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Matts Tailwheel Flying (notes)

(Not meant to be an all inclusive instructional, but key notes for each phase of flight in a tailwheel)

General

Always be 'braking' straight ahead when at any speed. Avoid trying to brake during turns, can get out of hand quickly.

- When on the runway get straight…then apply even braking to a point where the speed is low.
- Try to avoid differential braking to get straight and avoid braking in turns.

At all times during taxi and rollout from landing, stick should be ALL the way back to keep the tailwheel pinned to the ground for best positive steering/directional control.

Workload will always be high. Never 'set it and forget it'

- ALL activities on taxi, takeoff, landing, rollout, ALL ACTIVITIES are high workload, high effort
    - NOTHING is easy, just know its always high workload and brain, ALWAYS. It will never be simple
- DO NOT ever be complacent, always positive stick control….it must be set somewhere.

Tailwheel and 'Full Swivel' mode

- The tailwheel when exceeding its limits of turn will 'break away' and be in full swivel mode.
    - Use this to your advantage for sharp turns on the ground or parking etc.
- Learn to feel when tailwheel breaks loose.
    - Rudder will be light.
    - Learn to feel when it reconnects: Wait for it to reconnect by taxi ahead and differential braking
- Might need a few feet of power and jerky braking…then get it locked and resume graceful straight taxi at low speed.

Treat allllll crosswinds as 'significant' even if 3kts. Any crosswind will take fullllll effort on the controls.

- Treat any crosswind as significant and remain on top of it.

Treat all excursions from 'straight and forward' as important.

- Correct EARLY and small corrections.
- Don't over correct, but asap early corrections on any excursion from straight.

If the directional control gets out of control on taxi or landing rollout…..ground-loop, bad idea. (the shopping cart backwards analogy)

Taxi

At all times during taxi and rollout from landing, stick ALL the way back, pinned at all times.

Ensure good crosswind control with aileron deflection.

- During Taxi: Keep tail pinned. Only do full forward on tailwind if very strong winds from behind. The prop wind flow will generally keep the tail pinned in lower winds.
    - ‘Dive away’ from the wind only if significant tailwind on taxi

Taxi at a very slow pace. Remember, every phase is high workload…stay slow.

- Taxi no faster than a walk so things don’t get out of hand

The length of nose/engine will make it harder to see and harder to turn.

- May need more rudder to make it turn, but then more angular momentum will make it turn faster and then need early early correction to not oversteer.
- Visibility reduced on taxi, may need to do s-turns. Use peripheral vision

Learn to anticipate and turning with rudder and less brakes

Use peripheral vision on taxi and landings. Will be hard to look directly over the cowl to see centerline

Keep momentum when taxiing on dirt and gravel, DON’T get fully stopped.

- Prevent prop being hit with rocks, don’t stop, keep rolling…..

Be careful when doing a U-turn on the runway (or on taxiway with sharp turns needed)

- Recognize the empennage is long and avoid putting the tailwheel in the dirt on the turn.
- It is Ok to kick the tail to full swivel and U-turn (or sharp taxi turn).
    - Then lock back in after the big turn.

Takeoff

Ensure good crosswind control control with aileron deflection

- During Takeoff: Aileron into the wind, don’t let the wing get lifted!
- Look at the windsock on takeoff roll.

When it ‘feels’ right, apply Stick forward to get level pitch attitude on the ground, feel it, push forward lift tail. Keep main wheels pinned on the ground until Vrotate.

- Feel/know when to lift the tail, don’t need to look at ASI and match a number.
- It is hard to push too far forward, but find the level pitch/pinned attitude, its a lot of stick forward.

Avoid 3-point takeoff (by forgetting to lift tail) since high AOA and slow airspeed, close to stall.

Short field takeoff: Lift the tail but not as high…slower airspeed and rotate off the ground.
Soft field takeoff: Don't lift the tail much so as to avoid nosing-over in muddy terrain.

Be dancing on the rudder, there are lots of changes throughout the initial roll, lifting of the tail and rotating.

- Small and early corrections to stay centered.
- If off centerline, first correct and get straight, then can ease back to center. Avoid over correction and chasing (swerving back and forth)

Landing

Treat all landings as short field

- But without the heavy braking

Retract flaps asap so heavy on the ground….and rocks kick up hitting flaps
But watch the distractions. Be straight and in control and pinned.
Carb heat off as soooon as possible so that debris is NOT sucked in.

On landing, treat all excursions from 'straight and forward' as important. Correct EARLY and small corrections. Don't over correct, but asap early corrections on any excursion from straight.

Look at windsock on short final!!! If ANY crosswind even 5kts, plan for high workload.

3-point Landing:

- Good for slow, short, paved and non- paved runways, with negligible crosswinds
- Best for short and soft and lowest possible speed
- Short and soft, use 3 point and no braking

Wheel Landing:

- Best for high winds, gusty winds, crosswinds
- Much longer rollout, ensure runway length.
- If it bounces, transition it to a 3-point landing, don't do a re-wheel landing
- If the tail gets low before touching mains, just turn it into a 3-point landing
    - If the nose is too high, turn it into a 3-point landing
- It is ok to carry a little extra speed (maybe 5kts).
    - Carry a little extra power (to prevent the drop and settling into a 3 point)
- As soon as mains touch the ground: Stick Forward and start reducing power slowly to idle.
    - 2 things to do as soon as mains touch, do both.
- Let the tail start to drop naturally, then full back stick to pin the tail.
    - Advantages: maximum controllability, reduced issue from gusts, improved visibility, ability to touch down at any speed really
    - Keep tail up as long as possible with increased stick forward, let tail drop on its own.
- There is a longer runway rollout. Don't hurry the tail down
- Once tail is on the ground, full back elevator to stay pinned and wheel contact
- The moment the tail touches the ground, the big fight has been won.
    - The phase from wheel landing until tailwheel on the ground is HIGH NERVES.

    - Vulnerable to crosswind until the tail is on the ground.
    - Once the tailwheel is pinned to the ground, you have positive control for steering.
- Common Errors:
    - Failure to apply forward stick and bounce, diving for runway, excessive high speeds
    - Failure to let the rollout slow on its own, adding brakes too early and lose of directional control.

If any landing is not aligned, YOU WILL KNOW IT.

- Especially on paved runways. Dirt/grass more forgiving to misaligned touchdown.
- Must align longitudinal access by touchdown, DO NOT land crooked, critical to be straight.

Stick must be held back as you roll out on any landing type.

Brakes should not be applied unless absolutely necessary, braking straight ahead

Other

Places to go for training local to KBJC

- Head to non-paved from day 1, get into it.
- Easton Valley 11V: all dirt and gravel and plenty long
- Platte Valley 18V: Has a dirt runway
    - There is a taxiway that is in the middle of the dirt/grass runway.
    - You can hit it, but try not to. Land runway 9 and just be sure to be stopped before it. Good challenge to ensure on speed, on point.