

Tecnam Echo Super and Eaglet Standard Operating Procedures and Maneuvers Supplement



March 29, 2010

Normal Takeoff

Flaps Take Off

Trim set

Fuel pump on

Check for traffic

Line up on white stripe

Full power

Stick should be located in the middle of the travel space

Steer with feet only

Gradually apply back pressure to lift the nose off ground
but leave the mains on the ground

Rotate 48kts

Climb out 68kts

Flaps up - 500 agl

Follow noise abatement procedures

Level Off

Lower nose to achieve level flight

Reduce power to 5100RPM

Reset trim to remain in level flight

Verify: flaps up, engine instruments green

Normal Landing

10nm from airport, landing light on, fuel pump on, listen
to AWOS and/or request airport advisory

5nm from airport begin self announcing position

Enter traffic pattern following noise abatement
procedures

As you enter the pattern power back to 3,800 rpms to get
the aircraft slowed down

Downwind leg 3,800 RPM, 65kts level flight, retrim

Abeam of numbers, reduce power to 2,800 rpms, add
first notch of flaps, retrim for 60kt decent

Base, add landing flaps, adjust power/ power if need be
for appropriate decent altitude and to maintain
60kt decent

Final, adjust power if need be for appropriate decent
altitude and to maintain 60kt decent

Once the runway is made, reduce power to idle

20 feet above runway, begin transition from maintaining
airspeed to maintaining attitude. Focus eyes at far
end of the runway. Gradually increase back
pressure on stick to try and hold aircraft 2 feet off
the runway as long as possible. Use your feet to
point airplane down the runway and hand to
maintain altitude and keep it over the centerline.

Once main wheels touch the ground, steer with feet.

Gradually lower the nose wheel and begin
applying brakes as needed

Clear runway

Make radio call

Reset trim, put flaps up.

Slow Flight

2 clearing turns
Reduce power to 3,500
Increase pitch attitude and trim to maintain altitude
Once within the white arc, bleed in flaps
Adjust pitch and power to maintain altitude at 48kts

Recovery

Full power
Pitch for level attitude
Bleed out flaps while in the white arc

Power Off Stall

2 clearing turns
Reduce power to 3500 rpm
Increase pitch attitude and trim to maintain altitude
Once within the white arc, bleed in flaps
Adjust pitch and power to maintain altitude until 60kts
At 60kts, reduce power to idle and establish 60kt glide
Descend 300 feet and then gradually pitch back to maintain altitude and induce a stall.

Recovery

Simultaneously apply full power, right rudder as needed, pitch for level attitude, and remove first notch of flaps (approximately 3 seconds).
Once airspeed has increased to 60kts, establish 60kt climb
Bleed out flaps and climb to desired altitude.
Return to cruise flight

Power On Stall

2 clearing turns
Reduce power to 3000 rpm
Increase pitch attitude and trim to maintain altitude
Once within the white arc, add 1 notch of flaps
Adjust pitch and power to maintain altitude until 48kts
At 48kts, apply full power, right rudder, and immediately pitch back to further reduce airspeed until stall
Watch coordination and maintain heading

Recovery

Pitch for level attitude
Once airspeed has increased to 60kts, establish 60kt climb
Remove flaps and climb to desired altitude.
Return to cruise flight.

Steep Turns

4800 RPM - Establish cruise flight at or below 93kts rpm
2 clearing turns
Trim airplane for level flight
Choose landmark for entry heading
Begin roll to 45° bank
At 30°, add 100-200rpm and continue roll to 45° adjusting back pressure as needed
Maintain altitude
10° prior to roll-out heading, begin roll out and reduce power 100-200rpm.
Roll out at entry altitude and heading.

Turns Around a Point

Determine wind direction

Select a suitable site. Should have emergency landing areas and not disturb the neighbors.

Establish cruise flight at or below 93kts 4800 rpm

Select four points around the point that are equidistance from the center. These four points are your targets.

Enter maneuver at 800 feet on downwind

When point in abeam of wing begin turn

Steepest turn should be downwind. Shallowest upwind.

Keep object same distance from aircraft by adjusting bank angle. Steeper brings it closer. Shallower takes it further away.

S-Turns Across a Road

Determine wind direction

Select either Rt 50, Rt 404, or Rt 301. Winds should be perpendicular to road.

Establish cruise flight at or below 93kts 4800 rpm

Select target distance from road

Enter maneuver at 800 feet on downwind, perpendicular to road

When over the road begin turn

Steepest turn should be downwind. Shallowest upwind.

Airplane should be wings level only when crossing the road. Adjust bank angle accordingly.

Loss of Engine

Establish and trim for best glide speed 68kts

Select emergency landing site and head that way

IF there is time, try to restart engine

Work right to left

Throttle - Half Open

Fuel - Verify On Both

Fuel Pump - On

Magnetos - Check

Attempt re-start

IF there is time, call for help giving position

Radio 121.5 MHz

Transponder 7700

Secure Engine

If engine will not restart - Fuel Shutoff Up

Ignition Switches - Off

Flaps - as necessary

Master off after final flaps

Unlock and prop open doors with headset prior to touchdown

Go-Arounds

Apply full power
Reduce flaps to take-off setting
Pitch for level attitude until 60kts and then begin climb
Bleed out flaps

Short Field Takeoff

Take-off flaps
Fuel pump on
Stop aircraft at the very end of the runway
Hold brakes and apply full power
Release brakes
At 40kts rotate and climb out at 60kts
Above obstacle height, pitch for 68kts

Short Field Landing

Fuel pump on
Set up final approach at 55kts
Establish aim point prior to actual touch down point
After touch down, maintain full after elevator, retract flaps, apply brakes but do not skid!

Soft Field Takeoff

Inspect field condition checking for grass height, holes, debris, and wetness
Fuel pump on
Flaps - Take-off
Full aft pressure during taxi continuing through takeoff
Apply full power
As soon as main wheels leave the ground, lower nose to level attitude and fly aircraft 5 feet off the ground until 60kts
Climb out at 60-68kts

Soft Field Landings

Fuel pump on
Perform low pass to inspect field condition for grass height, holes, debris, and wetness
Set up normal approach to landing
Keep nose wheel off the ground as long as possible holding aft pressure as long as possible
Use minimal braking and keep aircraft moving until parked

Crosswind Takeoff

downward wing into the crosswind wind

Modify appropriate takeoff procedures as such:

Begin ground roll with full aileron into the wind
Gradually take out most of the aileron as aircraft accelerates
Upon lift-off, establish coordinated crab into the wind

Crosswind Landing

Modify appropriate landing procedures as such

Add 5kts approach speed, especially in gusts
Apply rudder to point nose down the runway
Apply aileron to hold aircraft over the centerline

*Net effect should be the aircraft slightly cross controlled with the wing down into the wind
Control input should be increased as aircraft decelerates and maintained until landing*

Forward Slips

Apply full rudder
Apply enough opposite aileron to hold the aircraft over the centerline
Pitch to maintain airspeed

This is most effective with no power, full flaps and

Flat Tire Upon Landing

Stop aircraft

Radio call - Notify UNICOM and landing traffic of runway situation

If able, push aircraft off of runway while keeping as much weight off of that wheel as possible

If unable to reach UNICOM - Call CSP emergency numbers for assistance

Aborted Takeoff

Retard throttle

Apply full braking

Steer as appropriate

Note: Grass can be used to slow the airplane down

Loss of Engine Immediately After Takeoff

Pitch DOWN for 60kts

Make shallow turns right or left

Off runway 29 - prepare for ditching

Ditching

Pitch for 68

Head towards a boat or shoreline

Place MAYDAY call 121.5 and squawk 7700

Seats belts: TIGHTEN

Flaps: FULL DOWN

Fuel selector: BOTH OFF

Electrical fuel pump: OFF

Ignition: BOTH OFF

Turn master switch off

Prop open doors

Landing speed: 47 KIAS

Ditch with high aircraft nose attitude

Engine Fire - Emergency Decent

Cabin heat shut off

Shut off fuel

Turn fuel pump off

Apply full throttle

Pitch for highest possible airspeed within the yellow arc to try and snuff out flames

Select emergency field

Mayday 121.5 and 7700

Prepare for forced landing (use loss of engine checklist)

Employ slip to increase decent and keep fire away from firewall

Emergency Decent - (Not Engine Fire)

Select emergency field

Set airspeed at top of the white arc

Employ full flaps

Use slip and/or spiraling decent to increase decent rate

Spin Recovery

From the FAA Airplane Flying Handbook

Reduce the power to idle

Position the ailerons to neutral

Apply full opposite rudder against the rotation

After spin rotation stop, neutralize the rudder

Begin applying back-elevator pressure to raise the nose to level flight

Overheating Cylinders/Water (In-Flight)

Reduce RPMs to lowest possible to maintain safe flight

Land as soon as practicable

Overheating Oil Without Loss of Oil Pressure

Reduce RPMs

Lower angle of attack

If oil temperature continues to climb, land

Overheating Oil With Loss of Oil Pressure

Select and head towards emergency landing spot

Declare an emergency 121.5 and 7700

Prepare for loss of engine and use of appropriate

checklist

Loss of Radio

If in a pattern at a towered field, look for light gun signals.

If under flight following or in towered airspace with radar, squawk 7600

Otherwise return home or to nearest appropriate airport

Overfly and observe airport traffic pattern

Carefully merge with traffic

Execute normal landing

Loss of Flap Control

If flaps are down, maintain airspeed below 68 kts when returning to airport

If flaps are up, return home and execute normal landing

Loss of Trim Control

Fly the aircraft paying special attention to airspeed in the pattern

Loss of Brakes

If you are fast and have adequate runway, go-around and re-approach using short field landing technique

Land with minimum airspeed

Roll into the grass on the side of the runway if needed to stop the plane

Electrical Fire

Master Switch - OFF

Aux Alternator - OFF

Vent fumes from cabin

Land as soon as practical

Loss of Generator or Alternator

Switch to the other

If both are out, turn off all unneeded electrical equipment

Land as soon as practical

Use no-flap landing