M - CHECK LISTS

Check lists are a vital part of the preparation for flight. A significant proportion of accidents are due to checks being improperly done – often due to distraction. Consider making the rigging area and launch area a sterile area whilst checks are being done.

Checklists/ drills and procedures only work if pilots use them. They are even more effective said out loud. The "point and say" technique is surprisingly effective. When you say, for example, the recovery airspeed, put your finger on it on the ASI.

Pre-Flight Walkaround Checks ABCDE

Airframe - Look for anything unusual or that may have happened since the DI. Include: soft tyres, damaged trailing edges, or control surfaces etc.

Ballast- before getting in check the ballast. Fit or remove ballast as appropriate. Remember the possibility of tail ballast.

Controls- Check that the controls move in the correct sense. Check all required equipment present/fitted especially back rests etc.

Dolly - Check the tail and wing dollies have been removed.

Environment - Change in wind, weather, potential obstruction, or interruptions to launching.

Pre-Take-off Checks CB SIFT BEC

Controls - Once **both** pilots are strapped in, move each individual control slowly and smoothly to the limit of its travel, to check full and free movement.

Ballast - Check that the glider will be flown within the placarded weight limits. (For early solo or conversion flights ensure the pilot(s) are at least 13kg/30lbs over it.)

Check should also include water ballast if appropriate; is the CoG still within limits? Is the glider within other loading limitations?

Straps - Ensure lap strap is over the pelvis and as tight as possible and shoulder straps are pulled down. Check for a 5th strap. The trainee's check should include checking the rear seat pilot is properly strapped in.

Instruments - Check set the instruments to zero or as appropriate. Check they are reading correctly and that the glass faces are not cracked or broken.

Check the correct operation of any electrically powered instruments and on as required. Check radio on as required to correct frequency.

Encourage the trainee to always make a mental note of the panel position of critical instruments like the ASI so that they can identify them quickly in the event of a launch failure.

Flaps - Identify whether fitted. If fitted, set for take-off.

Trim - When setting the trim, take account of the type of launch and conditions.

For a winch launch the trim lever should be set for approach speed - usually a little forward of neutral. Further forward in strong wind conditions.

For aerotow, set for anticipated aerotow speed. These initial settings can only be estimates of what is required, so re-trimming may be necessary later.

Discourage trainees in the early stages of training from trying to re-trim shortly after take-off as this can lead to Pilot Induced Oscillations.

Brakes - Checked on both sides, above and below the wing making sure they close together. Locking is critical make sure the over-centre lock is engaged.

Eventualities

As a minimum:

- Hand on the yellow knob to release immediately if the pilot is unable to keep the wings level.
- Procedure in the event of a launch failure – in particular, the brief to lower the nose to the recovery attitude and wait for the nominated speed
- A look round for any last interruptions or potential complications to the launch (wind changes/personnel in the launch area etc

It is NOT the time for a re-brief, so keep it short and to the point.

Canopy

Canopy closed and locked including a physical check with upward pressure on the canopy frame. Close the DV panels before take-off. In a two-seater both pilots should verbally confirm that their '*canopy is closed and locked.'*

HASSELL checks

Any manoeuvre likely to result in a rapid and significant change of height - deliberate or inadvertent - should be preceded by a HASSELL check. This check applies to aerobatic manoeuvres such as spins and loops, as well as stalls and demonstrations of reduced 'G.'

Height

Make allowance for the. total height from start to the lowest point of manoeuvre and allowing for height at the end point of recovery sufficient for return to the airfield. Be aware of the height of local terrain at the point of the manoeuvre.

Airframe - Check that the glider is certified for the intended manoeuvres.

Maximum airframe G loading should be noted and the accelerometer reset.

Nominate the values of the manoeuvring (V_A) and never exceed (V_{NE}) speeds.

If the undercarriage is retractable, check that it is up.

Straps - Make sure that all the straps are fitted into the buckle, and still tight.

Security - Check the cockpit to ensure that no loose articles can fly around and damage either the glider or the pilots. This check is best done before take-off so that likely 'flying objects' can be removed. Make a second check in the air.

Engine if applicable

T's and P's good and carburettor heat appropriately set for lowest anticipated height.

For retractable engine sailplanes: if down, check doors closed if engine shut down.

Location - Ensure the glider is: not over a town or active airfield (without appropriate permission) or in controlled airspace.

Lookout - Execute two well banked clearing turns in each direction, to ensure a thorough check that the airspace is clear of other traffic and will remain so long enough for the manoeuvre(s) to be completed. Using 'S' turns signals to other gliders that you are NOT thermalling and that they should steer clear because you are about to do something unusual)

Check beyond the immediate area in anticipation of potential traffic flying into your 'manoeuvring zone.' Look above and below. Repeat it frequently during any extended series of manoeuvres.

Pre-circuit Checks WULF

WULF is the recommended pre-circuit (rather than 'downwind') check. The pilot is better off flying the glider correctly, in the right place, and looking out during the circuit.

Water – dumped (In good time.)

Undercarriage - down and locked (Look at the lever.)

Loose articles - this includes the pilot i.e. tighten the straps

Flaps - if fitted, set appropriately. They may need adjusting later in the circuit. Avoid adjusting the settings while turning onto the final approach.

ADVICE TO INSTRUCTORS

Pay attention to the trainee's conduct of the Pre-Take off checks and to the glider. If distracted for any reason, ask the trainee to begin the check again and/or do the check yourself to focus yourself.

At some clubs, the person attaching the cable asks; *Airbrakes closed and locked?* and requires a positive response from the pilot before putting the ring anywhere near the hook. At other clubs ground crew are briefed to look and listen for canopy and brakes being locked and query with the pilot if in doubt – to make the query the exception not the rule. Such a double check does not remove from the pilot the responsibility for the safe conduct of the flight.

Allow sufficient time for the trainee to run through the check list. The first few times may be a long, drawn-out affair and you need to allow for that. Pressure from other pilots waiting to launch behind you must be avoided. If necessary, pull your glider off the launch grid for a while.

In most cases it is possible to do some of the HASSLL check while still on the ground or during the late stages of an aerotow, leaving only Height, Location and Lookout to be done after the launch.

COMMON DIFFICULTIES

In the early stages trainees have difficulty remembering the check list letters, never mind their meaning. Encourage them to learn the lists by heart before their next flight.

Due to the added workload of flying the glider, trainees can waste considerable time and height trying to recall a check list in the air.

Working through check lists becomes habitual and potentially boring for trainee and instructor alike. It is all too easy for trainees to forget why the check is being done; they may remember the list but not necessarily what it means. It is also all too easy for the instructor's concentration to wander, wearily, as the familiar litany is recited for the umpteenth time.

As solo pilots become more experienced, they speed up the checks, sometimes so much that little remains except a quick stir of the stick round the cockpit. This is one with potentially dangerous consequences. Make sure the checks are done properly.

