Flare©

Here goes using a C-150. With very slight changes of procedure the method can be made to fit almost any single engine aircraft.

First I must assume that you are capable of hands-off, full flap descent from 600' to 100' at a constant airspeed of 60 knots which will allow you to keep the runway numbers in view with a power setting of 1500 rpm. This is the stabilized approach often mentioned, frequently sought, and seldom achieved without adequate trim skills. You are not ready for landing practice until you can demonstrate, at altitude, a descent 500' hands-off on airspeed. In the C-150 you will be close if you are trimmed for level cruise. Pull the C.H. reduce power to 1500. Hold heading and altitude and put in full flaps at the white arc. Plane should begin a descent at 60 knots. This is the same procedure you would use in making a short approach.

With practice and experience you will learn to visually detect the 'sweet line' across the windshield that tells you that your approach is relatively high or low. A constant airspeed is essential to make this determination quickly and accurately. Being high, with the runway moving toward you, in a full flap configuration, requires that selective power reductions be used as required to stabilize and set the 'sweet line'. After full flaps and power off, your last recourse is to lower the approach speed to increase the sink rate over distance. The best practice for correcting the high approach is to use the suggested procedures while making a series of go-arounds at ever lower altitude over the runway.

The low approach is quite deceptive in making the pilot with too little experience think just a little more power, a knot or two lower speed, or a change in pitch will salvage the situation. Being low, can most safely be corrected by using full power and a 60 knot airspeed to re-acquire the desired glide path. Practice doing this by time since visual cues will be missing. Do not re-trim during the process. Of all approach procedures, the use of full power in this manner requires the greatest anticipation and skill of application. Don’t let the nose pitch up. Practice and master the process at altitude before using on approach.

The best ground demo that I have is to lower the tail of the aircraft very slowly as you, in the pilot’s seat, very slowly bring the yoke back and up. The intent is to get the elevator full up at the same moment the tail touches the ground. During this process the student should be noting that the visual horizon remains stationary as the pitch axis rotates. A landing is an act of faith. You must believe that a good landing will result even though you can’t see the runway.

We are now down to the last hundred feet of the approach. You can now safely ignore the airspeed indicator and rely on visual and kinesthetic senses. You are entering the round-out. This is the transition from 100' to about 3 or 4 feet above the runway. You look down the runway much as you would in an automobile going 60-70 miles per hour. You already have the required visual skills. Landing is just a new application. Once you have leveled off, the round-out becomes the flare. At most, use only two fingers on the yoke.

Where you look in the flare makes a great difference in the landing to follow. Look down at the ground and you will probably flare too high and give the spring gear a chance to do its thing. Focus too

far and could fail to roundout and do a kangaroo with wings imitation until the nosewheel collapses.

There is a football skill that does transfer readily to the flare for landing flying skill. I don't wish to imply that football players make better pilots but I do believe that they can transfer a visual skill to flying to make the better landings sooner. Football players, as a group, exercise their visual skills to be able to see straight ahead while being aware of what is occurring at the outer edges of their peripheral vision.

As a pilot you need a similar ability to see at a distance the end of the runway until the nose rises to cut off the view and at the same time you must have sensed the position of the visual horizon. As you move the yoke back and up, you are attempting to rock the aircraft on its pitch axis in such a way that the visual horizon remains constant. If the horizon seems to rise, it means that the aircraft is sinking. If the horizon seems to fall, it means that the aircraft is rising. Either of these movements can be controlled, to a degree, by moving the yoke back or holding it still.

The kinesthetic sense that lets you sense rise or fall, as in a slow elevator, in conjunction with the peripheral movement of the horizon give you a dual reference as to when and how much to move the yoke back and up. Concurrent with this up/down potential we have a deceleration occurring. As the aircraft slows it requires ever greater deflection of the elevator to give the same effect. We are endeavoring to rock the aircraft on its pitch axis with the elevator until it stalls without any fall in the visual horizon out the sides of cockpit.

The ideal, at this time, is that the aircraft has reached its stall angle of attack on the pitch axis. The stall warner lets you know of this occurrence. The elevator is to the back stop. The aircraft makes a slight drop to the ground and is through flying. The pilot continues to hold the yoke full back and up. The flaps are removed while the nose wheel remains clear of the runway. If no power is added, as for takeoff, the nose wheel touches and the strut compresses to allow steering with the rudder pedals. With power the takeoff can proceed without the nose wheel ever touching.

Salvaging a poor flare is best accomplished by going around. The delay in the human response to sense input and then react is just sufficiently out of synchronization to make any corrective response be in phase with what the aircraft is doing and exactly out of phase with what you want to accomplish. Can a poor flare be salvaged? Yes. The question should be, "How many poor salvaged landings can you afford while you're learning how to do it?" Make the go-around, its cheaper.