



Know your Mnemonics!

In aviation we have a number of 'mnemonics' that we use to help us to remember checks or actions. This handout is intended to help you remember some of the more common ones. This in no way replaces aircraft or operator specific checklists or routines that you will come across in your flying career.

Vital Actions: are the checks we all do prior to committing to a flight. In UL it is quite nice to use the WWII basic system (modified to suit our needs), since the complexity of aircraft of early WWII and the UL of today are quite similar! They are sometimes called TFGMHCS – here at WAASPS we found that the same mnemonic can be used prior to start-up as well!

		Pre-Start up check	Vital Action or power checks
T's	Throttle	Check throttle throw and then ensure that throttle is back and then just cracked open	Is the throttle responding correctly and smoothly, are you on, and do you know the correct power setting (for warming up, engine checks, etc, etc)
	Trims	Check Trim movement is free and set neutral.	Make sure that the trim is in neutral position for take off.
	Temps	Think about whether the engine is a hot or cold start. If cold start set choke, prime if necessary. If hot, there will be normally be no need to prime nor any need for starter.	Are the temperatures rising and (or moving towards) acceptable limits. Do not start a take off run until minimum operating temperatures are met (if none set wait at least 4 minutes before takeoff).
F's	Fuel	Is there enough fuel for the flight and is the fuel switched on?	Is there enough fuel for the flight and is the fuel switched on?
	Flaps	Check that the flaps function fully and symmetrically, and are off for start up.	Set the flaps for take off, ensuring that they are deployed evenly
	Full and Free	Move the controls in all directions – ensuring that they move without excessive friction in the correct sense and that there is no impediment to the full movement	Move the controls in all directions – ensuring that they move without excessive friction in the correct sense and that there is no impediment to the full movement
G's	Gyros	If Gyros are fitted ensure that they are locked if necessary	If Gyros are fitted ensure that they are locked if necessary
	Gauges	Check all gauges appear normal and have no cracked glasses or other obvious problems prior to start up.	Check all gauges are functioning and that readings are within norms. Check that the altimeter is appropriately set.
M's	Mixture	Are you using the correct fuel (or mixture)? If you have a mixture control does it move freely and is it correctly set (rich)?	Are you using the correct fuel (or mixture)? If you have a mixture control is it correctly set (rich)?
	Mags	Check mag switches are off, and only put to on immediately prior to start up	Check mags (L, both, R, both) ensuring that drops are within limits. (Do not carry out a mag check until temps and pressures are in range for the run-up.)
H's	Hatches	Ensure doors and holds are functional and closed and latched	Ensure doors and holds are closed and latched
	Harness	Ensure that all harnesses are functional and that occupants are wearing their harnesses and any unused harnesses are properly stowed.	Ensure that all occupants are wearing their harnesses and any unused harnesses are properly stowed.
C's	Clearance	Do you have clearance from the tower, authorities, etc? Do you need start-up clearance?	Do you have clearance from the tower, authorities, etc? Do you need departure clearance?
	Comms	Is your radio and intercom working? Do you know the frequencies that you may need during your flight?	Is your radio and intercom working?
S's	Safety	Is the area safe to start up in and operate from and have you taken all the necessary precautions prior to start up?	Is the area safe to operate from and have you taken all the necessary precautions prior to this flight?
	Security	Are you pockets empty of any items likely to fall, are all maps and loose objects secured?	Are you pockets empty of any items likely to fall, are all maps and loose objects secured?
If so...		<i>Shout clear prop, wait at least 5 seconds and then start up!</i>	<i>You are ready for departure, knowing that you have carried out proper checks!</i>

6 minute / FREDA checks: During a flight, especially a cross-country navigation, it is always a good idea to carry out 6 minute checks. Basically, you check where you are and how things are going. We do this every 6 minutes because it makes calculations easy! For example, if you are travelling at ground speed of 80km/hr you travel 8km in 6 minutes (10% of one hour) this makes calculations easy.

Fuel	Are you on the correct tank? (if applicable) Is the burn rate consistent with the plan? Is there sufficient fuel for rest of the journey? (If not DEVIATE or return early).
Radio	Is the radio functioning? Are you on the correct frequency? Are you due to report your position or make another radio call, report or request?
Engine	Are the temperatures and pressures (Ts & Ps) within limits?
Direction	Are you heading in the correct direction? (take into account drift, magnetic deviation, etc) Do you know where you are?
Altitude	Are you at the correct altitude or range of altitudes? Are you at an altitude that ensures that you are clear of obstructions (hills, masts, etc)?
Attitude	Is the aircraft attitude (pitch and roll) as it should be for the speed and power setting?
Airframe	Do you have the correct flap/slat/spoiler setting? Are all the airframe bits where they should be?!

HASEL and ABC checks: These checks are carried out prior to aerobatics (which most Ultralights are NOT cleared for) and also for stall/spin training or prior to display work.

Height	Do you have sufficient height to recover safely from the manoeuvre? (Height is the distance between you and the ground, not necessarily altitude, unless the ground below is at sea level) Safe height depends on the aircraft, manoeuvre and pilot skill.
Airframe/ Attitude	Do you have the correct flap/slat/spoiler setting? Is the aircraft in the right attitude prior to commencing the manoeuvre?
Security, Safety and Speed	Are all loose items secured? (especially important if you will be inverted or pulling negative G) Are all harnesses and hatches secured? Do you have the appropriate air speed to enter the manoeuvre?
Engine	Are the temperatures and pressures (Ts & Ps) within limits? If you are going inverted or negative G, is there sufficient reserve in the fuel system for the manoeuvre?
Lookout and Location (ABC)	Do a 360 degree turn and check all around you for other traffic at you current altitude and the altitudes you may pass through – especially below. Check under and above wings. Are you in a suitable location? Unless cleared for display activities in a particular area you should be clear of A erodromes, B uilt-up areas and C ongested Airspace.

Downwind Checks: Before you land it is a good idea to carry out some basic checks, and **BUMFITCH** is the catch word!

B	Brakes off – to avoid somersaults on the ground!
U	Undercarriage in good order (and down if retractable) to avoid a nasty surprise!
M	Mixture (if appropriate) set to rich – to ensure maximum power to the engine
F	Fuel sufficient for a go around – and if not make sure that you land first time – and declare a fuel emergency!
I	Instruments – are they all correctly set (pressure setting on altimeter, etc)
T	Temperatures and pressures – are all in the normal range?
C	Carburettor heat to be applied if available (often to be set off again at point to suit the engine/airframe) Do you have Clearance to land and are your Comms set to the correct frequency
H	Hatches and Harnesses – are all doors and hatches closed, items secure and stowed and passenger and pilot strapped in securely?

TRPACER: When en-route (which if flying out of Kpong on a cross country will be your first radio call to Accra Centre) you will make an initial radio contact such as '**Accra Control this is 9GZKT**' to which they will reply (hopefully) '**9GZKT this is Accra Centre, pass your message**' you will then make your TRPACER call over the radio (and do this again when changing frequencies en-route). You should be ready to give the information required, and request if there is one, in the correct sequence and terminology. The call given here is only an example, of course.

T	aircraft Type	9GZKT is an Ultralight
R	Routing	Routing from Kpong Field to Kumasi
P	Position and heading	Abeam Tafo, heading three zero zero
A	Altitude and altimeter setting	at two thousand five hundred feet on QNH one zero zero niner
C	Conditions	VMC
E	Estimate	Estimate Kumasi at two five*
R	Request	Joining instructions

*We normally give estimates in minutes past the hour, without the hour – therefore your estimated point should ideally be less than 60 minutes away. If you need to give a longer estimate use the twenty-four hour clock terminology

Pre-Pre-flight checks or EEEE: These can all avoid embarrassment...

- Empty bladder (avoid emergency landings for personal reasons!)
- Empty pockets (avoid FOD)
- Empty head of worries and cares (all of your attention on flying is required)
- Everybody signed (Pilot, passenger and/or authorising pilot/engineer/instructor)