

ArrestorCables

Version 2.6 FREeware

for FS2004/FSX

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All contents of this package are Freeware: No money may be exchanged/earned/paid for this package.

SEE INSTALL.TXT FOR INSTALLATION INSTRUCTIONS.

NOTE: THE STRANGE BOX THAT FLIES AROUND ON MICROSOFT'S DEFAULT AIRCRAFT CARRIERS SCENERY IS A KNOWN PROBLEM WITH MICROSOFT'S SCENERY, AND HAS NOTHING TO DO WITH ARRESTORCABLES.
(this issue may be long gone after FS2000 and FS2002, but I'm keeping the note here just in case)

Sections in this document:

- NEW FEATURES IN VERSION 2.6 FOR FS2004/FSX
- KEYSTROKE SUMMARY
- PROGRAM USAGE
- TWEAKABLE PARAMETERS
 - ADDING AND EDITING CABLE CATCH ZONES (.dat file)
 - CREDITS
 - LIMITATIONS
 - KNOWN ISSUES
 - LEGAL AND OTHER STUFF

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NEW FEATURES IN VERSION 2.6 FOR FS2004/FSX

I do not own FSX myself. This package was tested in FSX by our friends at vusafs.com and usnva.com. Thanks, gents!

AUTOMATIC CATAPULT ARMING

This version has an option to have the program automatically detect conditions that seem to be right for catapult arming.

This should work anywhere, and it's intended for use on the moving aircraft carriers in FSX, but you can also use it near existing cable catch zones.

There's an OPTIONS checkbox for this feature. If it's turned off, just use the manual cat arming keystroke toggle as in previous versions of ArrCab.

FORCED TRAPPING a.k.a TRAP ON LANDING ANYWHERE (and the Lateral Velocity option)

This feature is also intended for use on FSX moving carriers. Since it's not feasible to define a cable catch zone for the moving carriers "from the outside" (i.e. from outside the moving carrier code), my solution is to allow the user to request that the next landing be a trap when you touch down, no matter where you touch down. This is done using the <key combo>+F10 keystroke, and must be done for every landing you wish to be a forced trap landing. It was my decision that you would not want a mode where all landings become traps.

This feature will NOT work within a few miles of an existing defined cable catch zone. That would be cheating. Use it for the FSX moving carriers!

Forced Trapping checks your tailhook status (if the tailhook checking toggle is enabled on the OPTIONS tab) and your landing gear. It is intended for use on FINAL or at least in the loop, not from far away.

Special note on the **Lateral Velocity** option: Some users have reported that they have converted aircraft carriers into AI aircraft and can land on them. Those AI carriers behave differently than the scenery carriers in FSX. The scenery carriers in FSX continue moving when you land on them. "AI aircraft" carriers stop as soon as you come near them or land on them, using the anti-collision rules of AI aircraft (you'll see this behavior when taxiing around a busy airport - they stop when you're near them). In order to support "AI aircraft" carriers with the Trap On Landing Anywhere feature, I've added a checkbox on the OPTIONS tab which allows you to toggle the addition of lateral velocity on forced trap landings. With Lateral Velocity enabled, landing on a moving FSX scenery carrier will be more natural as the added lateral velocity represents the aircraft gripping the deck and moving along with the moving ship. With Lateral Velocity disabled, the forced trap landing deceleration is only along the aircraft's forward velocity axis, which is better suited to forced trapping on "AI aircraft" carriers.

OPS SOUNDS

Whenever you are using manual cat arming or forced trapping keystrokes, you may optionally turn on Ops Sounds.

Whenever you manually arm or disarm the catapult, ArrCab uses the sound files within the \Ops_Sounds subfolder of the ArrCab installation folder for communications between the pilot and the deck officer.

Further, ArrCab reads the TITLE of your aircraft (same as the TITLE parameter in the Aircraft.cfg file) and checks for 2 files called:

RADIO_PILOT_<aircrafttitle>_ID.wav
RADIO_DECKOFFICER_<aircrafttitle>_ID.wav

If it finds these files in that \Ops_Sounds subfolder, then the comms exchanges will have your aircraft ID embedded in them. If not, the comms exchanges are generic.

This allows you to record these two files for each of your carrier aircraft, name them according to the naming scheme above, and drop them into the \Ops_Sounds subfolder. From then on, whenever you fly those aircraft ArrCab will use the appropriate aircraft ID sounds when it plays the comms messages.

ArrestorCables 2.6 Freeware for FSX/FS9

For example, Pilot says: "Intruder 500, set and holding on cat", Deck Officer replies: "Intruder 500, cat armed and set"

Included are files for the "A-6E BOMB" aircraft, one of Rick Sasala's excellent aircraft. PILOT and DECKOFFICER files are provided. I processed the recordings to make them sound like they were over the radio and added noise to the Deck Officer sounds. No, I won't be offering sound creation services for all of your aircraft, I'm sure you'll do fine. Replace .wav files as needed, keeping to the naming scheme.

This feature is OPTIONAL. There's a new checkbox for it if you want to turn it off.

KEYSTROKE SUMMARY

Available keystrokes within FS for communicating with ArrCab are as follows (for descriptions of these features, see PROGRAM USAGE section below).

KEYSTROKE (key combo)+	ACTION
F8	Show status message (including information about nearest cable catch zone) within FS
F9	Arm/disarm catapult (only if automatic cat arming is not turned on - see the AUTOMATIC CATAPULT ARMING section above)
F10	Consider the NEXT landing (only) to be a cable trap (see the FORCED TRAPPING section above) This requires landing gear to be deployed. This will NOT work within a few miles of any existing cable catch zone (in your active .dat file). It is intended for use on moving aircraft carriers in FSX, not as a cheat. You must throw this keystroke for EVERY landing for which you desire forced trapping. The good news is, I gave you some ear candy as a treat to balance off the need for throwing this keystroke request, and also for manual cat arming keystrokes. See the OPS SOUNDS section above.
F12	program disable/enable ("manual override")
F11	reset program
F5	fuel load on/off
F6	fuel offload on/off
F7	toggle fuel transfer rate (between 500 GPM drogue rate and 1200 GPM boom rate)
F1	apply level 1 random battle damage
F2	apply level 2 random battle damage
F3	apply level 3 random battle damage

(key combo) is either "SHIFT" (default) or "SHIFT+CTRL" (see OPTIONS tab).

Thus, in the default configuration SHIFT+F8 shows the ArrCab status message within FS.

ArrestorCables 2.6 Freeware for FSX/FS9

On the Options tab there is a button controlling which key combination you prefer to use. THE OPTIONS TAB ALSO HAS MANY OTHER IMPORTANT OPTIONS, INCLUDING WHETHER OR NOT YOU MUST HAVE YOUR TAILHOOK DOWN FOR CABLE CATCHING TO WORK. SOME AIRCRAFT DO NOT HAVE WORKING TAILHOOKS AND YOU MIGHT FIND ARE ALWAYS FLAGGED AS HAVING THEIR TAILHOOK DOWN, BUT I CAN'T GUARANTEE THAT, HENCE THIS PARAMETER.

***** IMPORTANT *****

IF TRAPPING IS NOT OCCURRING, FIRST CHECK YOUR OPTIONS TO SEE IF TAILHOOK IS REQUIRED, THEN USE SHIFT+F8 TO VERIFY THAT YOUR AIRCRAFT IS RECOGNIZED AS HAVING ITS TAILHOOK DOWN. PLEASE DON'T BLAME ME OR ARRCAB IF YOU'RE NOT TRAPPING BECAUSE YOU'VE FORGOTTEN TO LOWER YOUR TAILHOOK!

The Keystrokes tab displays all currently defined keystrokes.

The rest of this document assumes the default selection of "SHIFT+<key>" for all keystrokes.

PROGRAM USAGE

1) Start ArrCab first or start FS first. If you start ArrCab first it will detect FS once FS is running. If you start FS first, ArrCab will detect FS as soon as ArrCab is started.

For best results you should configure FS for 15 frames per second or better.

2) When you start ArrestorCables the onscreen data will provide several pieces of information you can use to verify proper operation. If there is a problem, onscreen data should give you a clue as to what caused the problem. Problems in operation are only due to three possible causes: 1) corrupted files on disk (highly unlikely), 2) improper installation (all files except the .fx file must be in the ArrCab program directory), or 3) incorrect alteration of data files by the user (see "ADDING AND EDITING CABLE CATCH ZONES (.dat file)" section below).

If the user has altered the .dat file or used a different .dat file, look for an error log file called ArrCabDatLoadErrorLog.txt. This file should indicate which part(s) of your .dat file caused problems.

If you're having trouble with sounds, try using the Special Sound Handling option first. For trap and cat ops, the program expects two .wav files to reside in the folder containing the ArrestorCables.exe file. These are Catapult.wav and CableCatch.wav (the high-quality, larger files from Aaron Swindle). There are also .wav files for Battle Damage sounds which also must reside in the folder containing the ArrestorCables.exe file.

Make sure you have the latest drivers for your sound card.

ArrestorCables 2.6 Freeware for FSX/FS9

3) (OPTIONAL) Select alternate .dat file, if desired.

The included .dat file is sufficient for use with the four carriers included in "Flight Deck 3" plus the Patuxent River NAS practice cables, the four carriers in the FS default scenery, and many others.

If you have your own .dat file defining new cable catch zones, then placing it into the directory containing ArrestorCables.exe will make it available for selection.

If desired, select a different .dat file. By default, the last .dat file used is loaded on startup. (if that one is not found, ArrestorCables.dat is used)

The IDEAL configuration is to put all of your catch zones into ONE .dat file so you never have to mess with selecting a new .dat file again. Just use Notepad to copy and paste, but follow the existing format and remember to GET THE ZONE NUMBERING RIGHT.

4) CATAPULT

Catapult only works under these conditions:

- aircraft is a tricycle gear, fixed wing aircraft (does not work with taildraggers or helicopters)
- landing gear is extended and landing gear LEVER is in the extended position
- parking brake is set
- aircraft is within about a boat-length of the nearest cable catch zone
- aircraft is in a landed state (on the deck or ground)

From the cockpit in FS, open the "World" menu and select "Go to Airport" and move your aircraft to the flight deck of one of your carriers.

Taxi to one of the catapults on deck. Set parking brake (CTRL+.). If using Auto Cat Arming, cat should arm itself. Configure flaps and pitch trim for launch. If using Manual Cat Arming, press SHIFT+F9 and note the onscreen message indicating CATAPULT ARMED (and the Ops Sounds comm messages, if that option is enabled). Increase to full power. You may wait until the engines are spun up, or you may release immediately. Releasing the parking brake will initiate the launch. You'll hear a CLUNK and JET BLAST sound as the catapult releases and throws you off the deck.

If you change your mind before launch and need to disarm the catapult, just press SHIFT+F9 again (manual) or cut throttle and release parking brake to disable catapult. There will be an onscreen message indicating that the catapult is now disarmed.

CATAPULT SMOKE:

If you check the "Use Aircraft Smoke when Catapulting" checkbox, ArrCab activates your aircraft's smoke system at start of cat and turns it off when cat stops pushing.

Doug Horton has researched the use of this option to simulate steam from the catapult. Just add or modify the [smokesystem] section in your carrier aircraft.cfg to look like this:

ArrestorCables 2.6 Freeware for FSX/FS9

[SMOKESYSTEM]

smoke.0=0.00, -10.00, 00.00, fx_smoke_w_DH

//smoke.0=-1.00, -2.00, 0.00, fx_napalm

(if you followed the installation instructions, the fx file referred to here will have already been installed into your Effects folder)

Those users who use the aircraft smoke system for other fx files can configure a copy of the same aircraft to have a different smoke system, then switch to that aircraft after catapulting. In any case, comment out your existing smoke system rather than deleting it. Just precede the existing smoke.# lines with //, like in the example above.

WARNING: IT TAKES FS A MOMENT OR TWO TO LOAD FX FILES. You may find that this causes interference the first time you catapult in a given flight (or perhaps every time). It's a hardware/software FS speed issue, not an ArrCab issue. If you experience problems, discontinue use of this feature (or get a faster computer, but I can't insist on that!).

I do not know with certainty that this feature will work in FSX. During testing for version 2.6 we focused on the main functions of the program.

5) CABLE-TRAPPING

Fly the pattern and try to land on the carrier's cables. If you know how, you can use your NAV1 to follow the ILS available at this carrier (110.30 MHz, on a magnetic heading of about 191 degrees).

There is an option to allow ArrCab to display an onscreen message whenever cable trapping detection becomes active. See the Options tab.

If you make the cables, which requires practice, you'll hear a distinct sound indicating the CLUNK of tailhook catch and the vibrations of a cable unreeling and providing braking for your aircraft, and you'll come to a stop.

It's more likely, however, that you'll either land before the cables and bounce over them, or land beyond them, or that your approach will not be safe for landing and you'll have to wave off and go around for another try. Never dive for the deck!

If you do make the cables, remember to cut power and apply brakes. Otherwise apply power!

(if you're using autothrottle on an ILS approach, it's best to disengage it before landing, but in case you forget, remember that in FS the keystroke to toggle autothrottle on and off is CTRL+R -- if you don't turn off autothrottle after landing, your own engines will push you off the deck after coming to a stop!)

This requires practice, practice, practice.

TECHNIQUES TO TRY WHEN DEBUGGING YOUR CABLE TRAPPING:

- Use manual override to disable ArrestorCables and then use FS's Instant Replay feature in Spot view (or tower view) to see exactly where your gear are located on the deck when you touch down.
- Note that FS2002 actually places TIRE MARKS on the deck located at the touchdown positions of your gear. There may be slight differences between your aircraft's VISUAL MODEL of gear location and its FLIGHT DYNAMICS positional definitions of gear positions, but this will still give you a decent idea of where you are touching down relative to the cable catch zone.

6) MANUAL OVERRIDE BUTTON / KEYSTROKE

If you plan to take off from a starting position BEHIND the cables (for example, if you're flying the F4U Corsair which does not catapult), you must use MANUAL OVERRIDE to temporarily disable ArrestorCables. Press SHIFT+F12 and note the onscreen message. Otherwise the program may think you're landing again and catch you on the cables, ruining your takeoff. After takeoff, just press SHIFT+F12 again to reenable program operations.

Use manual override if you are using INSTANT REPLAY that involve cable catching, because ArrestorCables cannot distinguish between REAL-TIME FLYING and Instant Replay. It's likely to detect cable catch again and stop your aircraft after the replay is finished playing.

If desired, you can also control manual override with a button in the ArrestorCables window.

When you disable ArrestorCables with manual override you will see a reminder message on the screen every 30 seconds. You can disable this reminder, but once you've disabled ArrestorCables it's very easy to forget that it's disabled, so I strongly recommend leaving the reminder ON.

7) RESET BUTTON / KEYSTROKE

Reset is like a warm reboot. It cleans up and performs the same program initializations that were performed when you started up, except that it loads the currently selected .dat file. This is a "safety valve" feature. In case something strange happens, a reset should solve the problem.

Note that if you reset the program, it will become reenabled even if it was in a disabled state when you performed the reset.

You can also reset ArrestorCables using the keystroke SHIFT+F11 from within FS.

ArrestorCables 2.6 Freeware for FSX/FS9

8) "GET STATUS" KEYSTROKE

Pressing SHIFT+F8 will display a message in FS containing information about ArrestorCables (flight status, trapping active/inactive, catapult armed, fuel transfer on/off, and nearest cables rwy hdg and ident text).

If you need to verify that trapping is active, for example, then when on short final get status and ArrestorCables will let you know if trap checking is active. If it is not, do a reset (SHIFT+F11).

9) FUEL TRANSFER OPS

Inflight refueling in FS without ArrestorCables cannot be accomplished in real time, because even if you gingerly position your aircraft at the end of the boom of the KC-135 your friend is flying, you still have to pause the game to get into the fuel dialog.

ArrestorCables allows you to actually transfer fuel while flying, without pausing.

On the Fuel Transfer tab you can select a rate of 500 gallons per minute or 1200 gallons per minute, as appropriate to the tanker you're using. Within FS you may toggle the fuel transfer rate using keystroke SHIFT+F7.

Both fuel load and offload are supported, so both the target aircraft and the tanker aircraft can alter their fuel level (one loading, the other offloading) at the same time, simulating a fuel transfer.

This is NOT handled automatically by ArrestorCables -- you must initiate and end the transfer by keystroke. From within FS press SHIFT+F5 to toggle fuel load on or off. For fuel offload, the keystroke is SHIFT+F6.

Fuel load is not allowed below 5000 feet AGL, and if you descend to below 5000 feet AGL or the ground level below you rises, a fuel load in progress will be terminated. Fuel OFFload is allowed at any altitude -- this is to allow the simulation of emergency fuel dump, which should be done at the 500 gpm rate (this is still too high compared to reality, but close enough for our purposes). Fuel loads automatically stop when tanks are full, or you can use the keystroke toggle. Fuel offloads automatically stop when tanks are down to 10% capacity, or you can use the keystroke toggle.

The tanks supported are CENTER, CENTER2, LEFT MAIN, LEFT AUX, RIGHT MAIN and RIGHT AUX -- external tanks and tip tanks are not affected. Fuel transfer rate is divided evenly among the appropriate tanks.

If you engage MANUAL OVERRIDE during a fuel transfer, the transfer is paused. When override is disengaged the fuel transfer resumes.

10) BATTLE DAMAGE

Naval aviation simulation sometimes involves simulated combat, either in multiplayer games or in single player mode. FS has a failures interface, but requires pausing the game to get into the dialog. It supports random failures within a given time frame or immediate failures for systems and components of your choice. The limitations of this interface for use in a battle damage situation are obvious -- it's intended to simulate "maintenance failures".

ArrCab adds a new dimension to system and instrument failures by providing three keystrokes for applying immediate, random battle damage, one keystroke for each of three levels of severity of battle damage.

The keystrokes are SHIFT+F1, SHIFT+F2 and SHIFT+F3, in increasing order of severity.

Every time you press one of these keystrokes, each working component/system in that damage category has an even chance of failure, with one failure guaranteed. You can press the keystrokes multiple times to get more failures in a given category, and of course you can press the other keystrokes to obtain a full spectrum of damage. As there are fewer and fewer working components in a category each time you press the key, the chances of multiple items failing at once also increase, until there are no more working items in that category.

ArrCab does NOT tell you what has failed; you would have to assess damage yourself. The exceptions are noted.

Level 1 damage items are those which do not directly affect your ability to fly the aircraft (keep in mind this is meant for military combat aircraft):

- ADF
- Heading Indicator
- Transponder (onscreen message reminds you: no ID on radar, in case ACRAD, FSNav or CH, or similar, is in use in a multiplayer session)
- NAV Radios
- Pitot
- Turn Coordinator
- Vacuum System

Level 2 damage items are those which directly affect your ability to fly the aircraft, doubly so in IFR conditions:

- Airspeed Indicator
- Altimeter
- Attitude Indicator
- COMM Radios (onscreen message reminds you: no comms, in case you're using a voice comm program in a multiplayer game)
- Vertical Speed Indicator

Level 3 damage items are critical (especially in conjunction with damage in levels 1 and 2):

- Magnetic Compass (cockpit hit, onscreen message indicates pilot wounded)
- Engines (each engine treated separately)
- Electrical System

ArrestorCables 2.6 Freeware for FSX/FS9

Fuel Indicators (all at once, not separately -- this is a limitation imposed by FS)
Fuel tanks (each "hit" on a given fuel tank that still has fuel reduces fuel in that tank by 25%)

If you've lost electrics, have no flaps and you want to try simulating an emergency landing on an aircraft carrier (they use big nets under those conditions), then crank up ArrCab's deceleration factor to overcome the higher airspeed you'll need on the way in -- good luck! Don't forget to put it back to the normal value afterward! (Decel Factor -300, Accel/Decel Timing Granularity 5)

If you check the "Play Battle Damage sound" checkbox, ArrCab will try to play several kinds of sounds to represent the battle damage situation. For levels 1 and 2 you'll hear a short set of distant explosions. If you lose your comm radio you'll also hear radio static. For level 3 you'll hear a missile lock warning and a loud explosion. If you lose your electrical system you'll hear some electrical buzzing sounds.

TWEAKABLE PARAMETERS

The ArrestorCables.INI file now contains parameters which control several aspects of program behavior. You can either edit the .INI file and restart or you can tweak the parameters directly in the ArrCab window using the provided edits and up/down buttons.

Within limits you may adjust the acceleration/deceleration/cat hold factors and the speed cutoff by changing the appropriate parameter value.

If you are getting wet after catapult launch even though you are launching with full power on all engines, brakes off, spoilers off, flaps extended and pitch trim up, and not pitching up so hard that you're stalling, then you may wish to increase the catapult cutoff speed. This is the minimum speed you will achieve before the catapult stops accelerating you.

If you are really into fine-tuning your launches and you want to make sure that you are achieving the required catapult speed right at the edge of the deck, then you may wish to tweak the catapult acceleration factor. There are no real-world units of this factor because it represents an instantaneous acceleration that is integrated over time during the catapult launch in a somewhat non-deterministic way (i.e. subject to CPU speed, memory, and achieved frame rate in FS).

If you are falling off the end of the deck after cable catch even though you are landing at your stall speed, cutting power and applying brakes after trap occurs, and assuming you're using a real carrier aircraft and not some super-heavy thing not intended for carrier ops, then you may wish to adjust the cable catch deceleration factor.

Some folks want a little more cable unreel before they stop. Tweak the deceleration factor down.

If you exceed the valid range for any of these parameters, the program will reset the offending parameter back to the default value.

ArrestorCables 2.6 Freeware for FSX/FS9

There is also a timing granularity parameter. Some users may find it helpful to increase this number from the default value of 1 to a higher value. Think of this as reducing the number of pulses sent to FS via FSUIPC for acceleration and deceleration (not for cat hold) -- a greater timing granularity means fewer pulses per second. This can help prevent "logjams" which can cause frame rate loss and might choke off sounds. Too large a value of timing granularity will result in loss of smoothness and eventually loss of functionality.

Regarding sounds, a few users have reported that they can only hear ArrCab sounds if FS sound is turned off. The "Special sound handling" checkbox gives ArrCab permission to turn FS sound off before asking the operating system to play an ArrCab sound. It then turns FS sound back on. If this checkbox is not checked, ArrCab never toggles FS sounds at all.

ADDING AND EDITING CABLE CATCH ZONES

To add more cable catch zones (not scenery, just data for ArrCab's detection algorithm), use the included spreadsheet. It contains instructions and images, and provides a simple input-output interface for generating new cable catch zones.

Each .dat file can only contain up to 99 zones. Reaching this limit is ridiculously unlikely, but if you reach it, just make a new .dat file.

This format is very familiar to those who have seen the SCENERY.CFG file, or MS Windows INI files.

Each catch zone section looks like the following example and MUST contain proper data for every listed parameter:

```
[ZoneXX]
CarrierIdent = non-blank text identifying the carrier
FrontRightCornerLat = number
FrontRightCornerLon = number
FrontLeftCornerLat = number
FrontLeftCornerLon = number
BackLeftCornerLat = number
BackLeftCornerLon = number
BackRightCornerLat = number
BackRightCornerLon = number
DeckAltInFeet = number
CableCatchZoneHeightInFeet = number
RunwayHeadingInDegreesMag = number
```

where "XX" is always a two-digit integer, e.g. 01, 02, ...99, starting with "01".

Data Range Restrictions:

CarrierIdent: one or more non-whitespace characters

ArrestorCables 2.6 Freeware for FSX/FS9

(i.e. DON'T LEAVE IT BLANK or your zone will be ignored)

-90 < ..Lat < 90

-180 < ..Lon < 180

0 <= DeckAltInFeet <= 30000

0 < CableCatchZoneHeightInFeet < 5

0 <= RunwayHeadingInDegreesMag < 360

It's a simple matter to map out this information using the data provided on the screen in slew mode. If the default values don't work for you, make an alternate .dat file. Do not use the slew mode altitude for DeckAltInFeet, because some aircraft settle a bit when not in slew mode.

I found that it's very easy to mess up the longitude by forgetting that WEST must be stored as a NEGATIVE number. (or South latitude for that matter)

The latitude and longitude data provided by FS look like this: "N32* 32.44". The asterisk indicates "degrees", and the user is meant to understand that what follows is minutes. Latitude and longitude is usually specified in degrees, minutes and seconds, separated by colons, like "32 : 32 : 26.4". There are 60 seconds per minute, and 60 minutes per degree.

Thus "32* 32.44" converts to degrees as follows: 32 degrees + (32.44 minutes divided by 60 minutes per degree) = 32.54066667 degrees. (remember, units are our friends).

So, when you use slew mode to gather lat/lon data for cable catch zones, you must convert the minutes value after the asterisk into degrees by dividing by 60. The provided spreadsheet does this for you.

If necessary (highly unlikely - I've never heard of it being necessary), tweak the value of CableCatchZoneHeightInFeet. The height of your CG is evaluated against the height of the "box", and when pitch is up for carrier landing, CG is at a higher altitude than the tailhook. Experiment as needed, but ONLY AFTER SPENDING A DAY MAKING LANDINGS WITH THE DEFAULT VALUES. Trust me, raising CableCatchZoneHeight to make your landings easier is a mistake -- it'll ruin the safety of your aborts by causing undesirable trappings to occur, resulting in crashes.

If you miss the cables, GO AROUND!

DO NOT tweak the DeckAltInFeet away from the actual height of the deck, because DeckAltInFeet is one of the pieces of data used to determine if you're STILL on deck AFTER landing. Raising it above or lowering it below the actual deck height might cause the program to catch cables ON TAKEOFF, and you don't really want that happening, do you?

There is one exception to this general suggestion. If you are experiencing weird effects and you know that your carrier aircraft is taller or shorter than the DeckAltInFeet provided in the .dat file by a significant amount (to be determined by you), then you'll want get on deck (NOT in slew mode) and press shift-z to find out what altitude you're at in your own aircraft. Use that value to set DeckAltInFeet if it's significantly different than the default value.

ADDITIONAL CREDITS

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Also, many thanks to Julien-G. Ravot and J.-Claude Verville for taking time to assist me in debugging and configuring for operating systems configured to use decimal separators other than '.'. Users with Windows configured for French language can use ArrestorCables because of them!

Thanks to Pete Dowson for open-mindedly exploring new FSUIPC features.

Special thanks to Doug Horton for suggestions, testing, and for the "catapult steam" special effects file.

Thanks to Abacus for providing French, German and Dutch translations of ArrCab text with no strings attached!

I generated the **new** translations and altered some of the existing ones using a combination of freetranslation.com and my own werewithal.

LIMITATIONS

Please don't try to put a carrier on the international date line or at the poles (i.e. above about 80 degrees North or South latitude). The code uses Lat/Lon data as an x-y coordinate system and may not properly handle the wrap-around nature of a globe for cable-catch checks.

I have not tested the program with multiple aircraft carriers placed right next to each other, and I hope that you don't either. It's just not a realistic condition.

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