# How to use the scripts here:

Purpose: These scripts are for the kOS mod for Kerbal Space Program, v 0.17.3. They attempt to land a plane on the KSC runway, or any other runway if you have mods installed that change the runway position.

## Decide what version to use.

There are several varieties of the script, as it existed at the end of various episodes of the twitch stream. If you want to follow along and see what it looked like in an episode, look at the folder for that episode. If you just want the best most heavily debugged version, just look in the lastmost folder from the highest numbered episode.

## Prep ahead of time: Mark where the runway is with two marker vessels.

Make a small rover you name “VASI east” and launch it and drive it over to just past one end of the runway. Make a small rover you name “VASI west” and launch it and drive it over to the other end of the runway. The script is hardcoded to look for vessels called “VASI east” and “VASI west” to mark the runway endpoints, but despite the names they don’t really need to be at the east and west ends - just be opposite from each other to mark the runway endpoints, and they should work on any runway supplied by a mod, whether actually oriented east/west or not. You can also land on long flat sections of bare ground this way too by just marking where you’d like to land with these 2 ground vessels. Be sure to keep them at least 2km apart from each other just to give you enough length to work with.

Note that for this purpose, a flag counts as a vessel too, so you can just plant a flag called “VASI west” and a flag called “VASI east” and that should work too.

If using a runway other than standard KSC, be sure that the “VASI west” end of the runway has at least 15 km of open air to approach from on that side of the runway. The script does not know how to avoid terrain collision if there’s a mountain in the way of the glide path.

## Pick an airplane.

Many airplane designs will do, provided they have the following characteristics, but verify that it flies okay by hand first. The script isn’t good enough to deal with unstable craft like ones with poor center of mass positioning.

*Be sure your craft will descend at 70m/s without having to dive the nose* - meaning the craft will be able to descend at an airspeed of 70m/s even if the nose is level to the horizon. If you try using a super slow speed high-lift craft, the script will end up trying to dive to land it because it’s currently hardcoded to presume it will land at about 65-80 m/s or so.

*Be sure your craft will be able to maintain altitude if cruising at 120 m/s* - meaning that it’s not a low-lift sort of plane that can’t stay up without high speed.

## Prep the plane for using the script.

Add a scriptable kOS part to the craft. Keep in mind the script is a bit longish and the smallest disk capacities might not be enough.

Either load the two given .ks files you see here onto the KOS part, or have antenna connection to the KSC archive and run from the archive with ‘switch to 1.’

*Fly the plane to anywhere within 25 km of the runway, between 0m and 10000m altitude.* As long as the start position doesn’t have a mountain in the way, the script should be able to steer to a position about 20km-ish from the runway end and make its approach from there.

## Run it.

Just RUN PILOT.KS. There are no parameters. It takes everything it needs to know from the positions of the vessels VASI east and VASI west.

## If you need to abort.

If the script is going badly and you must abort it to regain manual control, It’s designed to quit when you press the abort action group button (default key binding is BACKSPACE unless you changed it in your KSP game settings). This way you don’t have to focus on the terminal, hit CTRL-C, type ‘SET SHIP:CONTROL:NEUTRALIZE TO TRUE.’, then focus outside the terminal again to get WASD control, which is what you’d have to otherwise do.