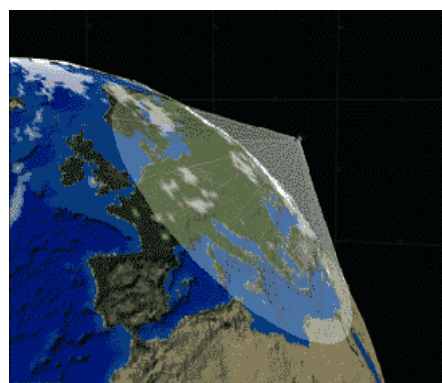
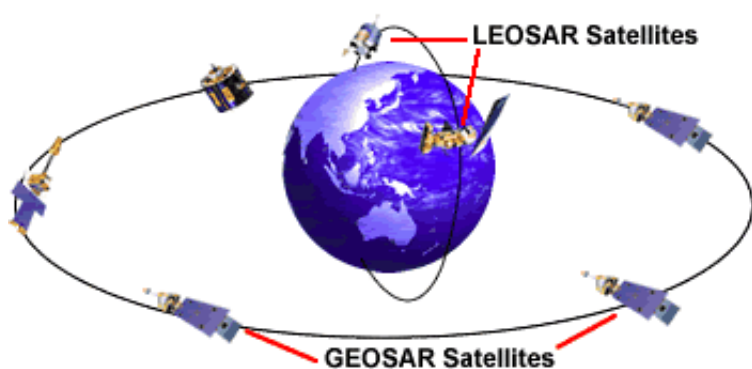


## The 406MHz Personal Locator Beacons (PLB)

It is always wise after the event, the current event is the mandatory carriage of a 406MHz PLB for all gliders and microlights that fly in excess of 10nm of their aerodrome. If you stay within 10nm, you are strongly advised to still carry a 406MHz PLB. If you have more than two seats, you are required to install a fixed automatic 406MHz Emergency Locator Transmitter (ELT). These CAA rules come into affect on the 1 July 2008.

**OPTIONS:** The options for the PLB's are with or without an integrated GPS. If fitted with the GPS, the signal that is transmitted is added to the unique hexadecimal number that is transmitted to the satellites by the 406MHz PLB.

There are two sets of satellites, one of which of the geo-stationary satellite system that sits 35000km above the equator continuously monitors the NZ and surrounding areas. Additionally, there are six lower orbiting satellites that go pole to pole so thereby cover 100% of the surface over time as the earth rotates. These satellites only pick up the 406MHz signal but a few are also still picking up 121.5MHz. The 121.5MHz receiving terminates in early 2009.



LEOSAR image of coverage

So what do you need to meet the new CAA rules? The two main PLB brands in the aviation market appear to be GME and Kannad. Both have introduced low cost PLB's. GME is a relative newcomer to the 406MHz PLB market and Kannad were one of the first companies to obtain Cospas-Sarsat approvals over twenty years ago. GME offer two styles of 406MHz PLB's, a non GPS version the MT410 at \$550.00 and the GPS version MT410G at \$750.00. The KANNAD new XS3G is only available in the GPS option as European demand is 80% for the GPS requirement. This retails for \$899.00 but there is a \$49.00 rebate at the moment that brings the price down to \$850.00 so a good price. You really need to see them side by side to see the value however the Kannad gives the distinct impression that it is more robust in its construction and appears to be worth the extra price tag. At the same time if you want something to just meet the rule then the MT410 at \$550.00 delivered cannot be beaten price-wise. All these models are approved

### ISSUES:

The 406MHz PLB with the GPS option will alert Search and Rescue within 10 minutes of who and where you are if you have a clear line of site to the GEOSAR satellite. Your position is determined by the GPS coordinates transmitted by the PLB. If you are down in a gully or have a mountain in front (North) of you then it is likely that the GEO satellite will be obscured so you will need to rely on the LEOSAR satellites. This will normally take more time as obviously these satellites are not on a fixed time schedule to be overhead when you need them. These satellites are only 900Km above the earth and travelling at 7000 metres per second. They traverse the world each 105 minutes. Accordingly the time delay can be between an immediate alert and maybe 90 minutes in the worst case scenario. This may not be a major issue if you have filed a flight plan or someone knows when to expect you as all these new 406MHz PLB's also transmit

on the 121.5MHz homing signal. This will allow search aircraft to home in on this signal using standard Radio Direction Finding equipment (RDF).

If you chose to purchase a PLB without the integrated GPS, then you are reliant on the LEO satellites to obtain a positional fix however if the GEOSAR satellite can see you we will know who you are but not where you are until the LEOSAR satellite travels overhead to obtain your position by a Doppler affect.

## SUMMARY

The PLB with the GPS integrated is the best unit to enhance the quickest rescue. The 406MHz units without the GPS meet the rule requirements. Accordingly it is your call but remember the saying about being up to your arse in alligators only to find that the first objective was to drain the swamp- What are your objectives, to meet the rule or give yourself the best chance of survival ?

For more info there is a very good website [www.aviationsafety.co.nz](http://www.aviationsafety.co.nz)

Kannad XS3 GPS 132 x 88 x 45 mm and 295 grams

GME MT410GPS 135 x 71 x 38 mm and 250 grams

