

Flying at 40°C: hot for the pilot ... but even more so for the engine



With the heat waves more and more frequent and hot, we are called to fly more often than before in very hot weather. The mercury has reached 40°C recently on the Sud Bank and probably elsewhere. We have published a [column](#) on the performance issues of your aircraft in hot weather and the need to do your calculations well to make sure you have enough runway to take off and to be able to overcome obstacles on your way. The emphasis is on the importance of doing your calculations taking into account all the factors before putting the throttles. For example, the slope of the runway may not be of much importance in normal times, alone in your plane at 15°C. But at 40°C, with your two healthy brothers-in-law on board, it could be different. So, take out your calculators!

But what about the engine in your flight plan? Flying in hot weather without adjustment to your steering could well cost you a new engine..... or much more, depending on the result of your forced landing. Did you think about your engine in your flight plan? Are you planning a V_x rate climb from your start to 5,500 feet? Such a plan, with 40°C of temperature, looks a lot like a planned overheating and you might well see your engine temperature indicator quickly heading into the red. And with any concentration on your other instruments, this situation of overheating may go unnoticed; until your engine reminds you of this. It is easy to forget that the cooling of the engine decreases with the mounting angle. In periods of great heat, it is important not to maintain a pitched-up climb with full power for too long. It is necessary to take the time to lower the nose and take a cruising speed to allow the engine to cool down.

The same goes with the impoverishment of your mixture. Managing your mixture in periods of high heat is more delicate than in normal times. A mixture that is too lean can destroy your engine in less than a minute. One minute, it doesn't leave you much time to react. For example, forgetting to enrich your mixture during the descent could cause detonations and seriously damage the engine.

So, to avoid damaging or outright destroying your engine, especially in periods of high heat, here are some good practices to follow:

- Be aware before leaving of the increased possibility of overheating you will be more vigilant;
- Keep an eye on the temperature of your engine whether it is your general indicator, but preferably your IGT if you have one.
- Plan your climb to ensure proper engine cooling;
- Avoid full power use for an extended period of time
- Pay special attention to the management of your mix. It is important not to forget to readjust your mixture before or during your descent.

These practices are recommended at all times, but in very hot weather, are absolutely essential. So avoid overheating your engine and wallet; follow these practices. Good flight.