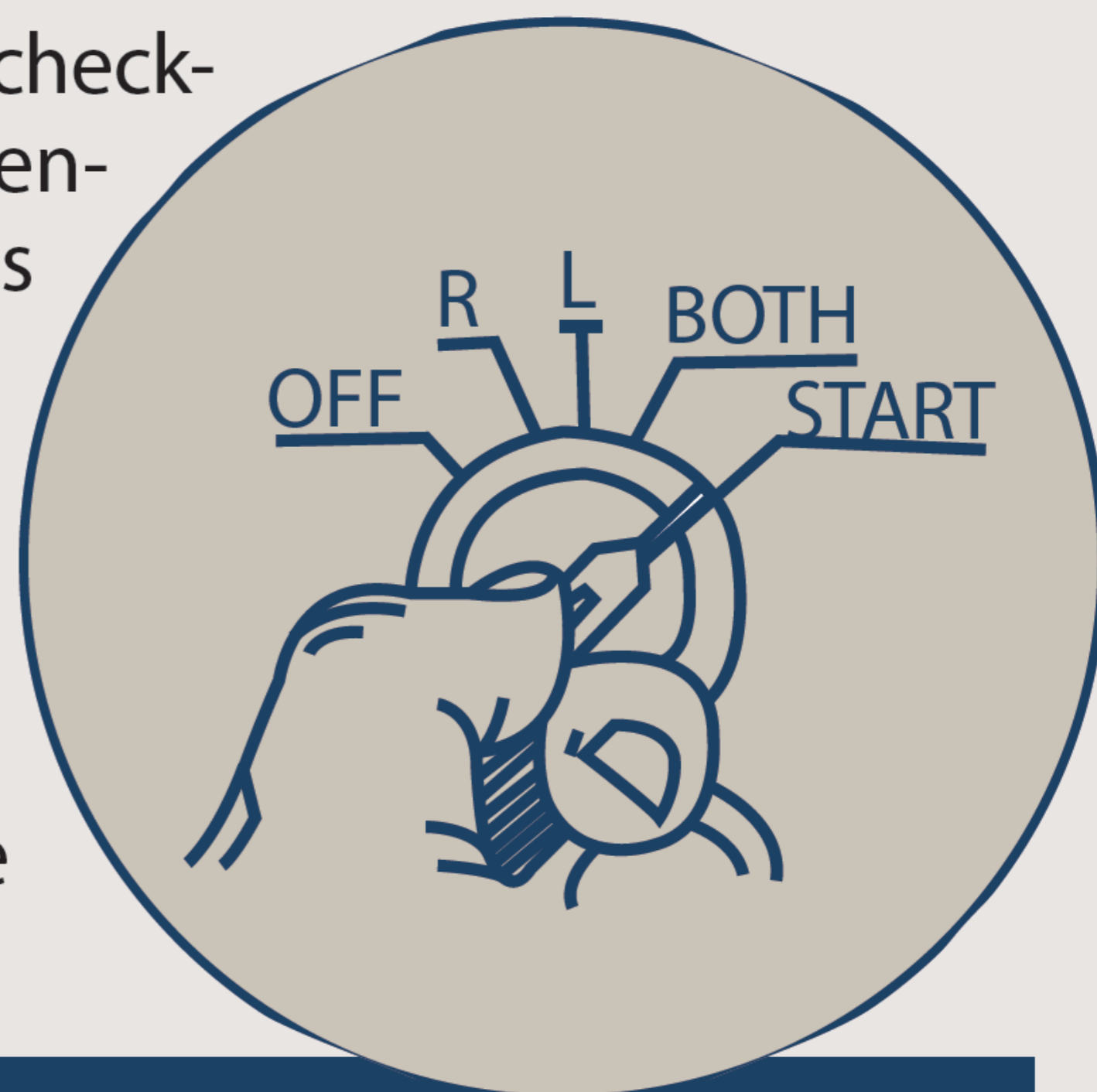


Extreme Mag Checks

The typical mag check dictated by the pre-takeoff checklist and performed during a run up is essential to ensuring both mags, their associated wiring harness and the spark plugs are operating correctly. But the medium power settings specified don't put much stress on the ignition system, leading to the possibility something still might be amiss, but hidden. A high-power, airborne mag check performed on a regular basis can help identify problems before they ground you. Here's how to perform one.



1. ESTABLISH HIGH-POWER CRUISE

Once at altitude, establish your normal cruise power setting. We're thinking at least 65-percent power, more if it's available and safe to use. Ideally, you'll be on autopilot or a safety pilot can help by scanning for traffic.

2. CHECK A MAG

Using the magneto switch, change to a single mag for 5-10 seconds. If everything's running well, you should notice a slight drop in power and uniformly increasing EGTs on an engine monitor. Worst case, of course, is the engine quits, which means you were running on only one mag (see below). More typical would be increasing EGTs on all but one or two cylinders, which would show decreasing EGT. If you see this, you've got a bad plug or harness.

3. CHECK THE OTHER ONE

Return the magneto switch to the both position, then wait a few seconds for EGTs to return to normal. Repeat the procedure in item 2, above. If you see a uniform increase in EGTs, your ignition system passed the test. Return the magneto switch to both and enjoy your flight.

4. PROBLEM? DON'T SWITCH BACK TO BOTH

If the engine quits when you switch to one mag, that mag or its harness has failed. Despite the temptation, DO NOT immediately return the mag switch to BOTH—doing so risks a potentially damaging backfire from the fuel accumulated in the exhaust. Instead, reduce the throttle setting to near-idle, then switch back to BOTH. Smoothly increase power back to your cruise setting and begin planning your divert to a maintenance facility.

5. DO IT LEAN OF PEAK EGT

Performing an in-flight mag check while running lean of peak EGT puts the most "stress" on the ignition system, thanks in part to the leaner fuel/air mixture, which is more difficult to ignite.