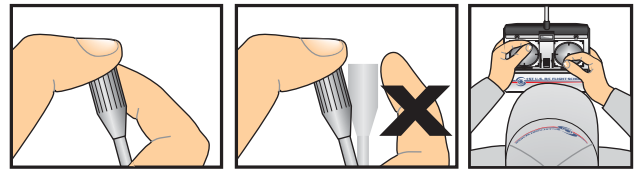


Days 1-2 Practice:

Transmitter handling.....Pg. C-33, 34

Keep the thumb on top of the stick and the index finger on the side, near the thumb, for added support and smoother control.
Do not remove fingers from the stick, except to trim!



Basics of turning an airplane.....A-1-4, C-42

Aileron banks the wings, elevator turns the plane.
To stop the turn, neutralize the elevator and level the wings.

Effecting a wide or tight turn.....A-3

Control the plane v/s reacting to it-attention to control inputs.
Correlation between the size of the aileron bank input and the amount of elevator required to keep the turn level.
360 degree circle-holding in the elevator.

Neutral as the reference.....A-4, C-37-42

Gauge the size of the inputs from neutral.
Apply more or less input from neutral to improve the next turn.

Completing the turn.....A-5, C-41, E-61

Level the wings with an aileron input equal but opposite to the input applied to bank the wings initially.

Procedure Turn aileron bank input.....C-38, A-1-4

The inputs determine the result.
Stay out of trouble as long as the ailerons are not held in!
Find the aileron input that produces a comfortable bank.
Smoothly apply the aileron to bank the wings, then quickly return to neutral and pull up elevator before the plane drops.

Pro. Turn up elevator input-level turn.....C-39, A-4

Feel neutral before pulling elevator to avoid holding in aileron.
Quickly pull a small amount of elevator right away and hold it in.
Do not wait to see a loss of altitude before pulling elevator.
Find the right amount of elevator for the average bank.
Hold in the elevator throughout the turn.

Adjusting the elevator-level turn.....C-40, A-4

Trust the turn inputs starting the turn, then adjust the elevator to keep the turn level based on watching the plane.
Do not neutralize the elevator during the turn!

Pro. Turn Correction.....C-41, A-5, E-61

Anticipate the direction to apply the aileron Correction beforehand.
Neutralize the elevator immediately before leveling the wings.

Turn Restart.....C-43

While continuing to hold in the elevator, briefly Bump the aileron in the direction of the turn to reestablish or steepen the bank and tighten the turn when necessary.
Do not neutralize the elevator during the restart!
Do not hold in the aileron!

Procedure Turn Summary.....C-42, A-2

Smoothly input the Bank, quickly return to neutral and pull up before the plane drops. Do not hold in the aileron!
Trust the control inputs starting the turn, 1-2-3, then watch the plane and adjust the amount of elevator held in to keep the turn level.
Anticipate the direction to apply the aileron to level the wings beforehand.
Neutralize the elevator immediately before leveling the wings.

Course adjustment aileron Bump.....A-7-11, C-37

Stay out of trouble as long as the ailerons are not held in!
Input each small Bump smoothly so the plane has time to respond to it.
Pause at neutral after each Bump to see if another is really needed.
It's better to apply two separate Bumps than to hold in the aileron.
It's better to apply two separate small Bumps than one big Bump!
When in doubt, Bump the aileron and alter the plane only slightly.

First flights in Comfortable View.....D-48-51

Guide the path of the plane back and forth viewing it as a whole, and project where the whole is heading in order to detect deviations off of the desired path early.
Keep asking is it drifting away or drifting in as it passes out in front.
Regardless of the wind or where the plane is pointing, correct only when the whole deviates from the intended path.

Prioritize Positioning.....D-54, G-47

Initially ignore small altitude and speed changes after climbing and diving turns, and concentrate on good positioning and getting better at keeping the turns level.

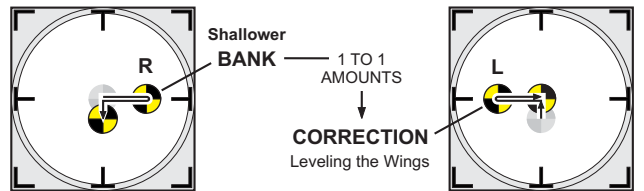
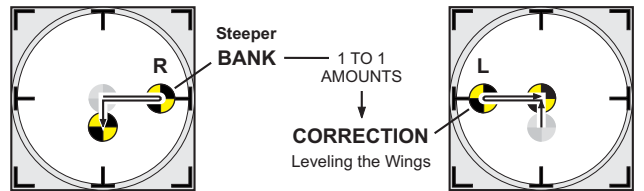
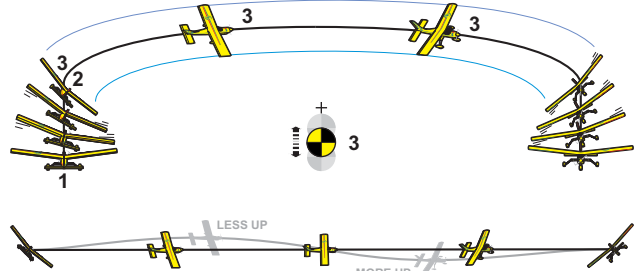
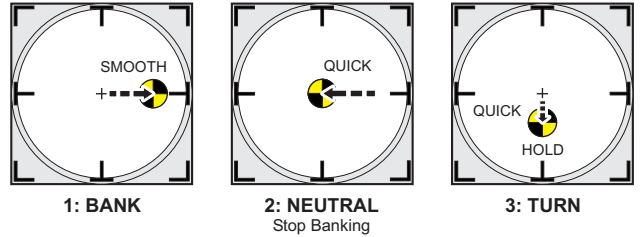
Body Rotation.....D-52

Face in the general L to R or R to L direction the plane is heading to reduce L/R confusion.

Push Away - Pull In.....D-53, E-58

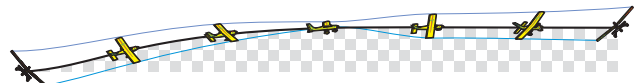
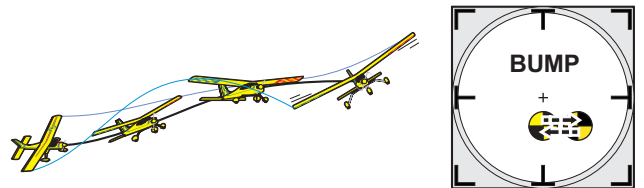
Reduce thinking time by simply facing in the direction the plane is heading and applying the stick in the direction the plane should go.

TURN START

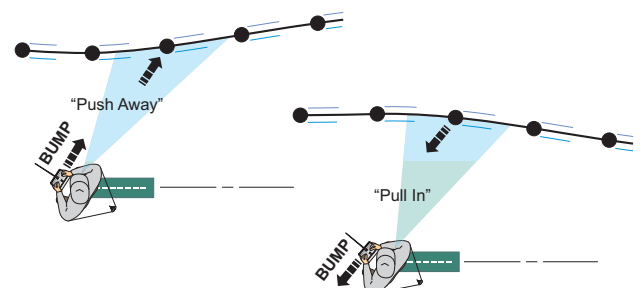
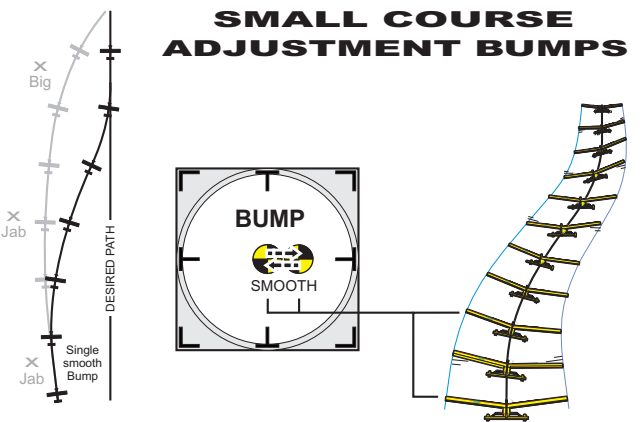


TURN RESTART

Reestablish Bank Angle



SMALL COURSE ADJUSTMENT BUMPS



Day 2 Practice:

Stage I Landing Pattern practice.....E-56, 61

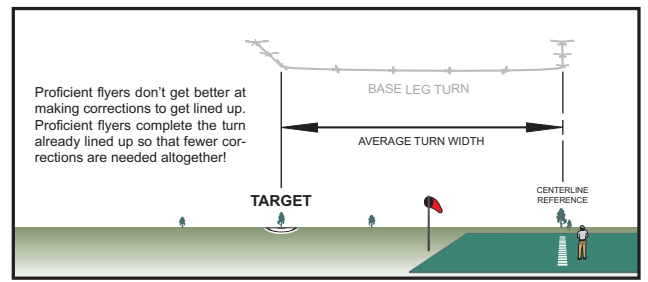
Determine the direction of the eventual Landing that is most into the wind.

Walk to the center of the runway and take note of the ground references on the horizon in-line with the extended centerline. Note the wind direction and strength, and anticipate the wind's effect upon widening or tightening the Base Leg Turn.

Target where to start an average turn from to come out of it in the area of the runway centerline reference.

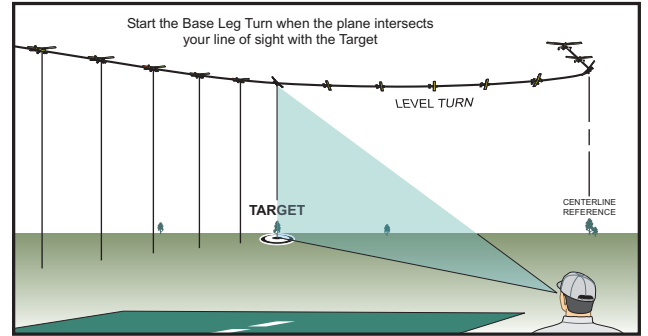
Adjust where the turn is started, not the turn itself, to come out of the Base Leg Turn closest to the runway centerline reference!

Anticipate the direction to correct the turn before it's time to correct.



Runway line-up perspectives.....E-57, 58, 62

Keep the plane in close to overfly the runway directly in front. Trying to overfly the runway using hit or miss depth perception, versus the approach of keeping the plane in close, will result in regularly flying 30-100 feet wide of the runway!



Stage II lowering the Landing Pattern.....F-64

Effect gradual altitude changes by keeping the throttle control stick adjustments small.

Remain attentive to positioning in the Landing Pattern during and immediately after making a throttle adjustment.

Low Passes.....F-67

Go Around.....F-66, I-90, 91

Positioning always takes precedent over throttle!

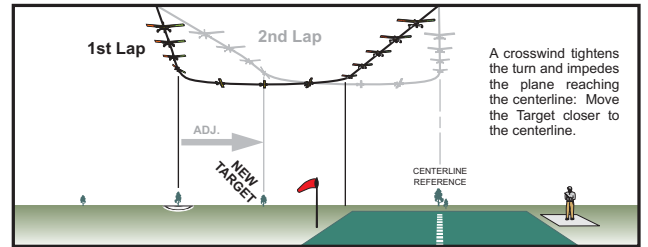
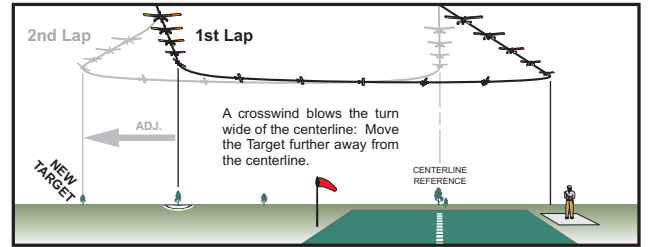
Establish straight wings level flight before increasing the throttle to arrest the descent or effect a climb.

If low to the ground, smoothly Bump up elevator to level out and prevent the plane from running into the ground before even considering increasing the throttle.

Level the wings before using elevator to arrest a descent at very low altitudes.

Increase the throttle further when elevator Bumps are continually needed to prevent the plane from running into the ground.

Keep the turns level with elevator to avoid oscillations at low altitude.



Landing Pattern Summary.....E-62, F-66, 67, H-87

Estimate where to begin the Base Leg Turn from to come out near the centerline reference, and pick a ground reference Target to mark that turning point.

When choosing a Target, consider if the turn is with the wind, it will be wider, requiring the turn to be started further away from the centerline. Or, if the turn is into the wind, it will be tighter, requiring the turn to be started closer to the centerline.

Initiate the Base Leg Turn when the plane intersects the line of sight to the Target.

Keeping the plane in close comfortable view on the Downwind Leg makes the Base Leg Turn Target easier to get to!

Once the turn is started, concentrate on keeping it level, thus avoiding distracting oscillations and excitement after the turn!

Anticipate the direction to correct the turn before it's time to correct.

Calmly remembering which way to level the wings is much easier when the turn is maintained level up to that point!

As the Pattern is practiced, adjust where the Base Leg Turn is started, not the turn itself, to come out of the turn closest to the runway centerline reference!

Keep the plane in close to overfly the runway directly in front.

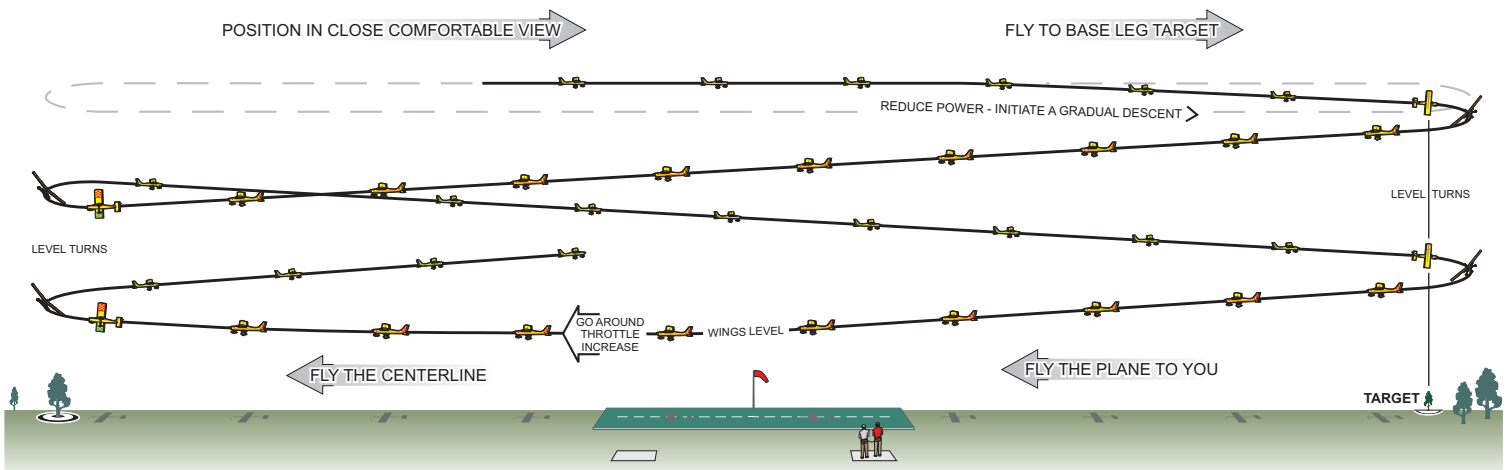
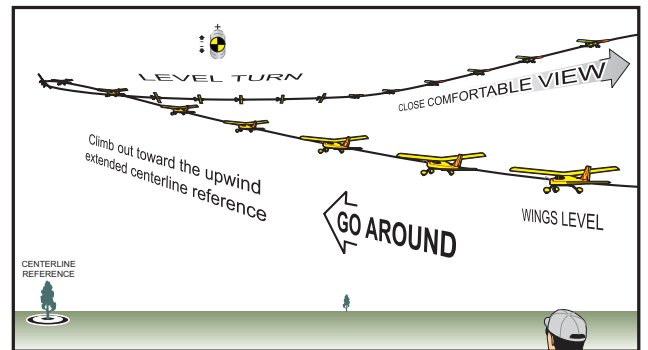
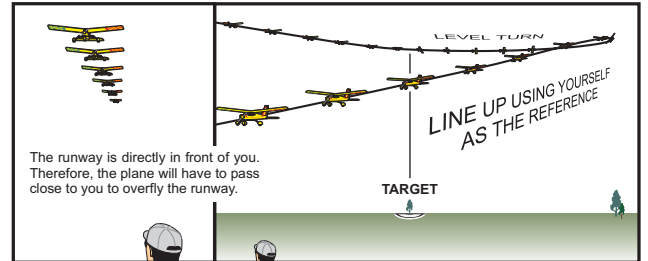
Pause at neutral after each Bump to see if another is really needed.

It's better to apply two separate Bumps than to hold in the aileron.

It's better to apply two separate small Bumps than one big Bump!

When in doubt, Bump the aileron and alter the plane only slightly.

Use Body Rotation to reduce L/R confusion.

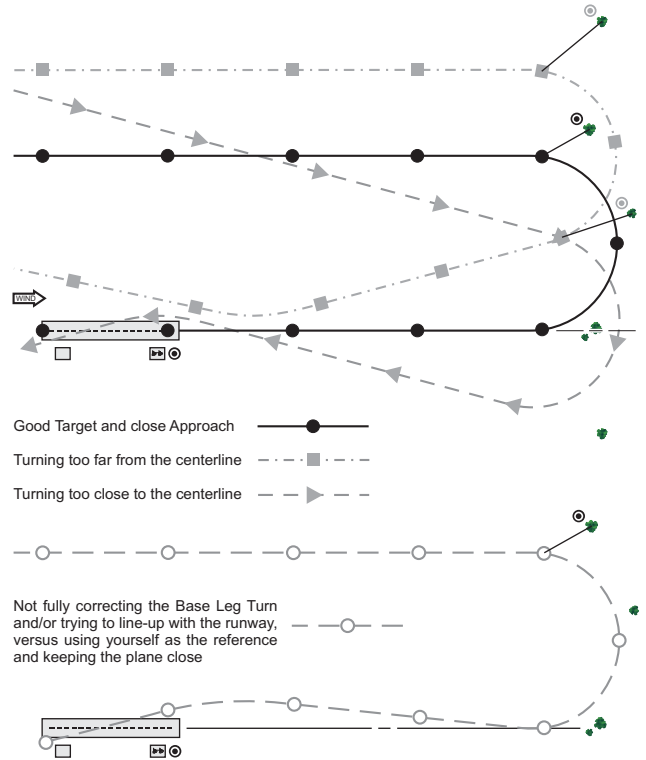


Day 3 Practice:

Stage I Landing Pattern warm-up.....E-57-62

The ease of the eventual Landing will reflect how close the Base Leg Turn is completed near the runway centerline. With consideration for wind, target where to start the Base Leg Turn to come out of it in the area of the runway centerline reference. Stand near the Approach end of the runway to set the stage for an eventual easier Landing after the plane has pasted out in front. As the Pattern is practiced, adjust where the Base Leg Turn is started to come out of the turn closest to the runway centerline reference!

Keeping the plane in close comfortable view on the Downwind Leg makes the Base Leg Turn Target easier to get to! Prioritize keeping the turns level to avoid distracting oscillations and excitement after the turns, especially at lower altitudes! Anticipate the direction to correct the turns before it's time to correct. Remembering which way to level the wings is much easier when the turns are maintained level up to that point! Fully Correct the wings to level before entertaining anything else!



Runway line-up perspectives.....E-57, 58, 62

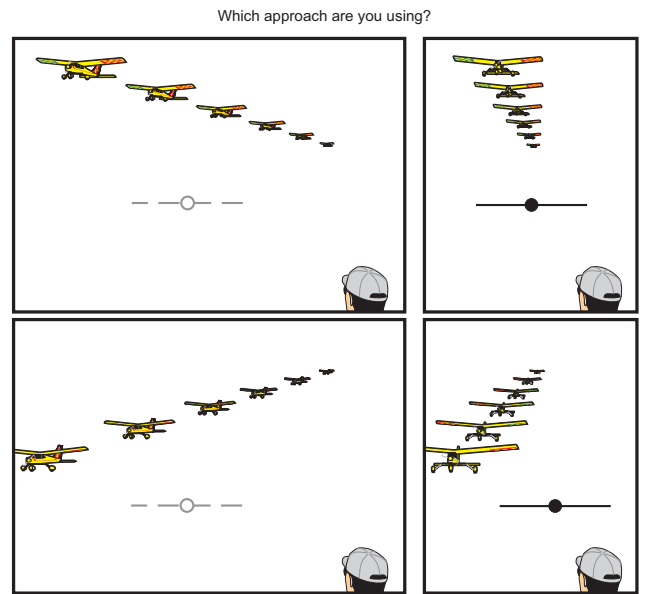
Keep projecting where the plane is heading to, and keep it close. Trying to line up with the runway, versus the approach of keeping the plane in close, will result in regularly flying too far out!

Stage II lowering the Landing Pattern.....F-64-67

Reduce the throttle slightly on the Downwind Leg to effect a gradual descent and continue practicing good Pattern positioning and level turns. Gradually step down to lower and lower overall Landing Pattern altitudes. Be of the mind to just keep practicing Low Passes!

Landing Approach and Flare.....H-82-87, J-95-97

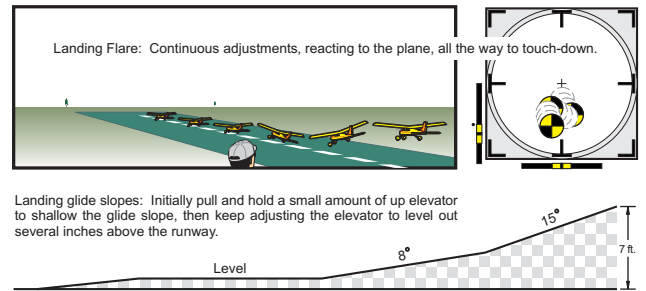
A good Landing is the result of a good Approach. A Landing set-up is approached the same as a Low Pass attempt. Keep the plane in close to overfly the runway directly in front. Pause at neutral after each Bump to see if another is really needed. It's better to apply two separate Bumps than to hold in the aileron. It's better to apply two separate small Bumps than one big Bump! When in doubt, Bump the aileron and alter the plane only slightly. Use Body Rotation to reduce L/R confusion. The engine is idled and a Landing attempted only after it is obvious that the Approach to the runway is lined-up. Make the glide angle a bit more shallow by pulling and holding in a small amount of up elevator starting several feet above the ground. Smoothly input aileron corrections while holding in the up elevator to level the wings or to effect small course changes, if necessary. Continue to hold in and adjust the elevator to try to keep the plane several inches above the ground as long as possible. As the plane slows and settles, increase the elevator to smooth out the touch-down.



Takeoff.....G-71-73

Hold in half elevator throughout the ground roll to unload the nose gear and therefore reduce its sensitivity and over-controlling. Smoothly apply no less than full throttle, since the faster the plane gets up to speed, the more stable it becomes. Use Bumps during the Takeoff roll to reduce over-controlling. Understand that it is not the amount of elevator, but the length of time that it is held in after lift-off that could cause the plane to stall! Smoothly begin neutralizing the elevator as soon as the wheels leave the ground.

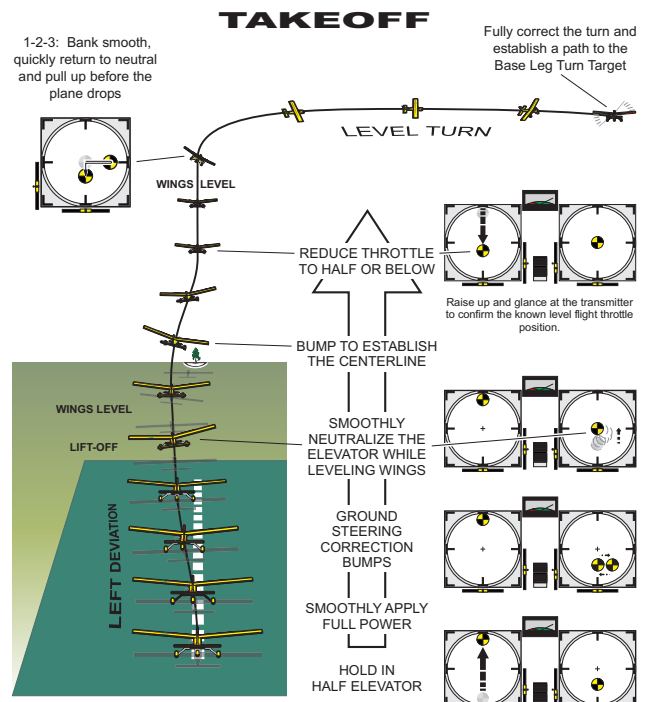
Do not wait to see a steep climb to start taking out the elevator! The most crucial aspect of the Takeoff is keeping the wings level, and thus avoiding entering a turn low to the ground! The combination to avoid is holding in elevator after lift-off with the wings banked, and thus effecting a sharp low level turn!



Climb-out and establishing the Pattern.....G-74-76

If necessary, reestablish the centerline when there's altitude to do so. When a safe turning altitude is reached, smoothly reduce the throttle to approx. half and calm things down before initiating the turn. For best results, initiate the turn inputs from wings level! Regardless of the throttle position, keep the turn after Takeoff level, and thus avoid oscillations after the turn giving the false impression of needing additional, yet unnecessary, throttle adjustments! Prioritize fully correcting the turn and positioning in comfortable view en route to the Base Leg Turn Target, before any further throttle adjustment is contemplated.

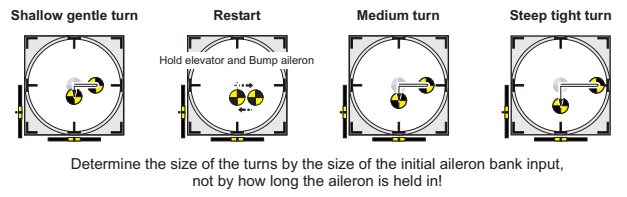
Finessing the throttle to maintain level flight should only be attempted after the plane has settled into a steady-ongoing climb or descent. Do not resort to making a throttle adjustment at the first sign of a climb or descent, since it may only be a temporary oscillation or wind gust. Raising up the transmitter a taking a quick glance at the throttle position after the initial reduction, before the first turn, helps confirm the known level flight throttle position, thus reducing or eliminating the need for further distracting throttle adjustments after the turn!



Day 4 Practice:

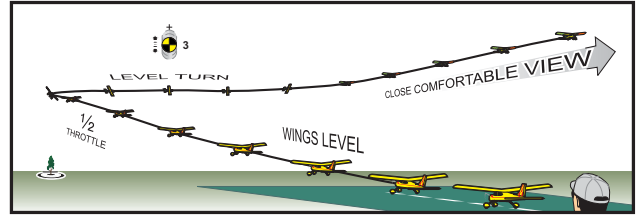
Takeoff.....G-73-76, K-100

Everything else that is planned for the flight depends upon a successful Takeoff!
 Plan each step of the Takeoff, maintaining the centerline climbing out, reducing the throttle before the first turn, initiating the first turn from wings level, the 1-2-3 turn inputs, adjusting the elevator to keep the turn level, and where to fly to after completing the first turn.
 Not correcting a deviation off of the runway centerline during the climb-out will void the chance to enter the familiar Landing Pattern right away, and instead result in 3 or 4 exhausting minutes of just trying to find the Pattern, so prioritize maintaining the centerline during the climb out!
 Glance at the throttle to confirm the approx. known level flight position before turning.



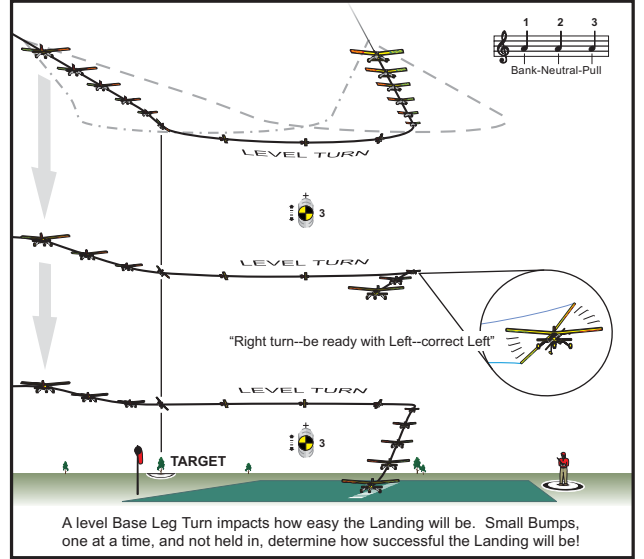
The first Procedure Turn.....A-5, C-38-41, K-100

Stay out of trouble as long as the ailerons are not held in!
 Ensure a safer first turn after the Takeoff by initiating a smooth smaller aileron bank input and performing a gentler first turn!
 Avoid contemplating a further throttle adjustment while ignoring the elevator adjustments necessary to keep the turn level!
 Remembering which way to level the wings is much easier when the turn is maintained level up to that point!



Stage I Landing Pattern.....E-62, K-101-104

As the Pattern is practiced, adjust where the Base Leg Turn is started to come out of the turn closest to the runway centerline reference!
 Keeping the plane in close comfortable view on the Downwind Leg makes the Base Leg Turn Target easier to get to!
 Immediately start complimenting the later Landing by keeping the Upwind Legs in close to overfly the runway directly in front.



Stage II Lowering the Pattern.....F-65

When comfortable with the Landing Pattern, gradually step down to lower and lower overall Pattern altitudes making small throttle adjustments.
 Gradually lowering the Pattern, not intending to land, paces the flight so that pressure is kept to a minimum leading up to Landing.

Out of prompt necessity, smoothly level out with up or down (forward) elevator to keep from flying into the ground and to correct oscillations at lower altitudes.

Low Passes and Go Arouds.....F-67, I-90, 91

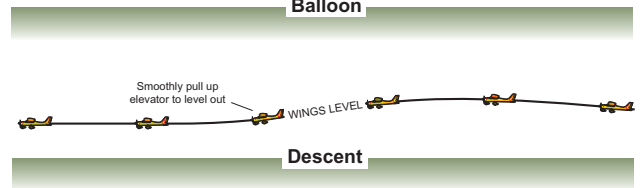
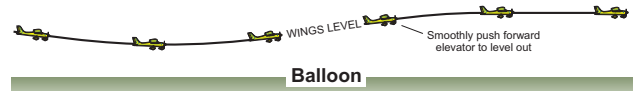
Unless the Downwind Leg is already low, set up a Low Pass initiating a gradual descent on the Downwind Leg.

A preoccupation with the elevator at the start of the turns when low, resulting in unwittingly holding in some aileron with the elevator and spiraling turns, is overcome by briefly pausing at neutral after inputting the bank before pulling up elevator, and accepting the loss of a few feet to make sure that only elevator is then applied in the turn!

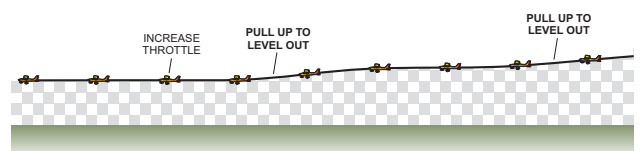
It may be wiser to under-control the aileron bank input when turning especially low to the ground, and possibly having to Restart the turn, than to chance a tight turn with little margin for error!

If the plane starts getting too close to the ground en route to the Base Leg Turn Target, lining up the Approach, or during a Go Around, smoothly bump up elevator to level out.
 If elevator bumps are continually needed to keep from running into the ground, add a little more power along with continuing to use the elevator to prevent any further altitude loss.

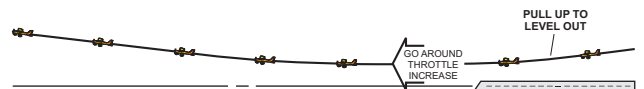
Go Around after a Low Pass using only half throttle to make it easier to manage how much altitude is gradually gained back.
 Prioritize maintaining the centerline during the climb out!
 When the preferred altitude is achieved, glance at the throttle to confirm the approx. known level flight position.



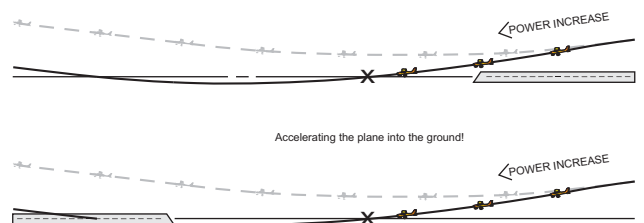
As a rule, if the plane continues to descend after leveling it out with the elevator, the plane is flying too slow to maintain altitude and is demonstrating the need for more power.



As low to the ground as a Go Around usually takes place, up elevator will be needed before or simultaneously with the throttle increase. Increasing the power alone will not arrest the descent quickly enough to keep from hitting the ground.



Significant damage will result if an attempt is made to recover from a low level descent with throttle alone!



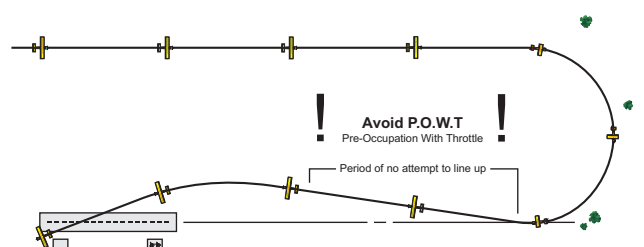
Landing.....H-83-87, K-101-105

A successful Landing is the result of a singular focus on the Landing set-up!

A Landing set-up is approached the same as a Low Pass attempt, so be of the mind to just keep practicing Low Passes!
 Due primarily to wind, the only way to consistently judge when to idle the engine and land on the runway is to approach the runway low, with the plane touching down soon after the engine is idled.
 Do not force a Landing, but Go Around anytime the Approach is unsatisfactory.

The engine is idled and a Landing attempted only after it is obvious that the Approach to the runway is lined up.
 Most Landing difficulties are the result of not starting the Base Leg Turn in the right spot, not keeping the turn level, and P.O.W.T. Pre-Occupation With Throttle and allowing deviations to grow while concerned only with when to idle the engine and land!

Priorities are straight when the Base Leg Turn is fully corrected near the centerline reference, without ballooning or diving after, and a close line-up is emphasized early, resulting in plenty of time to ponder when to idle the engine.



Day 5 Practice:

Takeoff and Pattern warm-up.....C-33, 34

Plan each step of the Takeoff, maintaining the centerline climbing out, reducing the throttle before the first turn, initiating the first turn from wings level, the 1-2-3 turn inputs, adjusting the elevator to keep the turn level, and where to fly to after completing the first turn.

Low Passes can be entered into earlier and more Landings practiced by reducing the throttle earlier on the climb out and establishing a lower Pattern immediately after Takeoff.

Glance at the throttle to confirm the approx. known level flight position before turning.

As the Pattern is practiced, adjust where the Base Leg Turn is started to come out of the turn closest to the runway centerline. Keeping the plane in close comfortable view on the Downwind Leg makes the Base Leg Turn Target easier to get to! Immediately start complimenting the later Landing by keeping the Upwind Legs in close to overfly the runway directly in front.

Low Pass and Landing practice.....H-82-87

Setting up Low Passes and eventually the Landing begins with attention to the height of the Downwind Legs that set them up.

Unless the Downwind Leg is already low, set up each Low Pass initiating a gradual descent on the Downwind Leg. The best way to relieve the pressure of Landing is to not think about Landing, but to be of the mind to just keep practicing Low Passes, until it becomes obvious that a Landing can be attempted and the engine idled.

Over-shoot.....I-90-92

Trying to force the plane down with down elevator in the event of an over-shoot Landing attempt will effect a rapid speed descent that would likely result in continuing off the end of the runway anyhow, and thus the best thing to do in an over-shoot is Go Around!

To keep the pressure off, be of the mind to simply set up a lower Low Pass after an over-shoot, and not to land!

Set up a lower Approach after an over-shoot by either flying further out before turning Base to lose more altitude prior to reaching the runway, or by establishing a lower Downwind Leg so that there is less altitude to lose after idling the engine.

Under-shoot.....I-93

If the plane starts getting too close to the ground on Approach, use the elevator to pull out of the descent, not to climb, but to level out and stretch the glide.

The wings must be leveled before pulling up elevator to avoid turning low to the ground!

If elevator is continually needed to keep from running into the ground, add a little power to keep up flying speed, along with continuing to use the elevator to prevent further altitude loss. To avoid significant damage, don't even think about advancing the throttle until after leveling the wings and pulling out of the descent!

Trimming.....G-97, K-101

Get comfortable locating and moving the aileron and elevator trims, both looking at them and without looking, beforehand.

The most important aspect of Taking Off and dealing with an out of trim plane is continuing to fly the plane and getting it high enough to be able to safely take the fingers off of the stick and make trim adjustments.

Try to establish a high version of the Landing Pattern and set the throttle to a comfortable speed, and then what to do with the trims will start becoming obvious when certain inputs have to be continually repeated to keep the plane level and in the Pattern.

Trim first whichever control is demanding the most attention. It may help initially to raise up the transmitter and glance at each trim adjustment as it's being made.

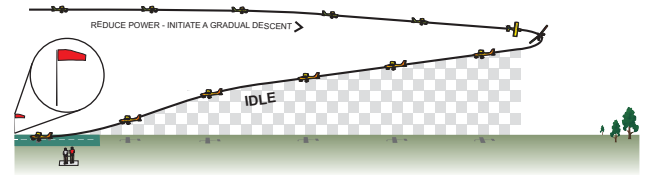
If the plane is prone to diving, putting it into a slight climb before taking the fingers off of the stick will buy a little more time to make the elevator trim adjustment!

After each trim adjustment, fly the plane for awhile to be certain whether further trim adjustments are truly needed, or whether the next altitude change or deviation is just a temporary oscillation, due to a gust of wind, or time for a throttle adjustment.

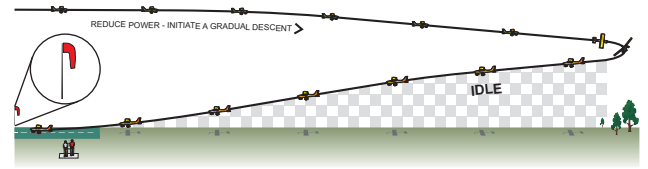
Keeping the turns level with the elevator is vital to avoiding oscillations that can give the false impression of needing, unnecessarily, an elevator trim adjustment.

The trims are not used to level or straighten out the plane, the control stick is used to put the plane straight and level. The plane is trimmed when it remains in the attitude it is put.

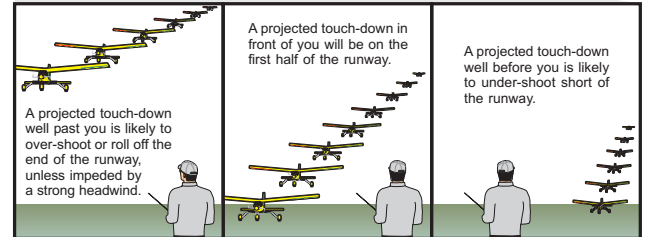
A headwind impedes the plane's forward progress, resulting in a shorter steeper descent, and thus having to wait to idle the engine until near the end of the runway.



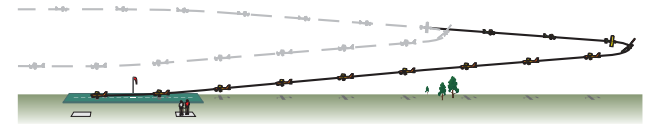
Little or no headwind results in a longer glide, and having to idle the engine further out.



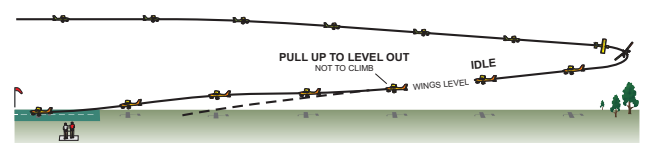
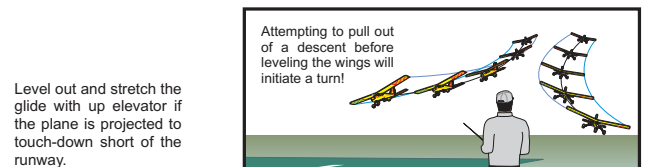
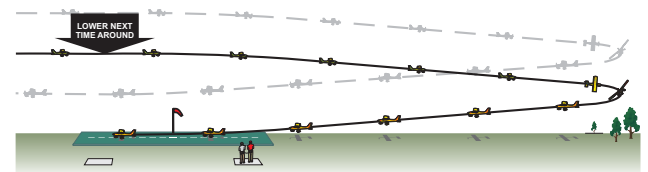
To help determine when and whether to idle and attempt a Landing, compare the plane's projected touch-down with your position--aware of your position along the length of the runway:



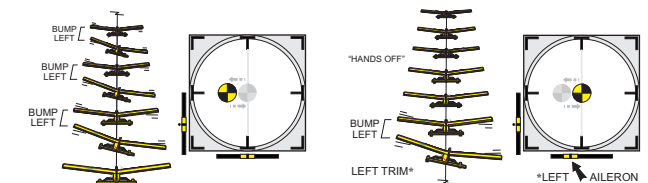
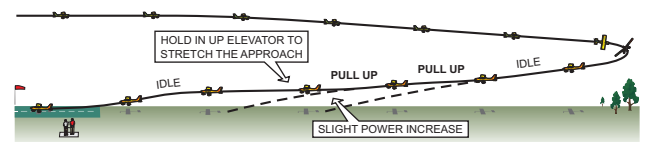
Compensate for an over-shoot Landing attempt by repeating the Pattern, but executing the next Base Leg Turn further out.



Or, compensate for an over-shoot Landing attempt by managing the throttle to establish a lower Downwind Leg next time around.



Add a little power to keep the plane flying when it becomes apparent that it is not going to reach the runway after repeated elevator inputs.



Out of trim to the right requires continuous Left aileron Bumps to compensate, and vice-versa.

Trim the aileron to the Left in-place of your having to Bump or hold in Left aileron, and return your fingers to the control stick and flying the Pattern.

