ALPHA Trainer is a great training aircraft. It trains modern pilots to fly higher performing, aerodynamically efficient light aircraft of tomorrow. Therefore the normal flying technique for flying a higher drag aircraft must be modified somewhat. In Pipistrel Academy system we had noticed that there are two common errors in flying the ALPHA Trainer

- ## ERROR 1 – ALTITUDE INCREASE AFTER LEVELLING OUT

Most pilots transitioning to the ALPHA Trainer fail in properly levelling out after climb. The resulting error is a slow, but constant altitude gain. This can sometimes result in violation of airspace above (terminals for example).

The reason for this is that most classical high drag aircraft increase airspeed only little after levelling out from climb. The ALPHA Trainer accelerates a lot and requires more attention during this phase.

The usual error path is this: The ALPHA Trainer climbs at 5500 RPM and 140 km/h IAS. After reaching the assigned altitude, the pilot levels the aircraft, pulls the power back to typically 4800 or 5000 RPM and applies trim. This works on classical aircraft, but not on the modern ALPHA Trainer.

What actually happens next is that the aircraft accelerates. So it gains at least 30 km/h IAS more. With this, the RPM increase and if the trim is not applied more the aircraft will start climbing. (see figure 1)

The pilot notices this by his altitude constantly increasing.

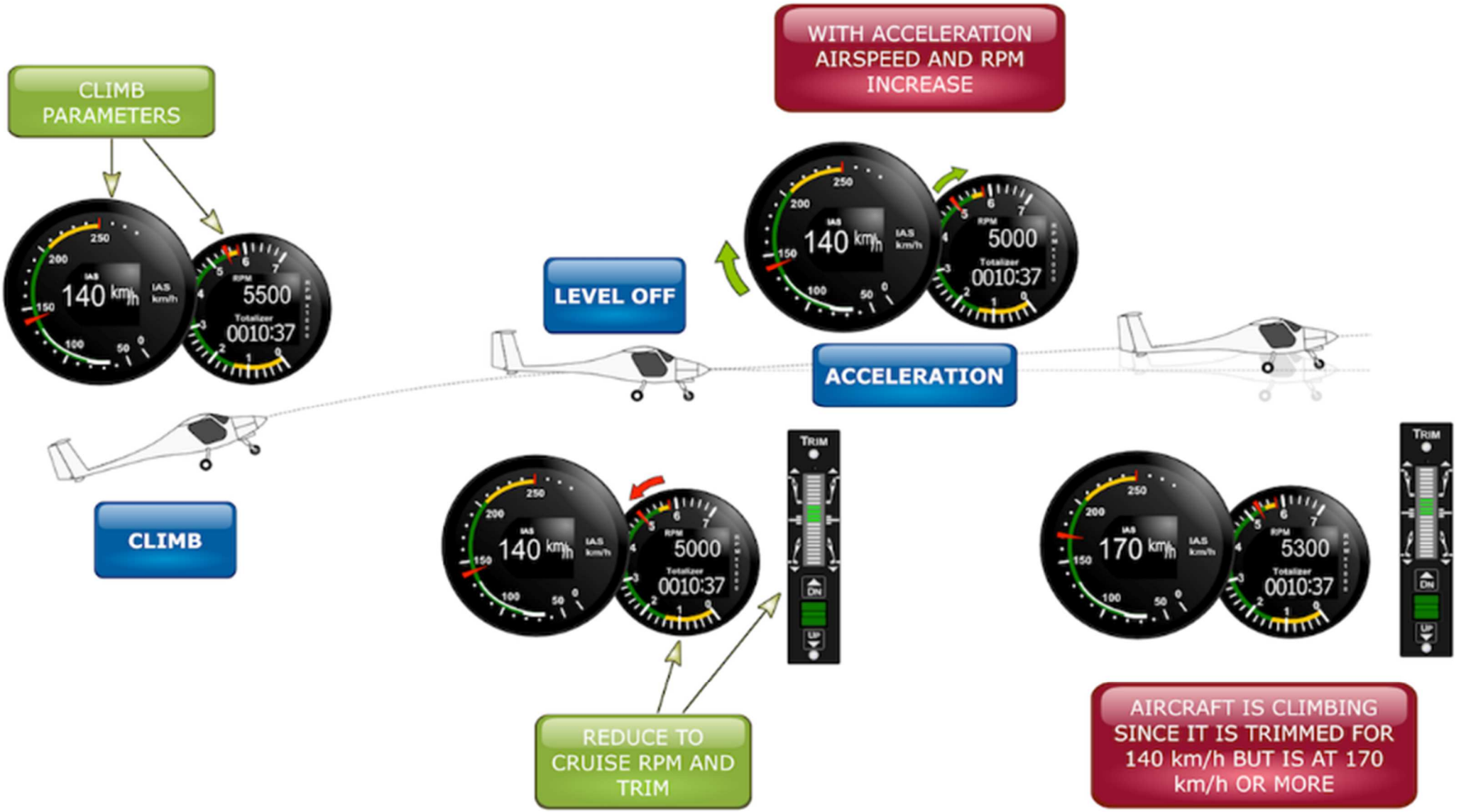

CLIMB PARAMETERS
WITH ACCELERATION AIRSPEED AND RPM INCREASE
LEVEL OFF
ACCELERATION
CLIMB
REDUCE TO CRUISE RPM AND TRIM
AIRCRAFT IS CLIMBING SINCE IT IS TRIMMED FOR 140 km/h BUT IS AT 170 km/h OR MORE
140 km/h
5500
5000
5300
170 km/h
0010:37
TRIM

Figure 1 – Altitude gain due to acceleration

IF YOU <u>NOTICE</u> THIS - THE CORRECTIVE ACTION IS:

- reduce power to cruise RPM and also reduce pitch
- After the IAS stabilizes finely trim the aircraft - in most ALPHA Trainers cruise trim is 60% of nose down trim (one or two orange lines).

Figure 2 – Corrective action

TO PREVENT THIS - THE PREVENTIVE ACTION IS:

Accelerate with climb power to cruise airspeed. During acceleration concentrate on **maintaining altitude**. Reduce power to cruise power when you reach about 170 km/h. Then trim the airplane.

Figure 3 – Preventing altitude gain due to acceleration

- **ERROR 2 – APPROACH PROFILE TOO LOW**

All of the pilots flying the ALPHA Trainer quickly realise that the approach to landing must be relatively flat, since the aircraft does not produce a lot of drag. At Pipistrel Academy we recommend flying the traffic pattern at 500 ft AGL, going to idle power at abeam touch-down and maintaining 90 km/h IAS on final. For more information see the ALPHA Trainer UL course at pipistrel-online.com

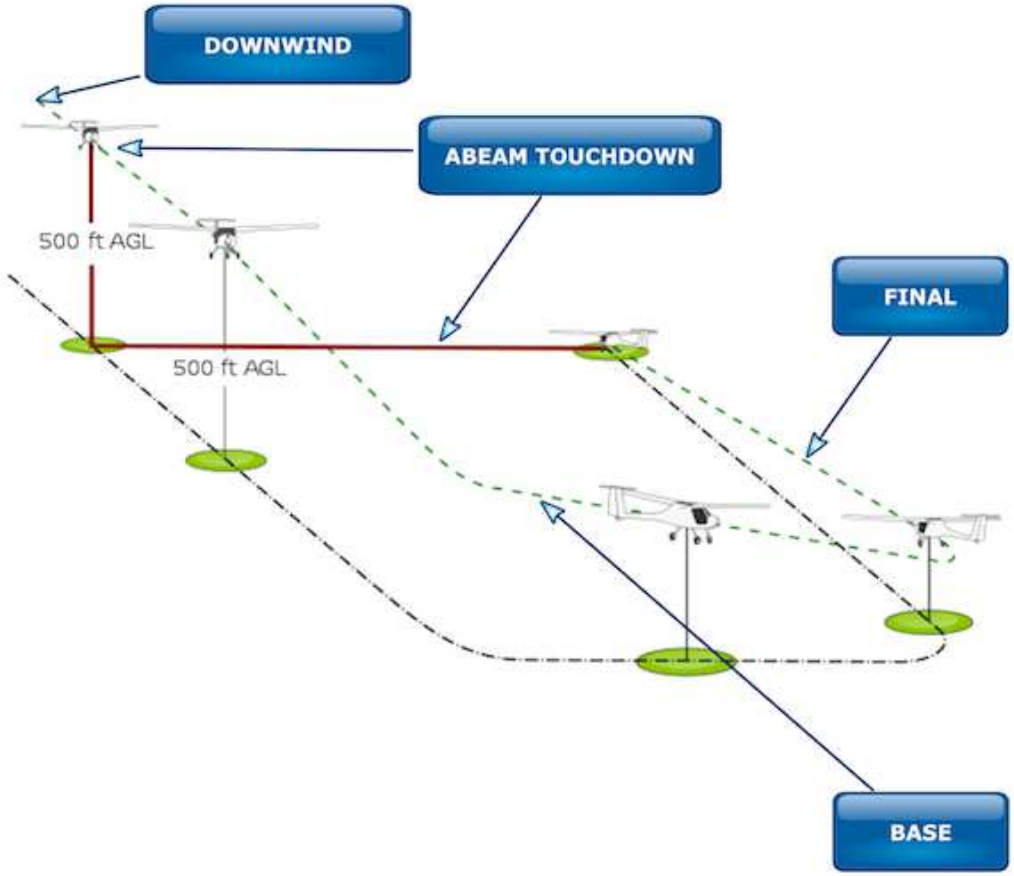


Figure 4 – Normal approach

A common error is to descend with higher speed then 90 km/h IAS to lower level and then fly the last part of the final at very low altitude while slowing down. The reasoning for this error is that pilots would like to *avoid* being *too high*.

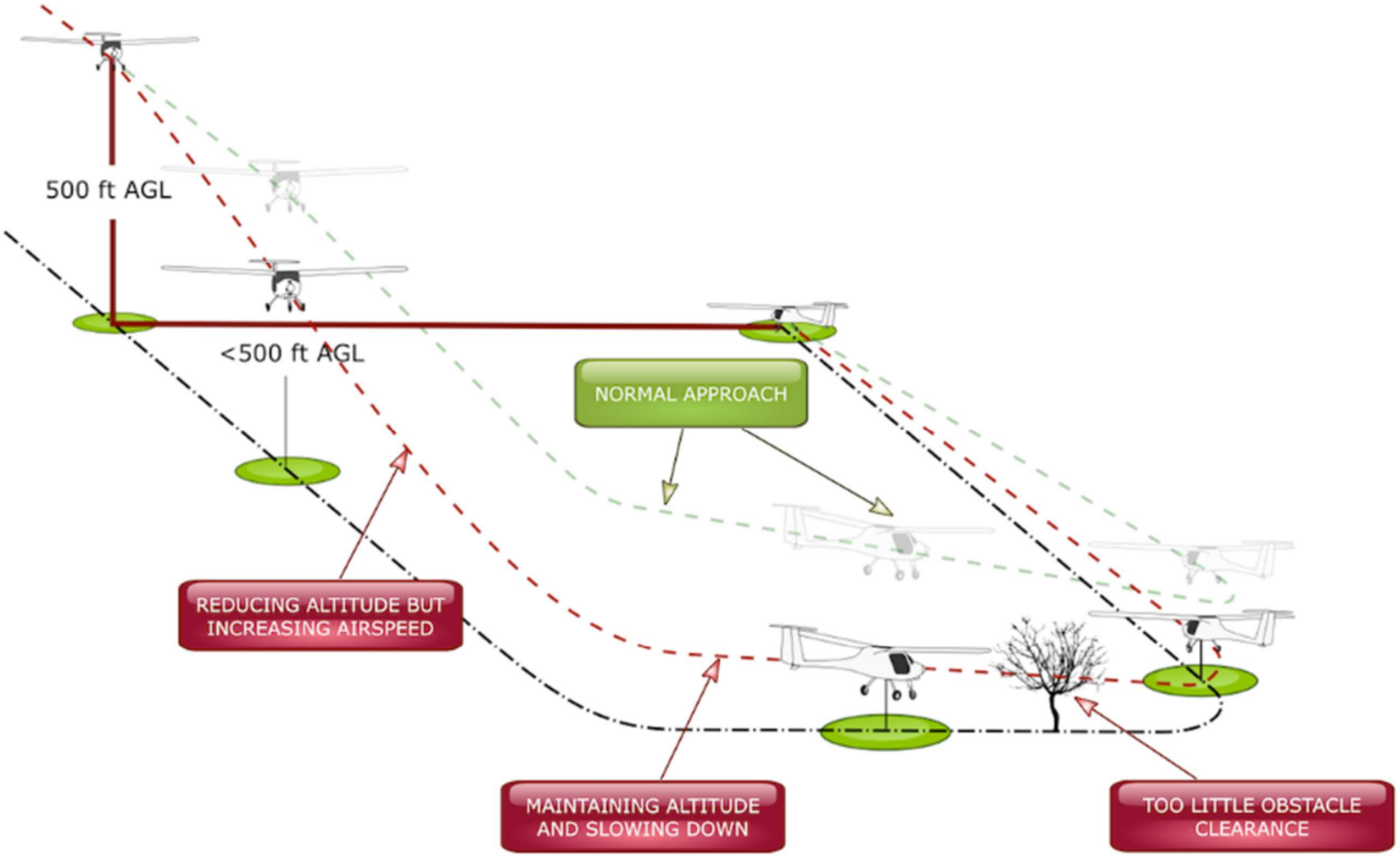


Figure 4 – Approach profile too low

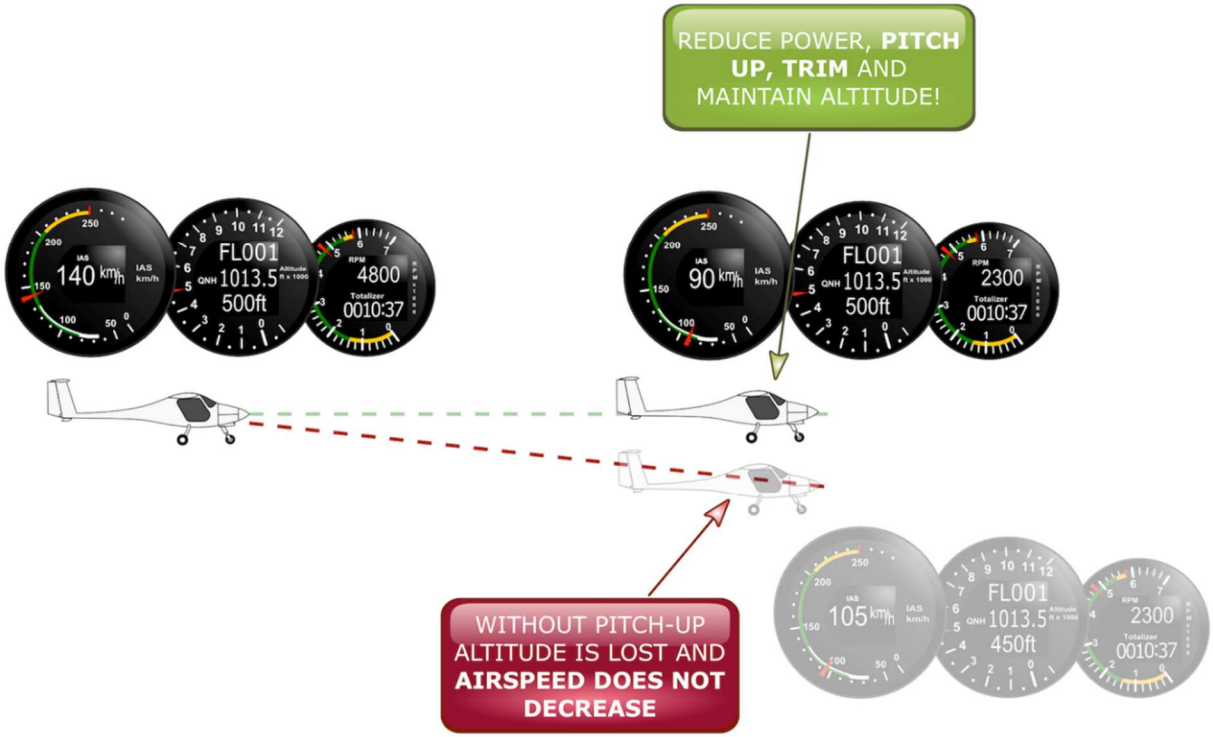
However safety is decreased, since during the last part of the final there is not as much terrain clearance as if the approach is flown normally.

IF YOU NOTICE THIS - THE CORRECTIVE ACTION IS:

Gain altitude! With this you will also slow down and re-establish the correct approach profile.

TO PREVENT THIS - THE PREVENTIVE ACTION IS:

Instead of diving from altitude and then slowing down at low level on final, you must slow down the aircraft first on downwind and approach with a constant rate of descent.



If the approach is not working out and you are gaining airspeed while maintaining the aiming point, **go around** and make a broader traffic pattern.