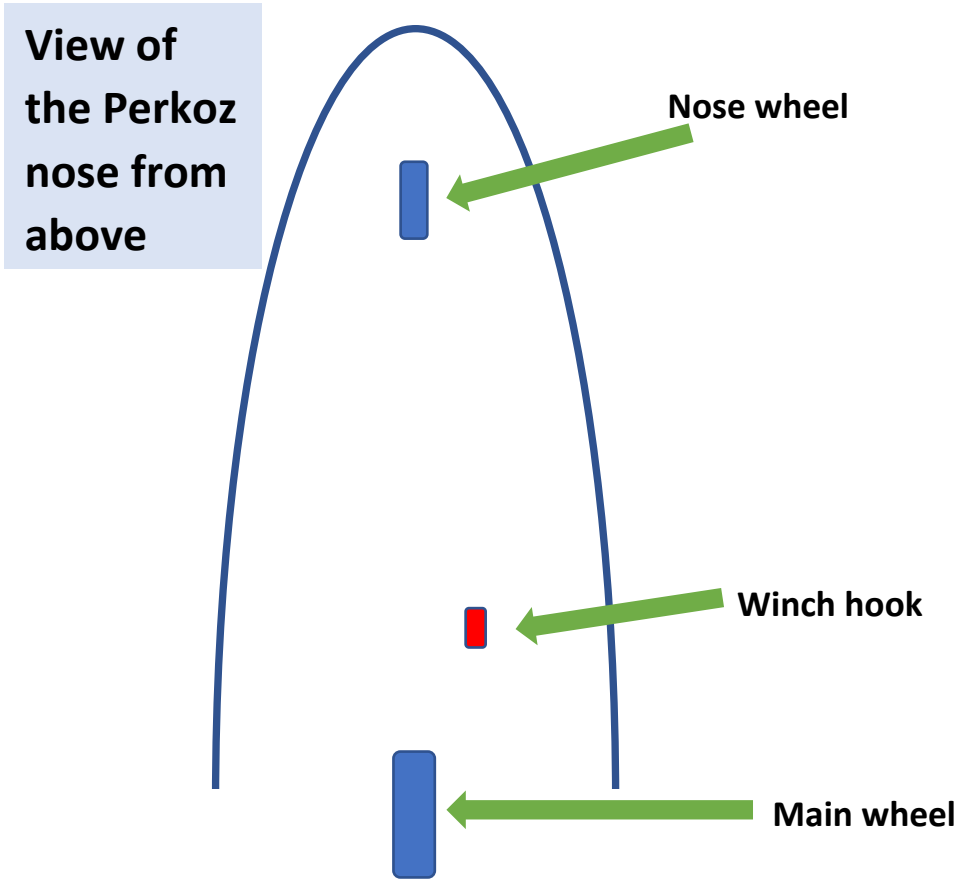
Attaching the cable to the Perkoz

There has been a lot of discussion and "misinformation" around the club reguarding the method of attaching the cable to the Perkoz. The Perkoz differs from the majority of the club gliders in two significant ways.

1. The winch hook location is offset to starboard (right, from the pilot's point of view).
2. The Perkoz does not lift its nose off the runway as it begins to accelerate down the runway (unlike the K13 and K21 which usually require a "forward" stick position to prevent the tail wheel hitting the ground). The Perkoz tends to launch with the nose wheel on the ground until it is lifted into a "flying attitude" by the pilot.

The following sketch shows the general configuration in an exaggerated way.



Soon after it arrived, several pilots reported that the Perkoz will "swing" towards the track and crop during the early part of the ground run. The tendency to change direction may be made worse by:

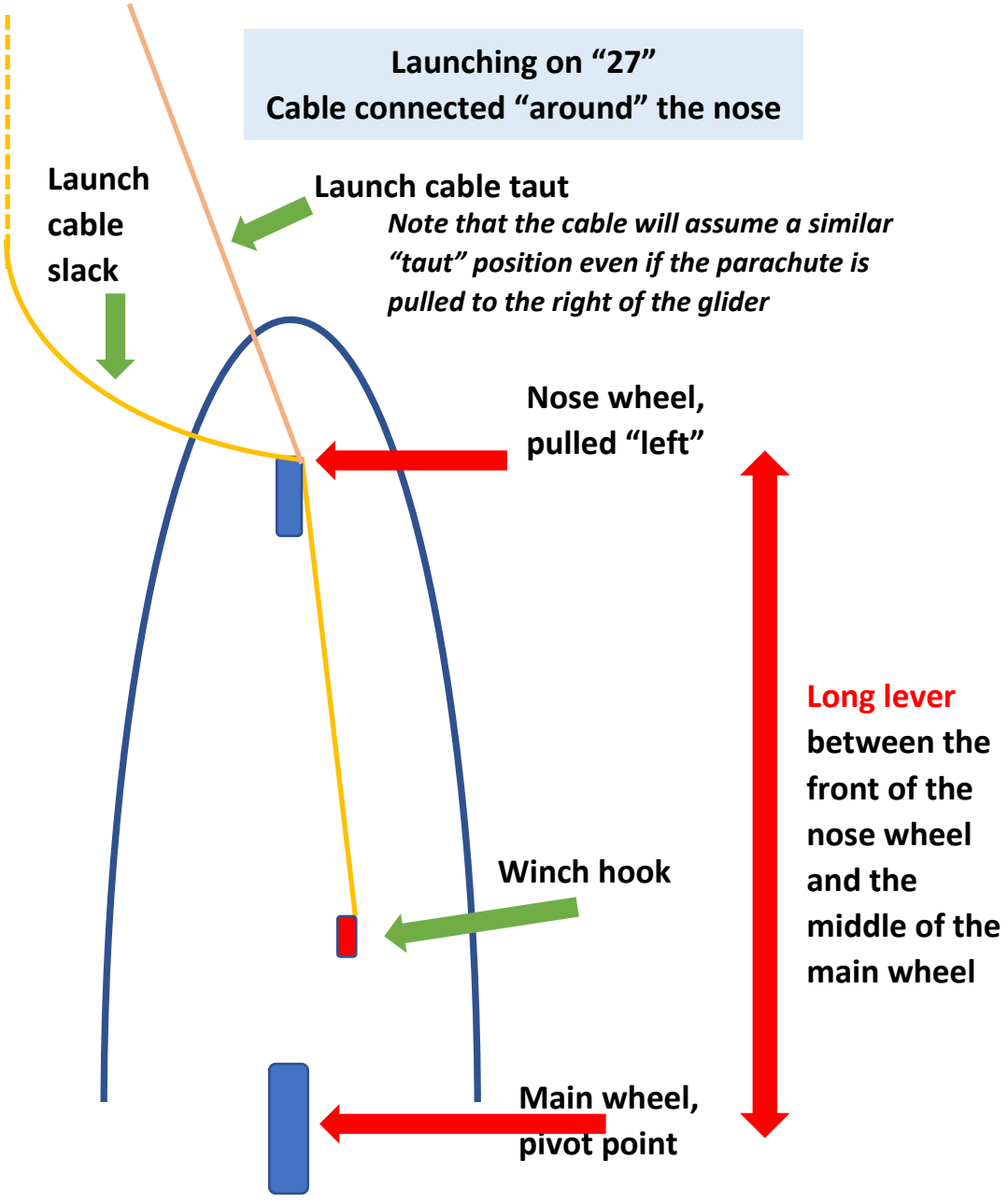
- A cross wind from the South
- The wing-runner "holding back" the wing tip
- The glider not being aligned with the cable
- The hook position, offset to the starboard.

In practice, the fact that the hook is offset to starboard is far less of a factor than the manner used to attach the cable.

When launching from the Eastern end of the runway (on runway 27), the cables are normally drawn out near the concrete strip and so they lay to the port (left) of the nose.

If the cable is pulled across in front of the Perkoz and attached to the hook (on the starboard side), then as the slack is removed during take-up-slack, the cable will pull tight around the nose wheel

When the "all-out" power is applied, there may be a significant "left" pull on the nose wheel which, being a long way ahead of the main wheel, will cause the glider to pivot around the main wheel, turning to the left, towards the track, (exaggerated to make the point in the following sketch).

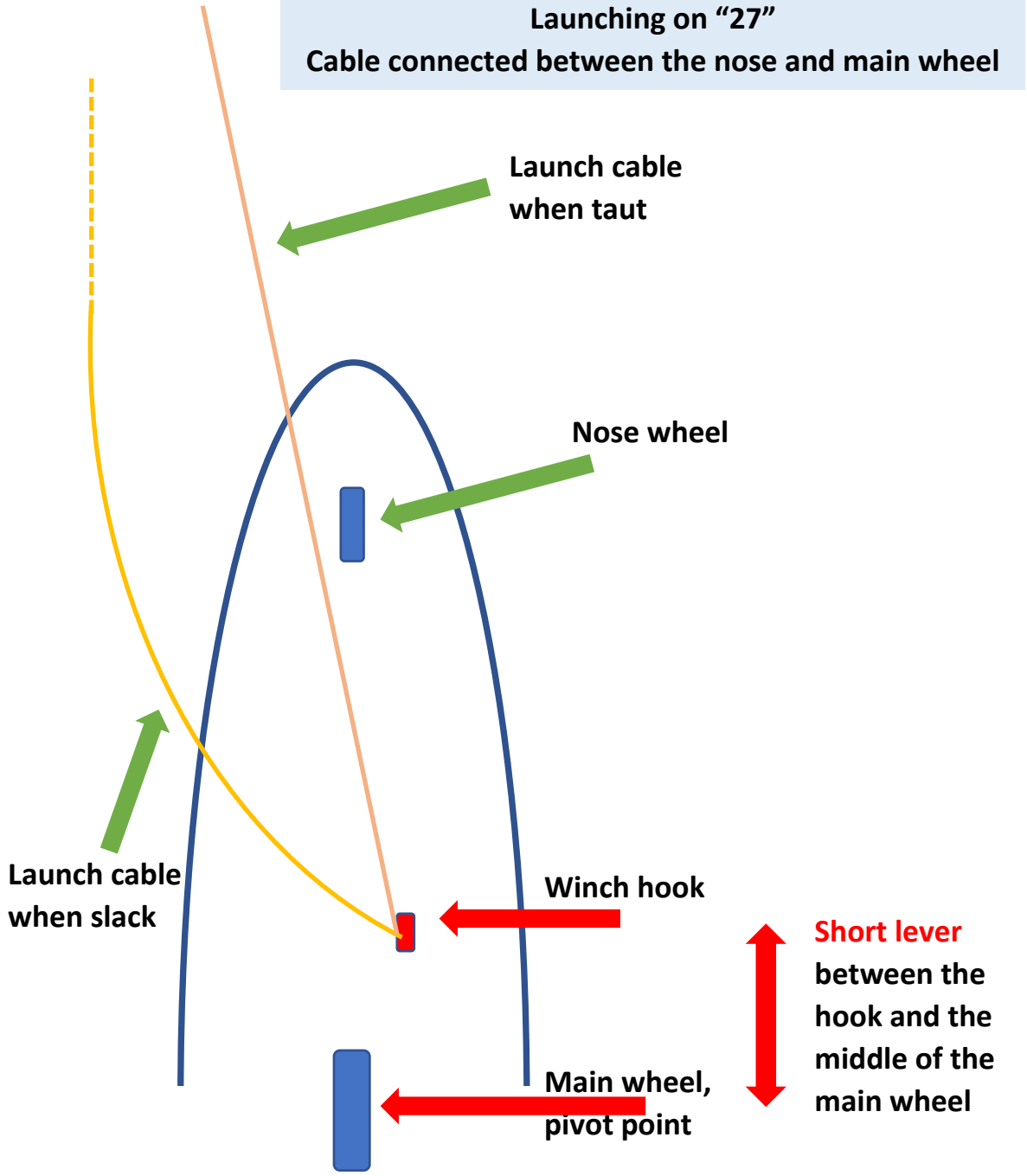


Note that the lever-arm pulling the nose left is from the front of the nose wheel to the middle of the main wheel, which is several feet (metres) long.

If the pilot raises the nose to the normal flying attitude then the cable can pass under the wheel and the "left turn" is much less pronounced as the cable soon slips below the nose wheel

Bottom Line: On runway "27", attaching the cable by walking it around the nose may cause an unexpected swing and so this is not recommended.

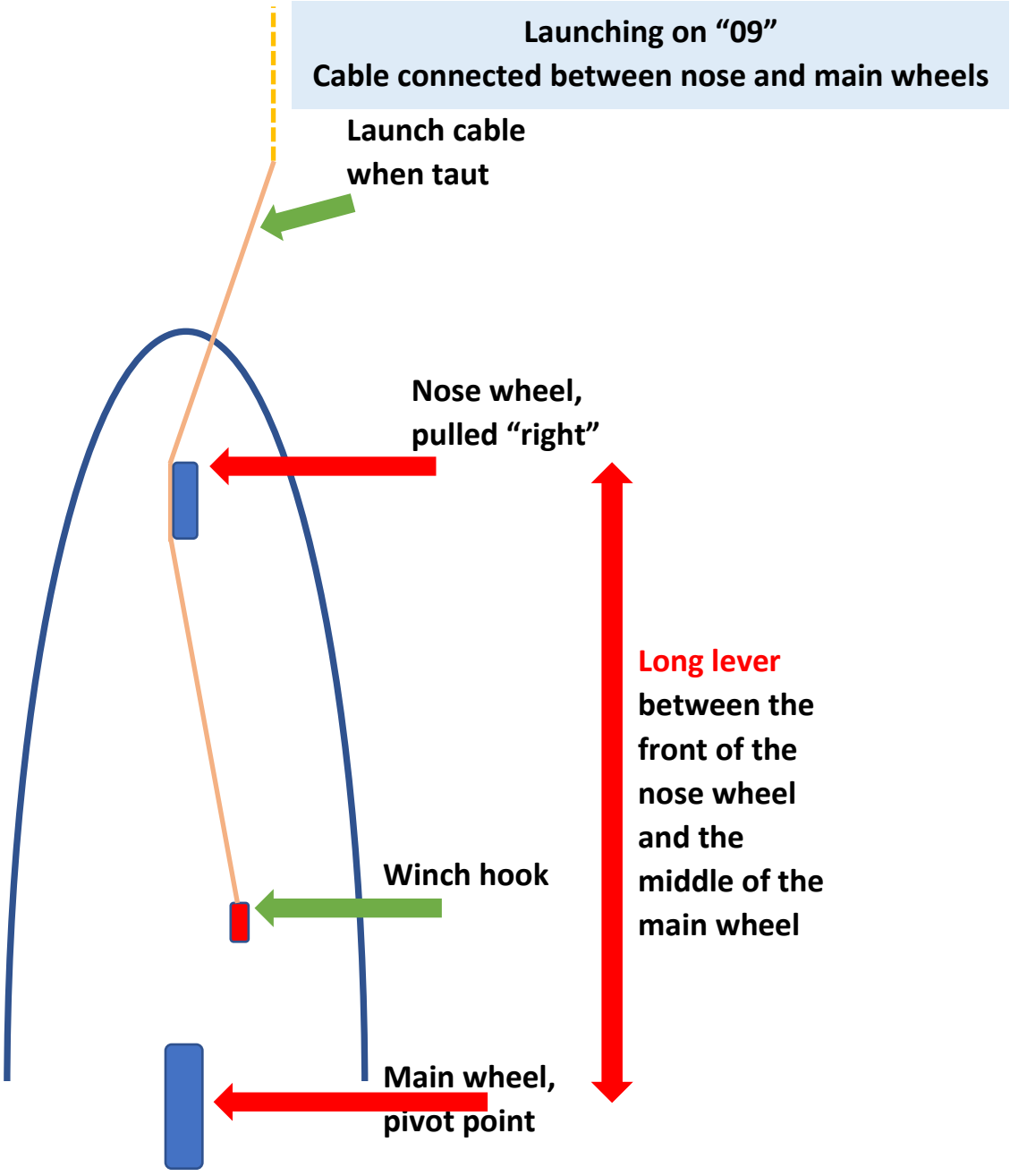
Some pilots request that the cable is passed under the Perkoz fuselage, between the nose and main wheels. If this is done then the cable still lays to the port (left) side, and when it goes taut will still have some "left" pull on the winch hook, but the winch hook is very much nearer the main wheel than the nose wheel is, so the lever-arm length is inches (cm) rather than feet (metres) and the effect is very much reduced. This is almost equivalent to swiftly raising the nose to allow the cable to slip under the nose wheel.



As should be evident, passing the cable between the wheels will significantly reduce (but not eliminate) the tendency for the Perkoz to swing-left on launch.

Bottom Line: On runway "27" it is helpful to connect the cable to the hook by passing it under the fuselage, between the nose and main wheels.

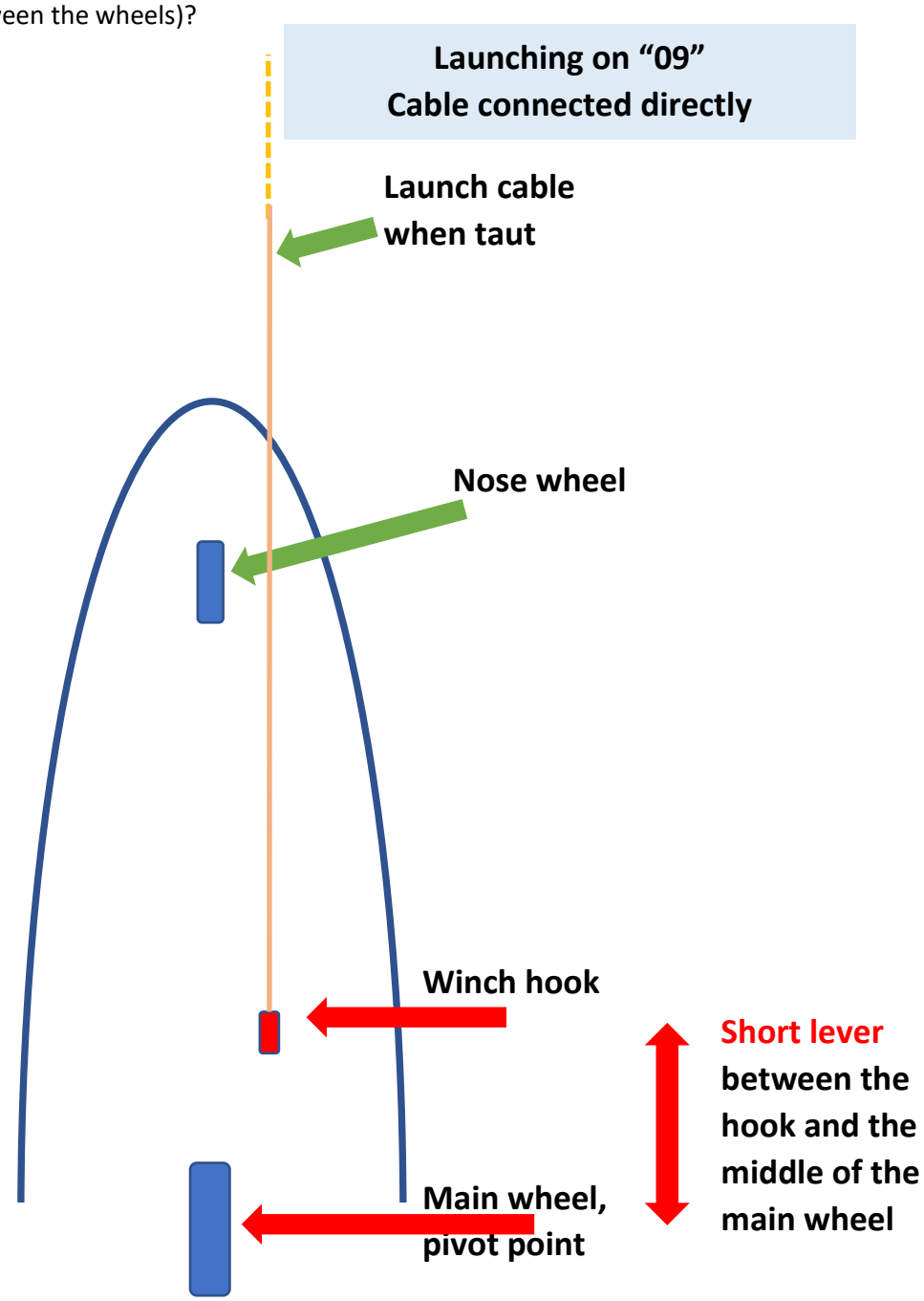
Now let's consider what happens when launching from the West end (on runway 09) and the cable is threaded between the nose and main wheels. Again, the cables lay near the concrete track and so they are now on the starboard (right-hand) side.



If the pilot does not lift the nose wheel quickly, then the cable will pull the nose to starboard (right), and that pull will be over a long lever arm and so it is likely to cause the Perkoz to swing right. So, in this situation, threading the cable between the wheels has caused an unnecessary control problem.

Bottom Line: On runway "09" passing the cable under the fuselage, between the nose and main wheels will increase the likelihood of a swing.

What happens at the Western end of the runway if the cable is connected directly to the hook (not between the wheels)?



Here, when the cable pulls tight, it does not wrap around the nose wheel if it is connected "directly" to the hook. The lever-arm is short, and so there is a slight tendency to swing, caused by the offset hook position.

Bottom Line: On runway "09" it is best to connect the cable to the hook directly.