

FLAPS UP LANDING

Overview

Most people will fly a no-flap approach only to fulfill training requirements, but a loss of utility hydraulics, flap malfunctions, and two engine approaches often result in a flaps up landing. Whether it be for training or for real, give yourself plenty of time to set up for the approach. An extended downwind and wide base will help you get established on final early. Fly 150 knots or flaps up approach speed (whichever is higher) until rolling out on final. Some people interpret that you can fly 140 or approach speed on base, but section 2 of the Dash-1 says to "complete the turn to final and slow to flaps up approach speed." Don't get tricked into flying 140 on your base turn during a checkride.

There are a couple other things to remember. When you suck the flaps up, you'll need to pitch up to keep from descending, and you'll have to crack the power to prevent yourself from accelerating (you may already be near gear limiting speed). On downwind you'll be looking for the horizon about a quarter the way up the windscreen. Also remember that your pitch picture during the turn to final will look different as well. Pilots will often develop high sink rates, getting themselves drug in on final, even before the roll out. Cross check your VVI in the turn; you probably want no more than 500 VVI. Use SCNS with your radar altimeter, an ILS, or VASI/PAPIs to keep you on a three degree glideslope. It'll be much easier to land that way. After you get on final there are a couple techniques to get you from the approach to the landing.

Technique 1

The first technique is to treat this landing like any other landing in the Herk but with a slight modification. Fly the approach trimmed up at flaps up approach speed until approximately 1 NM from the threshold and then pull a knob width of power. This small power reduction should allow you to slow to and transition through no-flap threshold speed as you cross the threshold. Continue to decelerate towards landing speed until you are 10 - 20 feet above the runway, then break your sink rate by adjusting your pitch picture by one-inch. Freeze that picture and use power to gently bring yourself down onto the runway.

Some people use a small variation of this technique. Instead of 1 mile, they crack a half knob width of power at 1/2 mile (approximately the instrument approach lights) and give three good clicks of back trim. This should transition you through threshold speed in the same manner. Regardless, if you kept your speeds, your glideslope, and your aimpoint (at the Captain's Bars), you'll land about 1500 feet down the runway, on speed.

Technique 2

The second technique slows you down to no-flap threshold speed much earlier on final, some say at 2 NM, but if you're going to slow early anyhow, do so as soon as you are established on final. That way you can get trimmed and stable. The aircraft pitch on final will approximate a landing attitude (aimpoint 1/3 the way up the windscreen). Fly at no-flap threshold until 2-3 feet wheel height above the runway, then adjust your pitch 2-3° (or 1-inch) to arrest the sink rate, while slowly retarding the throttles to flight idle. Just don't let a high rate of sink develop.

Flaring & the Tailskid

Some people say that you don't flare a no-flap. That's simply not true, but an excessive flare can get you a scraped tailskid or worse. In both the techniques mentioned above, a slight flare or roundout is used to arrest the sink rate. You're only changing the pitch picture by one-inch or 2-3 degrees. After that you use power to complete the landing. If you find your sink rate increasing (feels like the seat is falling away from you) correct with power. The normal tendency is to pull back on the yoke, but that'll only give you a dropped in landing and a banged up tailskid.

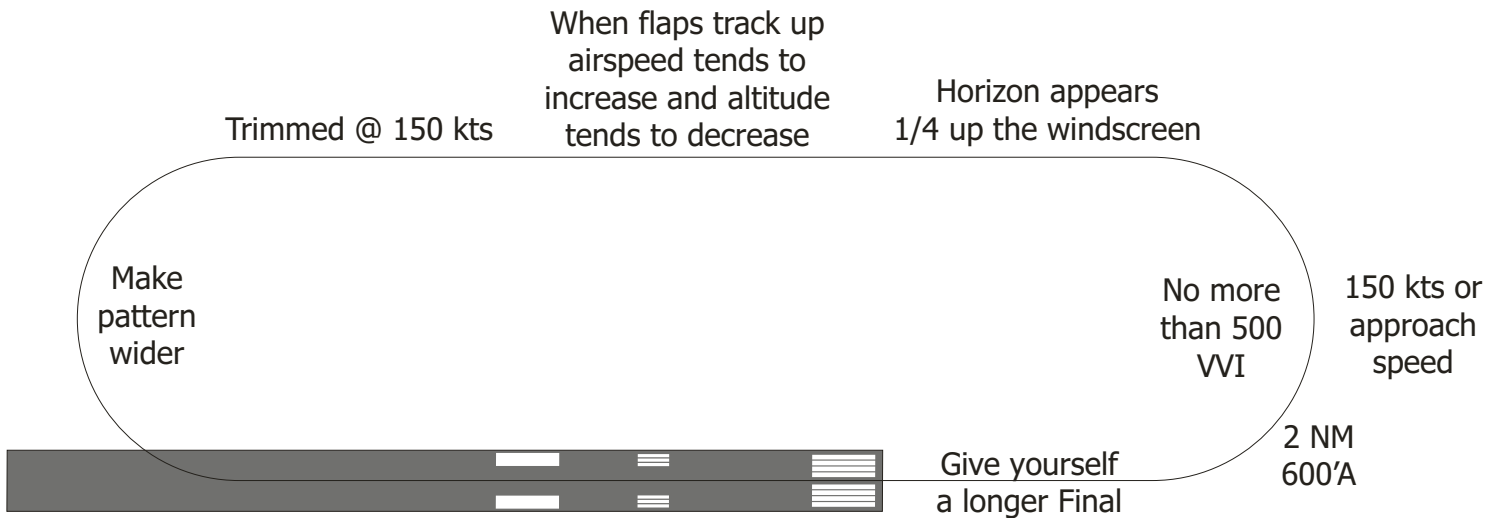
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Vol 3 Training Restrictions

- Max Weight 120,000 lbs
- Crosswinds in Recommended Area
- Weather Requirements
 - DAY: Circling Mins
 - Night: 1000-2 or Circling (if higher)
- 6000' Rwy required for Touch & Go's
- Cp's must have 500 Herk Hours or be enrolled in AC

Dash-1

- Extend downwind to set up for approach
- Complete Final Turn at 150 (or approach speed if higher)
- Slow to Approach Speed on Final
- Pitch will be a landing attitude
- Descent (VVI) is controlled with power
- Don't Flare or Round-out (to avoid tail skid scrapes)



Remember

- Aimpoint & Airspeed is key
- Descent is controlled with power, not pitch
- Keep 3° Glide slope
 - Above glide slope is a recipe to swap ends
 - Below glide slope is a recipe for fast touchdown
- Alert: if no power at threshold, check VVI
- Make small roundout (shifting pitch picture by 1 inch) to land

Common Tendencies

- Easy to Gain/Hard to Lose Airspeed
- Lose altitude & gain airspeed when going from 50% to 0% flaps (prevent by cracking power and increasing AOA)

