

|   |   |                    |
|---|---|--------------------|
| The <b>CIX</b> VFR Club   | Flight Training Notes                             | Exercise <b>33</b> |
| For Simulation Purposes only. Not to be used for real world flight. | <b>CHECKLIST for FLYING with FLIGHT SIMULATOR</b> | Issue 1.3 14/05/14 |

See the Cix VFR Club Training Manual Exercise 2, for more detail about Preparation for Flight.

**Note:** This checklist is **NOT AT ALL** suitable for use in real world flying. A significant number of required real world checks are omitted here as they are not relevant to the Simulator.

## 1 BEFORE FLIGHT

A successful flight depends very much on thorough preparation. Preparation includes: -

- Personal Preparation

Plan your flight in advance of the trip in a calm, unhurried and thorough manner. Mark the planned route on the chart and calculate bearings and distances for each leg and complete a preliminary pilot's logsheet.. Check that you have all the equipment you need to hand, and settle down for the flight in good time so that all pre-flight checks can be completed without rushing.

Check that you have suitable clothing – a cold pilot will not think clearly, and a busy flight can make you very warm, even sitting at a computer screen!
- Documentation

Do you need a formal Flight Plan? If so (and it is a good policy to adopt for VATSIM), then rehearse it before going on line and having to think it through "on the fly". You can open Squawkbox and enter a Flight Plan without going on line, and save it to disk, so that it can be reloaded before the flight.

A Pilots Logsheet should be used for every flight, as a means of keeping a check on your current position, distance to run fuel endurance etc.

You cannot fly safely without a map. (In the real flying world, it is illegal to fly without the **current issue** of the chart covering your flight.
- Preparing the Aircraft

Which aircraft are you going to fly? Are you fully familiar with its handling characteristics, and "vital statistics" – stall speed, cruise speed, engine rpm settings etc. What is you call sign? Rehearse saying it phonetically to reduce the stress of talking to Air Traffic Control.

Set the Direction Indicator to coordinate with the Compass (press "D" on the keyboard. Once connected to Vatsim, set the local QNH by pressing the "B" key on the keyboard.
- Crash Detection

If you are flying alone, or offline in multiplayer peer to peer mode with a friend, the set Flight Simulator Crash Detection ON for better realism. You then need to give buildings and other obstacles a wide berth as well as make sure your landing technique is up to scratch.

However, if you are flying on VATSIM or IVAO, you should turn Crash Detection OFF. This is because if you are parked on a designated parking spot listed in FS, another VATSIM player joining the session could choose the self-same spot, with the result that you will both "crash" and have to restart the flight..

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## 2 PRE-FLIGHT CHECKS

In Flight Simulator the detailed walk-round pre-flight check carried out in the Real World is superfluous, but there are several sets of checks which remain essential. They mimic the real world checks, though the obviously pointless checks (seat belts tight for instance) have been omitted. However, if you are one of those people (we won't tell anyone) who enjoys being strapped down in – go ahead anyway and check their tightness!

### 2.1 FS Aircraft Realism Setup

- Gyroscopic Precession (Gyro Drift) ticked ON (for realism)
- Aircraft performance set to maximum realism
- Auto-coordination ticked ON if you have no rudder pedals, or OFF if you do have rudder pedals.
- Check that you know the name of each gauge and control, and what it does.

### 2.2 Before Start-up.

- VATSIM ATIS read and understood – runway in use, QNH and surface wind direction and speed ascertained.
- En route weather forecast obtained if possible. (Check what it is doing in the real world, as VATSIM uses real world weather).
- Identify the radio frequencies to be used with VATSIM.
- Flying controls respond and in the correct sense. (*“Disable yoke” not ticked in FS or the USB plug disconnected*).
- Altimeter Set to QNH? (Press ‘B’ on the keyboard).
- Set the elevator trim to the take off position marked “T/O” alongside the trim wheel approximately one notch below the centre.

### 2.3 Engine Start.

- Parking Brake set ON (Press the ‘full-stop’ [US ‘period’] key).
- Fuel ON
- Mixture lever set to rich (Red knob on the right of the lower panel pushed in)
- Master switch ON (Red split switch to right of ignition keyswitch.)
- Engage starter (either click the ignition switch 4 times until it moves to “Start”, or key Ctrl-E.
- Immediately after start check oil pressure rising, otherwise shut down immediately.
- Check ignition switch has returned to the “Both” position.

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- h) Check that the engine responds to your yoke or joystick throttle control input correctly.
- i) Set r.p.m. to 1200 for engine warm up and whenever stationary.

#### 2.4 After Start Power checks.

- a) Allow oil temperature to rise to the beginning of the green arc.
- b) Set Parking Brake ON.
- c) Set power to 1800 r.p.m.
- d) Check each magneto in turn Both-Left-Both-Right\_both. Check that a 50 r.p.m. drop is observed when running on one magneto.
- e) Check oil pressure & temperature in the green arc.
- f) Check suction gauge in the green arc.
- g) Carburettor heat ON – check 50 r.p.m drop (FS correctly simulates pitot icing).
- h) Carburettor heat OFF
- i) Close throttle – check engine idle r.p.m. is 600 to 700 and smooth running. Return r.p.m. to 1200.

#### 2.5 Set Radios

- a) Set the necessary radio frequencies on COM 1.
- b) Select additional frequencies on COM 2 is required.
- c) Set the transponder to 7000, the default code for VFR flight in the UK.
- d) Obtain the ATIS broadcast (or text version) from VATSIM
- e) Call for taxi instructions and be prepared to receive departure clearance.

### 3 TAXYING

- a) Check Brakes
- b) Check Flight instruments– especially Direction Indicator, Turn Coordinator and Slip Ball for correct function.
- c) Check Rudder full movement

### 4 VITAL ACTIONS.

(Do these at the hold, and then call “Ready for Departure”.) These checks may be memorised with the mnemonic ‘Tumfughuccl’ (TMMFFGGHHCL).

- a) **T**rim set for take off (marked T/O next to the trim wheel). Use dedicated yoke trim buttons, the mouse or the Numeric keypad “1” and “7” to adjust.
- b) **M**ixture lever set to fully rich (Red knob pushed in towards the instrument panel, or mixture lever on yoke, or key Ctrl-F4).

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- c) **Magnetos** (Ignition switch) on “Both”
- d) **Fuel** ON and sufficient for the flight – check fuel gauges.
- e) **Flaps** set for take-off (normally UP)
- f) **Gauges** all operating and displaying sensible values. Set the Altimeter to QNH or QFE as required. (Press the ‘B’ key for QNH. To set QFE, click the Altimeter’s Kohlsman knob to set Altimeter to zero.
- g) **Gyro** instruments all functioning particularly the Direction Indicator – synchronise it with the compass heading by pressing the ‘D’ key).
- h) **Hatches** (You can open and close the doors of the aircraft in FS by pressing Shift-E)
- i) **Harnesses** (Are you strapped to your desk?)
- j) **Controls** full and free movement. If you use a joystick, yoke or pedals, waggle them in all axes a couple of times to make sure that the calibration hasn’t been altered or the USB plug pulled out of the PC.
- k) **Lookout** for other aircraft on final approach before moving onto the runway. (Do not rely on ATC telling you there is someone on final). Press ‘W’ key for a better view without the instrument panel. Press ‘W’ again to restore panel.

## 5 AFTER TAKE OFF

These also should be checked after a missed approach. This one is memorised.

- l) Flaps Up if necessary, only when higher than 300 feet above aerodrome level.
- m) Check Engine r.p.m. is maximum
- n) Check Engine temperatures and pressures
- o) Taxi/landing light(s) as required

## 6 IN FLIGHT

The ‘FREDA’ check which should be carried out every 10 minutes or when passing a planned waypoint). This one is memorised.

- a) **Fuel** (tank contents)
- b) **Radios** – frequencies; transponder
- c) **Engine** - check temperatures and pressures
- d) **Direction Indicator** synchronise (Press the D key)
- e) **Altimeter** check QNH (press the B key) and adjust aircraft altitude as required.

## 7 PRE-LANDING CHECKS

Known as ‘Bumfitch’ (BUMFCH) This one is memorised

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- a) **B**rakes – check operative. Parking brake OFF
- b) **U**ndercarriage down and locked (say the word ‘Undercarriage’ even in a fixed-gear aircraft)
- c) **M**ixture fully rich
- d) **F**uel set both tanks (usually in a C172) or fullest tank
- e) **C**arburettor heat ON (not fitted to the FS C172SP)
- f) **H**arnesses (still strapped to your desk?) secure

## 8 AFTER FLIGHT

- a) Parking Brake ON (Ctrl –“.”)
- b) Set power to 1200 r.p.m.
- c) Flaps raised
- d) Magneto check (both-left-both-right-both) check 50 r.p.m. drop on one magneto
- e) Mixture fully lean to stop engine. Pull red knob out with mouse, or mixture lever on yoke, or key Ctrl-F1.
- f) Lights OFF
- g) Avionics master switch OFF
- h) Ignition switch to OFF (3 mouse clicks)
- i) Master switch to OFF (both halves)
- j) Fuel OFF (if possible – some aircraft don’t have a fuel valve in FS).
- k) If desired, save your position as a “Flight” (the older versions of FS used the word “Situation” which is more accurate). Press the semicolon ( ; ) key and enter the details of your location, e.g. “Biggin Hill Apron”, and tick the “Save as Default Flight” tick box if you want to start from this position for your next flight. (This is of course normally the most realistic option, but you can always get the train to somewhere else – virtually of course.)

## 9 FILE A PILOT REPORT

In Cix VFR Club, we very much encourage members to file a Pilot Report (PIREP) after every qualifying flight (see Club Rules). There are links to the PIREP form on the Forum and on the Website Main Menu.

**Note:** Student Pilots can file flight reports for training flights flown offline with an instructor. Solo offline flights cannot be filed.