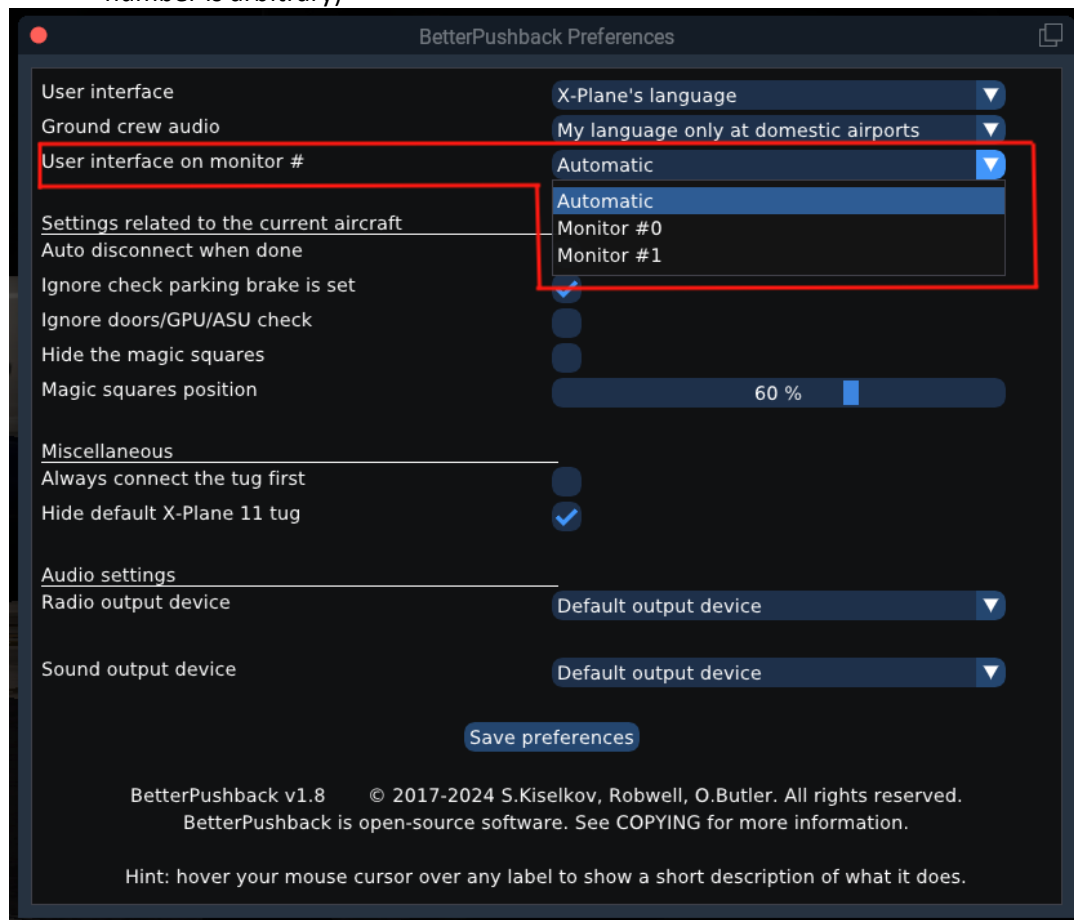
copy this file to <XPLANE folder>/Output/preferences

and modify it as you wishes

BpB with multiple monitors configurations

Due to the way X-plane is managing the multiple monitors configuration, Bpb need to use the monitor on which the x-plane menu is appearing (UI monitor).

Most of the time BpB is able to automatically use the UI monitor. If not you can select manually the monitor (Note: this menu is displayed only if more than one monitor is detected. the monitor number is arbitrary)



“Always connect the tug first” setting

This setting is disabled by default (regular behavior)

When it is disabled, the pushback can be started by triggering one on the 2 commands:

- “Start pushback”
- “Connect tug first”

These 2 commands have a dedicated menu command and magic squares.

Selecting “Start pushback” will have the following effect:

1. Prompts you to do the pre-plan (if not done yet)
2. Then it does the full process (tug approaches the aircraft, connects , does the push , disconnects and goes away)

Selecting “Connect tug first” will have the following effect:

1. Tug approaches the aircraft and connects
2. Wait for triggering “start pushback” in order to resume the process
3. Prompts you to do the pre-plan (even if it was done before)
4. Does the push, disconnects and goes away

Enabling “Always connect the tug first” setting will change the way the commands work:

- When the pushback is not started yet, selecting “Start pushback” will trigger “Connect tug first” instead. Then, if "Start pushback" is selected again, it will have the usual effect listed above, allowing the pre-plan and the rest of the pushback process to be done
- This setting allows other plugins to trigger BpB using only the same command “Start pushback” when pilots want to “connect the tug first”, or to minimize the number of magic buttons to be used on screen

“Tug starts near the aircraft” setting

This setting is disabled by default (regular behavior)

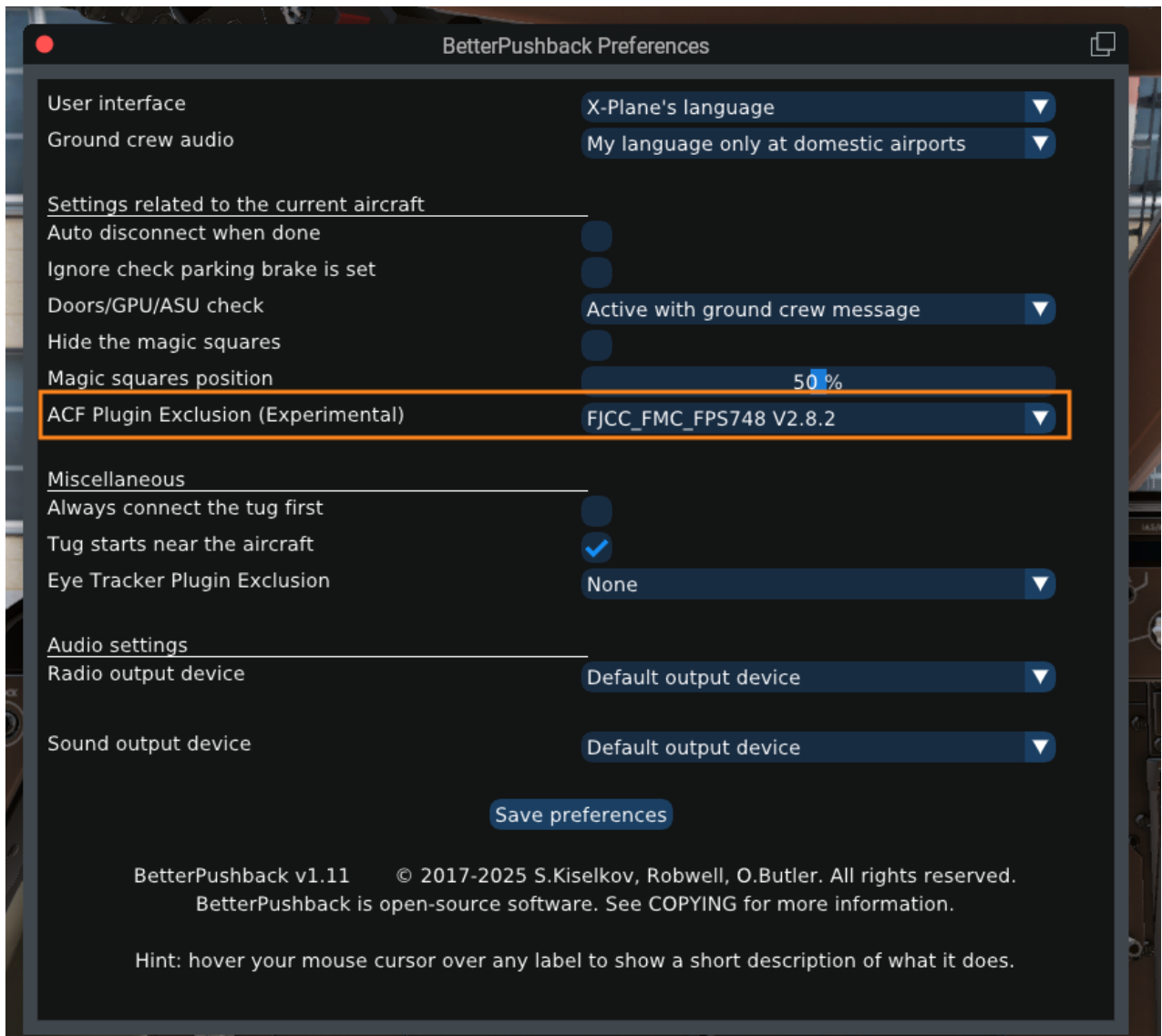
- When disabled, the tug will start his trajectory far from the plane.
- When enabled, the tug will start his trajectory few meters from the front of the plane:



"ACF Plugin Exclusion (Experimental)" setting

Currently the UFMC plugin (provided on the SSG B748 or BAE146) blocks the rotation of the nose wheel making the pushback erratic

This experimental setting has been added to disable temporarily the UFMC plugin while pushing



- Just select the plugin in conflict with Bpb

Datarefs

Name	Type
bp/anim/nosewheel_rotation_speed_rad_sec	Float
bp/anim/cab_position	Int
bp/anim/front_drive	Float
bp/anim/front_steer	Float
bp/anim/rear_drive	Float
bp/anim/lift	Int
bp/anim/lift_arm	Int
bp/anim/tire_sense	Int
bp/anim/vehicle_lights	Int
bp/anim/cradle_lights	Int
bp/anim/reverse_lights	Int
bp/anim/hazard_lights	Int
bp/anim/driver_orientation	Int
bp/anim/cab_position	Int
bp/anim/winch_on	Int
bp/anim/clear_signal	Int
bp/anim/lift_in_transit	Int
bp/anim/beacon_flash	Int
bp/anim/tug_pos_x	Float
bp/anim/tug_pos_y	Float
bp/anim/tug_pos_z	Float
bp/started	Int
bp/connected	Int
bp/slave_mode	Int
bp/op_complete	Int
bp/planner_open	Int
bp/plan_complete	Int
bp/tug_name	String
bp/parking_brake_set	Int
bp/parking_brake_override	Int
bp/ground_crew_audio_volume	Float

History

1.13:

- New: ground crew audio has now its dedicated volume (on preference window and via dataref "bp/ground_crew_audio_volume"
- New: Add compass rose in the planner view (Credits to wahltho)
- Fix: manual pushback : ground crew voices were not initialized according the current airport when doing a push at the arrival airport
- Fix: typos on French translation

1.12:

- Hide magic square setting can be force to global
- Expose planner state via datarefs (Credits to wahltho)
- Update the X-plane SDK to the latest version
- Fix typos on the translations
- Fix xp crashes at exit on linux platform (credits to ivaradi and ksi65)
- Fix xp crashes when exiting the planner (credit to Jordan886)
- Fix night lamp object not allowed while into the planner
- Fix Magic squares not displayed for Airliner also flagged as GA (i.e Legacy 650)

1.11:

- New: Doors/GPU/ASU check setting is now with 3 options: (Credits to rswilem)
 - Active with ground crew message
 - Active, but stay silent
 - Ignore
- New: Pre-plan pushback can be triggered a 2nd time, when the tug is connected and waiting for parking brake release (Credits to rswilem)
- Workaround: With Aircrafts using the UFMC plugin (i.e SSG B748 and BAE146), Bpb may not be able to do the push correctly. A new setting has been added "ACF Plugin Exclusion (Experimental)" to disable temporarily the UFMC plugin while pushing. (read carefully the FAQ above))

1.10:

- New: **add Manual push** (read carefully the FAQ above)) (thanks to enjxp)
- New: Add door checks for Toliss A321Neo (thanks to ch4dwick)
- Fix: the planner now keeps the same ground team voices when called several times in the same airport

1.9:

- New setting: **Tug starts near the aircraft** (read carefully the FAQ above))
- Add door checks for Toliss A330

1.8.3:

- Fix: real-world weather not restored after exiting the planner (Xp11 only)

1.8.2:

- Fix magic squares spurious behavior
- Improve Tugs's sounds. Credits to Tom Knudsen

1.8.1:

- Fix audio setting issue in the preference window
- Eye tracking exclusion is now done from the preference window (read carefully the FAQ above).

1.8:

- setup window revamped
- BpB menus display now the keyboard shortcuts
- add datarefs to expose tug position
- improve BpB camera management with other camera plugin (i.e. ABC, X-Camera....)

1.7:

- Improve the magic squares (read carefully the FAQ above).
- Add setting to "Always connect the tug first" (read carefully the FAQ above).
- Fix SSG B747-F doors checks

1.6:

- Add Portuguese-Brazilian translation.
- Add GPU/ASU check
- Add 1 magic square for the **connect tug first** command
- Doors/GPU/ASU check is now just before the tug connection to the nose wheel
- The 3rd magic square displays the status of the ongoing push-back

1.5:

- Improve BpB behavior in case of multiple monitors configuration (read carefully the FAQ above).
- **Hide the magic squares** option is now per aircraft
- Add setting to move up or down the magic squares
- Fix: **Hide the magic square** option is now visible on Xp12
- Fix: "ground to cockpit, plan acknowledged, call me through the menu when you are ready" vocal message not triggered

1.4:

- Add option in the preferences window to ignore doors/hatches check.
- Doors/hatches check : FF B777v1 added
- Fix some French translations

1.3:

- fix some vocal messages on specific langs (ru)(i.e "starting push-back, you can start engines" while engines were already started, and corrected to "starting push-back"
- add doors/hatches check before starting pushback (see FAQ).

1.2:

- fix some vocal messages on specific langs (en-fr, en-AU, en-de)(i.e "starting push-back, you can start engines" while engines were already started, and corrected to "starting push-back"
- remove vocal message at plugin start-up for non-compatible gear.

1.1:

- Add shortcut command buttons ("magic squares") on the left side of the screen

1.0.12:

- Fix issue with Ignore check parking brake are set
- Fix issue with eye tracking plugin i.e Tobii (credit to Darko24 for the help)
- Fix several glitches on the Preferences window

1.0.11:

- With helicopters, BetterPushBack remains silent and idle
- The ground agent voice is now set according the language of the current airport (and not at the airport during the start of XPlane)
- this plugin can be updated via [SkunkCrafts Updater Standalone client](#)
- update some datarefs for improving xplane 12.1 compatibility

1.0.10:

- Detect whether there is a new version available. So you don't need go to the page to check for new version. If you se a notification "On the planning Screen below" then you can go to get the new version.
- Fixing a Bug: Do not allow the CAB_VIEW from external window - Otherwise the mouse will disappear forever.
- Fixing a Bug: After an accident the menu for Better Pushback are not hidden anymore
- Settings Window Size fix - when many audio devices
- On the planning-screen only -> clear weather and clouds removed for better view in planning

1.0.9:

Always normalize external HDG values before using them

I searched through all assignments to bp.{cur|last}_pos and the dataref seems to be the culprit. I know from my AutoDGS plugin that some old airports have unnormalized ramp headings that lead to crashes in libacutils as well.

Possible fix for <https://forums.x-plane.org/index.php?/files/file/89033-better-pushback-mod-x-plane-1112/&do=findComment&comment=393982>

Some fixes for the "connect tug first" procedure

The value of the "connect tug first" procedure (e.g. on VATSIM) is that you are ready to go but have a chance

to make last second changes in case you get a different route.
Prior to these patches a preplanned route was not presented for final review.

1.0.8.1:

- Official support of Xp11 and Xp12
- Preference window loose the focus if activated during the planner or during the pushback itself. This fix blocks the pref window to appears during the pushback or planner.
- Drawing issues correction on Multi Monitor Setup
- UI Scale Support (For example, if you were to use a UI setting of 150%, this should no longer be a problem.)
- Fixed Tug Cab View
- New Setting: Ignore check parking brake are set - related to current aircraft. (Helps for some aircraft's. KA350 for instance)
- Some translation added on settings dialog
- Italian language translation added
- Some Audio corrections

Previous versions:

- Settings not working for X-Plane 12 are removed (Not in X-Plane 11)
- Developer Menu Setting removed, as it is not implemented anyway
- "Auto disconnect when done" in the settings is now related to current loaded airplane.
- Solved a crash reported "CTD issues" - start pre-plan , then move the mouse (XPLMProbeTerrainXYZ) - should be fixed for all airports.
- Support for Shared Flight Plugin
- Save/Load Configuration works now
- Tooltips in settings dialog
- Negative evaluation should not result in a crash anymore
- There was a Check, with the callout "aircraft has non-positive wheelbase". This is now removed for all aircraft as it doesn't work for X-Plane 12.
- Memory Management
- Release Managment