



MPD Q&A

All you want to know about the recent Mandatory Permit Directive

From Steve Boxall

What's the MPD all about?

You can read the full text at:

<http://www.caa.co.uk/docs/536/MPD2005-008.pdf>

The MPD essentially implements the research done by Glasgow University, supported by the flight testing undertaken by the CAA, which points to the key characteristic of gyroplane stability being the position of the vertical Centre of Gravity relative to the propeller thrustline.

Which aircraft are affected?

All single-seat aircraft are affected.

The MPD does not affect 2-seat machines.

What is the impact?

Unless your aircraft has been shown to comply with its thrust line within +/-2" of the centre of gravity, then a Vne limitation and wind speed / gust-spread limitations are imposed.

In addition, any non-complying aircraft with a pod can only be flown by a pilot with more than 50 hours of post-qualification experience.

I'm still training / have less than 50 hours since qualification and have an aircraft with a pod – what's the impact?

You can no longer fly your aircraft unless it has been shown to meet the CAA's thrust line / CG position requirements or has been shown by some other means to be stable in all modes of flight.

I have more than 50 hours since qualification and have an aircraft with a pod – what's the impact?

Unless your aircraft has been shown to comply with its thrust line within +/-2" of the centre of gravity, before the next flight you must install a placard limiting the Vne to 70mph and have it signed-off by an inspector.

When you fly you must comply with the wind speed / gust-spread limitations. Your aircraft must also comply with the requirement for a horizon reference if you wish to fly after 24th November 2005.

I have an open-frame machine – what's the impact?

Unless your aircraft has been shown to comply with its thrust line within +/-2" of the centre of gravity; before the next flight you must install a placard limiting the Vne to 70mph and have it signed-off by an inspector.

When you fly you must comply with the wind speed / gust-spread limitations. Your aircraft must also comply with the requirement for a horizon reference if you wish to fly after 24th November 2005. There are no pilot experience limitations, so a student or low-hours pilot can fly the machine.

How do I comply with the requirement for a horizon reference?

This will depend on individual aircraft layouts, but this can be a marked radio antenna, or the top of the instrument panel or screen. The essential element is that the reference is in the normal line of the pilot's sight, so that he/she naturally sees this together with the horizon – and as such is a visual cue to PIO or other oscillation. It is the PFA's responsibility via its Inspectors to agree the requirement for each aircraft.

What is the B.R.A. doing about all this?

The B.R.A. has been working to understand and challenge the rationale, limit the impact of the MPD and to make it as simple as possible for pilots/owners to implement.

So far the B.R.A. has demonstrated a method of measuring the vertical CofG which has been accepted by the CAA, test-measured a number of machines, and has arranged for a number of sets of measuring equipment to be distributed around the country.

The next step will be to work with the CAA to identify if any mods can be made with minimal impact to aircraft (eg thick seat-cushions, ballast) which will allow them to be compliant.

We will also be working with the CAA to establish at exactly what CG / thrust line position the aircraft becomes unstable, which may extend the permissible limits, following their agreement to continue with further test flight evaluation.

Why doesn't the BRA fight the MPD?

Quite simply because we don't believe that we could win. The B.R.A. has very limited resources, both financially and in volunteers' time.

The CAA is adamant that the MPD will be implemented - we believe that our members are better served by us engaging with the CAA to understand their position, find a mutual solution where possible, & soften the impact of the MPD - rather than in a futile struggle to stop the unstoppable.

Evidence gathered from history shows that Bensen and Cierva also considered the CG/thrust line coincident relationship very important.

What have the PFA done?

The PFA are the CAA's agents for implementing and administering this MPD. Unfortunately gyroplanes represent only a very small proportion of the PFA fleet, and as such the time available for us tends to be limited.

They are trying to establish a standard way forward for each generic type of gyro by working with the manufacturers & designers, but if we are to pass this CAA milestone, then we have to work together and give them solutions rather than problems – especially as our gyros are very varied in build.

The B.R.A. has & will assist wherever practical to support our members.

I don't have any faith in the University of Glasgow results

Most people in the gyro world, including the CAA, are of the opinion that there's more to stability than just the thrust line / CG relationship. Rotors, horizontal stabilisers etc all probably have a part to play.

The CAA will accept satisfactory flight testing as an alternative method of demonstrating compliance with the MPD, so if your aircraft really is stable but doesn't meet the Glasgow thrust-line / CG criteria, then you should agree a suitable flight test program with the CAA to demonstrate this.

Steve Boxall