Cirrus Operational Standardization Guidelines

In using this guide, it is important to distinguish between *procedure* and *technique*. Procedure is that which *must* be done, or which must be done in a proscribed manner. For example, it is procedure that the frequency for an ILS must be loaded prior to executing the approach. Technique is *how* something is accomplished, when room exists for it to be safely accomplished in a variety of manners. For example, one pilot may manually enter the ILS frequency; one may load the approach in the GPS and let the frequency auto-load.

For most areas where several techniques are acceptable, I have attempted to identify the technique which is most efficient. This is the technique I teach to transition students, or those who have not developed a technique for the specific area.

What follows are the most frequently seen "hot" issues in GA pilots, especially with regards to the SR-22. It is certainly not an all-inclusive list, but rather the items that seem to either be done inefficiently by many pilots, or things never taught to the pilot at all. Every item is here because I have seen it, or the situation it tries to prevent, at least once.

Preflight

Fuel Sample- 16 ounce GATTS jars are the recommended container for fuel sample. Smaller samplers do not allow for enough fuel to be taken for adequate testing. At least two inches should be taken from each drain, and if uncontaminated, the fuel should be poured back into the tank through the filter.

Brake Temp Dot- The indicator of over-temp is the white square inside the blue sticker, not the blue itself. The white turns black if brakes exceed safe heat. Note that the "black" may appear grey, depending on how hot the brakes got. This should be visually checked by the pilot both before and after each flight. Checking after flight ensures that a problem may be resolved before the next planned flight.

Alt 1 Wire- One of the alternator's recurring problems is the field (thinner) wire attached to the side becoming loose. This wire is visible from the cowl opening and inspection should be performed on walk-around.

Aileron Hinge and Safety Wire- A Cirrus SA advises close inspection of the aileron hinge bearings to assure that the bearings are fully seated in the aileron hinge. Additionally check the integrity of the safety wire on the aileron hinge.

Snapping Oil Latches- The latches which hold the cowl access closed panel will chip at the cowling paint if they are allowed to "snap" open. By using your thumb to catch the latch, it can be released slowly.

Using Light From Oil door for Cowling Check- With the cowl access door (for checking oil) open, there's quite a bit of light that enters the cowl. This makes looking in through the openings at the front of the cowl quite a bit easier on preflight.

Final 45 Degree Check- Always perform a last walkaround after the official preflight. Stop at a point about 45 degrees off the longitudinal axis of the plane, and look under the plane for chocks, debris, etc. On the final walkaround, pay particular attention to fuel caps, towbars, cowling access door closed, and baggage door closed. Pilots often intend to "get back to something", and then forget it wasn't accomplished. Chocks are the most notorious example.

Startup

Paper Checklist for all Normal Phases of Flight- Electronic checklist cannot be updated, and causes the loss of MFD screen for other tasks. Paper checklists allow for continued use of the MFD, and customization of the checklist as necessary. Emergency checklists, in contrast, are better suited for use from the MFD, for quick access.

Battery/ Alt On- "Voltage Checked"- Most pilots do not check voltage at either:

- Batteries on, when 24V should be seen, or
- After switching alternators on, when 27-28V should be seen.

These are important to check, to determine that battery health is good for start, and to ensure that the alternators are functioning.

Engine Start- Most pilots hinder, rather than help, the starting process with excessive throttle movement. For any start other than a flooded start, the power lever should be set to one-quarter inch open prior to engaging the starter. One-quarter inch is barely more than the width of a pencil. Once the engine begins to run, the power lever should not be moved until the RPM has exceeded 1000 RPM, and then slowly.

Oil Pressure After Start- As above, many pilots do not check for oil pressure immediately after start.

Seat Belts Snug and Riding up Issue- If SR-2X seatbelts are not fastened very tightly, the shoulder harness retraction reel will pull the buckle up so it's sitting on the wearer's stomach. In an accident, all the force would be transmitted to the stomach, rather than the hips, a bad situation. Back seat passengers especially seem susceptible, so always check rear passengers for proper tightness prior to takeoff.

Check for 6 EGT's After Start. If a fuel injector is plugged/ two spark plugs in the same cylinder are fouled (unlikely, but both have happened to me), there will be no combustion in that cylinder. No combustion equals zero (or very low) EGT. By checking 6 EGT's right after start, and before taxi, we save wasted time taxiing to runup area (where you'd notice with roughness at 1700 RPM).

Strobes Off at Night. The strobes are an annoyance to other aircraft at night. The FARs allow for disuse of anti-collision lights in this situation. Having NAV and Landing Light on should make the aircraft highly visible. The exception is crossing a runway, when all lights should be momentarily on.

Taxi

Always Have Taxi Diagram Out, CMAX/Chart View/Safe Taxi is Best- In the past several years, the FAA has placed runway incursion avoidance at the top of their action list. In response, many Part 121 operations now make it a requirement that one crewmember have out and available a taxiway diagram for all surface operations. If the airplane is moving, an electronic airport chart should be displayed (if installed).

1,2,3,4 on CMAX- CMAX starts up in night mode, which is somewhat difficult to interpret. To remedy, from the first CMAX screen viewed (taxi diagram for the airport currently located at) press the top four buttons on the left side of the MFD (top to bottom), with slight pause in between each. This turns CMAX to day mode, turns FP overlay off (another screen cluttering option), and returns to the taxiway chart. This sequence ("1,2,3,4") is much easier for pilots to execute quickly than having to look at each option as it comes up and interpret appropriate button.

Radio 1, 2 use- SOP is to make all radio calls on the number 1 radio, including calls to ground. COMM2 is for ATIS/ AWOS/ FSS/ and 121.5 only. This is contrary to the UND method, but in accordance with nearly every other industry best practice on radio use. Switching from ground on COMM2 to tower on COMM1 leaves a pilot open to the possibility of forgetting to switch. At a smaller airport, the same controller may be working ground and tower, and thus issue a takeoff clearance over the ground frequency (not realizing the pilot called on ground). The pilot gets in the air, still transmitting and receiving on COMM2 and attempts to contact approach with no luck. Workload and confusion increased at a very critical (low altitude, transition to IMC) time.

Monitor 121.5- After 9/11 the FAA issued a NOTAM requiring any aircraft capable of doing so to monitor 121.5 in flight. After ATIS is acquired, place 121.5 in COMM2 and leave COMM2 receiving on the audio panel. This can be helpful if you miss a handoff and have traveled out of range of your last frequency. ATC may attempt to contact you on 121.5, but you won't know if you're not monitoring.

Speed, RPM on Taxi- This has been a hot issue with Cirrus. Be very sensitive to the RPM setting on taxi. Generally speaking, if the RPM is much over 1000, and the aircraft is not going very fast, the pilot is riding the brakes. Brake application required for steering, even in a crosswind, should never be enough to cause temp problems. All the brake fires to date have been traced to using brakes to modulate speed, rather than RPM. The brakes should never be applied to slow down unless the power is at idle, otherwise it's like driving a car with your feet on the gas and brake pedal at the same time.

Dim PFD for Hold Short- When a clearance to taxi but hold short of a runway or taxiway is received, dim the PFD to black. This way, the black PFD will catch your attention every few seconds, and keep at the top of the mind that something unusual must occur

(stopping taxi before reaching the active). When clearance to cross is received, the PFD should be returned to desired brightness.

Write Down Taxi instructions- Always write down taxi instructions. With runway incursions so high on the FAA's action list, this is a small thing which can have a big impact.

"Clear right, clear left, cleared across"- Prior to crossing any runway, active or not, at a towered or non-towered airport, look right, say "clear right", look left say "clear left" then say "cleared across". The same should be conducted before taking the active with "clear on final, clear the wrong way (aircraft landing downwind), clear on other runways, clear for takeoff (or position and hold)". Additionally, all lights should be turned on prior to crossing a runway, and turned back off when clear on the far side.

No Checklist/ Avionics Setup While Taxi- Absolutely no activity except for taxi and necessary radio calls should be conducted while taxiing. No checklists, no checking flight controls/ trim, etc. All attention should be on taxiing and maintaining SA on the ground.

Runup/ Checks

Check HSI to compass- Prior to flight check the HSI heading to the wet compass heading. Up to ten degrees difference is common- another way to check the heading is when taxiing in a straight line, the ground track line should point straight up to the top of the HSI, not off to the side at all.

No 2000 RPM check- This check is no longer required by Cirrus, and is not taught as part of transition training. It may be necessary to go momentarily to a higher RPM than 1700 to verify proper ALT 2 operation, however.

EGT's on Mag check- When switching to one mag, combustion is only happening from one side of the cylinder. Because of this, combustion takes longer, and is incomplete when the exhaust valve opens. The fuel/air mix exiting the cylinder is still combusting as it passes the EGT probe, thus the EGT's will be higher on one mag than on both. If a cylinder's EGT does not rise on one mag, it is mostly likely due to a fouled spark plug (it was already only combusting off one plug). If an EGT plummets rapidly on one mag, it is also due to a fouled plug (you just switched to the bad one, and now there's no combustion at all). If this happens, retard the throttle to idle before switching back to BOTH, and clearing the plug. Otherwise, unburned fuel an air in the cylinder/ exhaust can combust rapidly, and cause damage.

Voltages on MFD- During the run-up check main(s) and essential bus voltage on the MFD, not just on the voltmeter. The MFD is far more precise, as well as being the only source of main bus voltage. For non-Perspective aircraft, Main voltage should be 28V, with Essential at least 28.0V. Alt 2 may not put out full 28.75V until over 2000 RPM, so as long as the voltage is at least 28V, it's working. For Perspective aircraft, Main 1 should be at 28V, with M2 and Essential at least 28V and 27.2V, respectively.

AP Checks- Complete the AP preflight check prior to every flight. Even for a flight in VMC, the AP may be necessary in an emergency or abnormal situation. A failure of communication between the PFD and AP is common on startup, and easily overlooked if the AP is not tested. At a minimum, for Entegra aircraft, ensure that "AP RDY" is annunciated at the top of the PFD.

Boxing Controls: The correct procedure to check flight controls free and correct is to make a "box" with the yoke, once with full left rudder, and once with full right. Holding full left rudder, start with yoke full left, hold it there and move it full aft, hold full aft and move full right, hold full right and move full forward, hold forward and move full left. Repeat with right rudder. The PIC now knows that there is no constriction in the "corners" of yoke travel- something which would not be discovered with the common left/ right followed by aft/ forward check.

Flight Controls Free and Correct: Many pilots simply verify the control surfaces move when the yoke is moved- this is a dangerous habit! Several accidents have occurred when airplane's controls were rigged backwards after maintenance- i.e., a left yoke input resulted in the aircraft rolling right. Merely looking for movement of the surface in question would not detect such a problem- the PIC must verify that the surface moves in the *correct* direction. Left yoke should result in the left aileron being raised, aft yoke should result in the elevator moving up, and right rudder pedal should move the rudder right. These facts should be committed to memory, and correct movement checked on every preflight and run-up.

Trim: Rather than simply selecting and confirming takeoff trim, first confirm all four axis work properly- left then right, forward then aft, then set takeoff trim. It has happened that trim failed in one direction only- if it is merely confirmed "set for takeoff", such a failure might be overlooked until flight.

Flap Position and Light: With full yoke travel to the left or right, the lowered aileron should almost exactly line up with the flaps in the takeoff position- a very useful confirmation of proper flap extension and aileron travel. The LEDs which illuminate to display flap position receive input from the same position switches which tell the flap motor to stop running. Thus, if the flaps are selected up or down and the appropriate light is not on, the flap motor will continue to run, trying to raise the flaps which have reached the limit of travel. This can create a fire hazard, as the motor is not designed for continuous operation. Always confirm desired flaps are: "Selected and *Indicated*"

No PFD map- For Entegra aircraft, I do not recommend use of the PFD/ HSI moving map. It greatly clutters the display, and we have a fantastic moving map (MFD) only 12" away. With the PFD map displayed, the track line is much harder to see.

GPS 1, 2 Display (Entegra only)- Standard in-flight setup is NAV2 (map) on GPS 1 with data fields off, set to track up. This way left/ right corresponds to pilot's view for airspace visualization, SA re road location for engine out considerations at night/ IMC, etc...The MFD airspace display is NOT accurate enough to use for avoidance, as it uses approximate, not exact airspace shapes. The Garmin map is, and should be displayed anytime near Class B, restricted area, etc...GPS 2 should display the traffic page, unless needed for other task (stormscope if convection is an issue, looking up info on nearest airports/ FSS, etc.). Recommend traffic page be set to normal view as this will show anything within 2700' vertical of the aircraft; above, below or unlimited gets very cluttered and can make it hard to see traffic which could be an issue.

MFD Map Display(Entegra)- The map screen preference is a highly personal thing, these are the combinations I have found to maximize SA.

- <u>North up</u>- page is oriented the same as enroute charts, approach charts, sectional, etc. As well, airspace and geologic features are more familiar viewed north up, so general SA is improved. Times forward or center is valuable might

be visualization airport position on visual approach, or viewing Nexrad for deviation information, but North up should be the "parked" mode.

- Maximum detail- Declutter momentarily if necessary, but important info is lost even at one declutter setting.
- Terrain view- exception is during night flight if terrain view compromises night vision.
- Nexrad On
- Traffic Normal- to avoid clutter, unless looking for traffic more than 2700' above or below.
- Lightning to Datalink- unless actively attempting to correlate strikes to Nexrad pictures or to the active FP, the Datalink view gives more useful info, in conjunction with stormscope in strike mode displayed on GPS2.
- Weather Reports ALL- METAR flags give very useful weather SA info, as do AIRMET/ SIGMET areas. If AIRMET/ SIGMET display is cluttering the screen, METAR only is appropriate

"Position and hold" or "cleared for takeoff", All Lights On- This makes the aircraft more visible to any other aircraft on final, crossing the runway, or taking off or landing on an intersecting runway.

"1-2-3-4-5-6-7-8"- After the before takeoff checklist is complete, back it up with this check after takeoff clearance is received. Count out loud "1.2.3.4.5.6.7.8" as you touch each item:

1. Fuel on proper tank
2. Boost On
3. Mixture Rich/ As Required
4. Flaps 50%
5. Pitot Heat as required
6. Magnetos BOTH
7. Trim Takeoff
8. Seat locked in position

It takes only a second or two to complete, and often catches an item missed/ deferred.

Takeoff/ Climb

Takeoff on One Magneto- It is easier than one might think to perform a magneto check and leave the switch in a single mag position. Include magneto switch position in the "1-2-3-4-5-6-7-8" every takeoff. If you do takeoff on one magneto, it should be very apparent on the E-Max/ Engine page, as EGT's will be at least 200F hotter than normal.

Rotate to Pitch, Holding Vy to 1000' AFL- After initial rotation, the pilot should attempt to maintain a pitch of approximately 12 degrees until flaps are up and airspeed stabilizes. Most pilots do not set high enough pitch on takeoff and exceed Vy by 10-20 KIAS before reaching 1000' AFL. The first 1000' after takeoff are the most critical if an engine failure occurs, with no chance of completing a 180 to land, and very little time for CAPS deployment. Thus any speed in excess of Vy means altitude wasted in a low altitude engine failure.

Flaps up at 80 KIAS and Clear of Obstacles- At most airports, the flaps should be brought up almost immediately after takeoff. Some pilots leave them down until an arbitrary altitude. Flaps simply reduce climb performance once the aircraft has broken ground, and are no longer required.

No Turns <400'- The first 400' AFL of climb should be straight ahead, unless obstacles dictate otherwise. All attention should be on establishing a scan and trimming for Vy. Once 400' AFL is reached a turn may be initiated to the assigned heading.

Enough Right Rudder- Many pilots use insufficient right rudder on initial climb. Remember that the SR22 has the engine of an A36 or Saratoga, but the rudder arm of a 172. Lots of power and a short rudder arm means they need to push hard on the rudder at high AOA climbs. This is also important to monitor carefully on stalls and go-arounds as well. Very few pilots are proficient at this without much prompting.

Climb Full Power (Normally Aspirated)- SOP is to climb with full power, 2700 RPM to cruise altitude. This is beneficial as it-

- Gets the plane to cruise altitude quicker, minimizing time close to the ground.
- Minimizes time spent at low IAS, and thus low cooling
- Allows richer operation of the engine, and thus cooler operations ROP (climb setting)

There is no time limitation on full power in the SR-22. This is not true in many high-performance aircraft; many pilots reduce power after takeoff because "that's how I've always done it". If desired for noise abatement, RPM may be reduced slightly, however, this is not SOP, and should only be done in highly noise sensitive areas. Retarding the RPM at high power settings causes the peak pressure pulse in the cylinder to happen sooner, which is detrimental to long-term engine longevity.

Climb Checklist Above 1000- At 1000’ AFL, the pilot should complete the climb flow (normalize EGT’s, check engine indications and switch to MFD map if desired, pitch down for cruise climb, and boost off unless required). Once the flow is done, the pilot should at some point complete the paper climb checklist.

Cruise

Leaning Slowly- The E-Max EGT display (as with all of the engine displays) lags significantly behind reality. If lean assist mode is used but leaning is conducted too rapidly, the E-Max will sense a "false peak" EGT, as the temperatures will never have had time to read as high as the true peak EGT. So if peak EGT is really 1500F, the E-Max might sense peak at 1400F. Leaning to 50F LOP (1350F), the engine is really operating at 150F LOP. Note that as long as the engine is smooth, this is not harmful; however, a significant amount of power is being given up. Correct procedure is to lean quickly to a FF above that where peak EGT will occur, then lean very slowly, no more than .1GPH decrease per second, so as to allow for a true peak EGT capture.

NRST on MFD vs. GPS for Diversion- It is important to be aware of the differences between the MFD and Garmin nearest pages. Each has an advantage-

- MFD
    - Displays names of airports, useful if the pilot is in a familiar area and knowledgeable about the relative merits of nearby airports
    - Displays Wx symbol, useful if in IMC or above an overcast layer for determining if safe approach can be completed
    - Display more airports on the screen than the GPS
- GPS
    - Displays lengths of longest runway at airport
    - Displays best IAP available (ILS, GPS, VOR, VFR, etc...)
    - Allows direct to operation without data entry

Autopilot-Stec 55

Using GPSS- Use GPSS mode (not NAV) whenever navigating via GPS, including on an approach. GPSS is far smoother, more accurate, and will follow a bend in the FP better than NAV.

No FD on For Takeoff- Per a recent Cirrus Training Bulletin, the limit on engaging the AP below 400' applies to the FD as well. So technically setting up the FD on the ground for takeoff is violating an aircraft limitation. More practically, the FD will only command a mix pitch up of 9 degrees. On takeoff desired pitch is higher, and we never want to have the FD displayed unless we are following it in both roll and pitch.

180 HDG Reversal/ Slow Turn- Putting the HGD bug exactly at the bottom of the HSI will result in no turn. If the bug is turned more than 180 degrees the direction of turn will reverse, and a very slow turn will result from putting the bug too close to the bottom of the HSI. A good way to avoid all the above is to never put the HDG bug within 45 degrees of the bottom of the HSI.

HDG + NAV mode- Some pilots are unaware of the function combining HDG with NAV (pilot selectable intercept angle), and some may just not fully trust their understanding of the mode. In any case, this mode greatly reduces workload by allowing the pilot to think ahead to the next step without having to be as vigilant to catching the moment the HSI needle begins to move. HDG can be combined with NAV, GPSS (hold HDG down during both presses of the NAV button), and APR modes.

Preselecting Next Altitude on IAP's- On coupled non-precision IAP's, or legs on an ILS prior to the GS capture, the next altitude (and next desired VS) should be set in the PFD once the current altitude is captured. Current altitude captured should always be confirmed by VS and ALT on PFD changes to ALT only, and VS bug turns from solid to hollow. Be alert for not confirming the altitude has captured, and setting the next altitude too early, leading to the aircraft continuing decent below the appropriate altitude. When a pilot is hand-flying, it may be advisable to leave the altitude bug set to the current altitude to provide extra SA, and only change the bug once starting down to the next altitude.

GS Mode Tricks- It's important to be aware and of and proficient in:

- How and when to disable auto GS capture (APR button- used when holding on LOC, or when conducting LOC only approach with GS unreliable but not removed)
- How to force manual GS capture (ALT button in ALT mode, or ALT-ALT if not in ALT mode- LOC must be captured)
- Limits of capturing GS manually (aircraft limitation to max of 1/3rd of a dot above GS)

VS-ALT out in- Always push VS, hold it, then pushing ALT; do not trying to push both simultaneously. This is a very common error, leading to the autopilot capturing current altitude if the ALT button is pushed first.

VS- ALT to Correct Alt Change After Barometer Setting Change- When a new baro setting is received, the AP will continue to fly the old pressure altitude. Rather than counting how many feet of correction are required, and clicking the ACP knob for 20' increments, simply push VS and ALT. The AP will command a 300 FPM climb or decent as appropriate, and capture the desired alt (provided the altitude bug is still set to cruise altitude). This saves time performing math and counting clicks.

VS- ALT with zero VS selected- This results in 500 FPM up or down as appropriate to change to the new altitude. For enroute operations 500 FPM is usually perfect, so this saves time dialing in a VS on the PFD.

IAP's/ Instrument Flying

Using AUX on PFD vs. Bearing (Entegra)- On IAP's performed by reference to a VLOC signal, no distance information is available on the PFD. An efficient way to get this info is to set the AUX field to GPS1. This will present distance to the next waypoint, which as long as the approach has been loaded (as it always should be), will normally be the next fix on the approach. Now the pilot's scan can be confined to the PFD, with only quick glances at the MFD to raise SA- no looking at the GPS itself is required. The advantage of AUX over the bearing pointer is a significantly less cluttered PFD. The bearing pointer will be pointing straight up and down on an approach, blocking view of the track indicator- one of the most essential pieces of information we have.

Using Bugs, Especially Alt, When Hand-Flying- The brain is not able to interpret numbers as easily as pictures. This puts pilots at a disadvantage when using vertical tape displays, as compared to a round dial. One workaround is always setting the altitude bug to the altitude desired. The picture of the black box (current altitude) not matching up to the magenta box (bug on desired altitude) is very easy to interpret, and correct for. Additionally, having the altitude set serves as a "scratch pad" in that the pilot can see the desired altitude for level off if climbing or descending, without having to write it on paper.

Activating Approach When Cleared to IAF/ Receiving Vector- The approach should be activated when either:

- Cleared direct to an IAF
- The first vector for the approach is received

Reactivating the approach, once the approach has commenced, can lead to incorrect sequencing on the approach. If doubt exists as to if the approach was activated or not, the correct procedure is to enter the FP, and see if the active WPT is a point below the approach header. If so, the approach is already active.

Slow Below Cruise, go to Approach Level- Once the aircraft is slowed from cruise setting, the pilot should transition to approach level setting, with flaps extended once below 119 KIAS. Some pilots simply "slow down a little" as they cross the IAF with the intention of slowing to final approach speed later. As workload increases, they often forget to slow further, and end up flying the approach at 130-140 KIAS. Again, operating by the numbers, and in one a just a few configurations, makes it dramatically easier to operate a high performance aircraft in IMC.

Missed with "OBS, GPS"- The G-430 has the full missed approach procedure for every IAP in its database. SOP for a missed is to fly the missed using GPS guidance, even for an approach that was conducted using VLOC guidance. Advantages are-

- GPSS mode available for more precise AP tracking
- Auto-slew function on PFD enabled, for lower workload
- Holding assistance from GPS at holding waypoint

SOP for missed is:

- Power Up
- Pitch Up
- Clean Up
- OBS (when appropriate to sequence to missed approach waypoint)
- GPS (verify/ switch CDI mode to GPS)

Using Green Triangle(Entegra)/ Projected Track (Perspective) on Hold/ for Vectoring- The green triangle displayed on the compass rose on the MFD map page represents current ground track. Pilots can use this to project the airplane's track, and see where a course will be intercepted. This is especially useful on parallel entries to holding patterns. It's common to see a pilot not select a large enough intercept angle after turning inbound, and not intercept the holding course until after station passage. By visualizing the aircraft track on the MFD, the pilot can see where the selected intercept angle will intercept the holding course. The Perspective can display a line extending from the aircraft symbol which display projected track.

No Flaps 100% Until Visual with Airport- Do not put flaps down to 100% while still descending on the final segment. The Stec-55 AP cannot be used with flaps 100%, and in the interest of keeping procedures similar for couple vs. hand-flown approaches, pilots should never extend flaps beyond 50% until visual with the airport, and ready to disconnect the AP and/ or slow to VFR final approach speed. Also, on a missed approach, having flaps at 100% is one more clean-up step to perform, or possibly to forget.

On an Instrument Approach, Pitch for Descent Rate, Power for Airspeed- This is SOP when hand-flying an approach (ILS or otherwise). Maintaining VS or glideslope is the more important parameter (compared to maintaining airspeed), so pitch is used, as it can effect a more immediate change. Also, as on a coupled approach the pilot has no choice but to use power to control airspeed, this method means a pilot need not use power differently when hand-flying vs. coupling an approach.

TAWS- Many pilots do not understand the primary value of TAWS is in the aural warnings, not in the TAWS display page. Pilots should be able to recite from memory, and execute in the airplane, the TAWS activation procedure. If a TAWS activation occurs in IMC, or at night, you should not think, but immediately execute the procedure. Many accidents that occurred with the first Ground Proximity Warning Systems (GPWS) happened when pilots ignored they warning, or tried to troubleshoot why it was occurring, rather than climbing at max rate immediately.

GS Altitude Check- On an ILS, checking the OM/ equivalent crossing altitude is a check of both being on the correct GS (versus a false GS), as well as a check of the aircraft's altimeter.

Traffic Pattern/ Landing

Pitch for Airspeed, Power for Altitude- In the traffic pattern, use this method. Especially be vigilant about trimming for airspeed. On the back side of the power curve (final approach) always pitch for *airspeed*- pitching up to go up will result in an increase in sink rate- opposite the desired effect.

Round out, Flare as Separate Events- Many pilots have difficulty performing satisfactory landings in the Cirrus. One tip which helps many pilots master landings is breaking the landing event into two parts- the round out, followed by the flare. Many pilots simply try to transition directly from the approach into the flare/ touchdown, often with unsatisfactory results. Breaking the transition from approach to landings into two events helps "spread out" the process, making it less time critical for the pilot.

- Round out- begins roughly 20' above the ground. Power is brought to idle as the aircraft is brought from a nose low to a level attitude. As the aircraft is in ground effect, decent should stop, and the plane will momentarily fly level. As soon as further decent is noticed:
- Flare- application of back pressure to bring nose higher than mains. Excepting a balloon event, backwards movement of the yoke does not halt until the main wheels have touched the pavement.

After Landing

Stop, Clean up, Call- Come to a complete stop after the hold short line, use the after-landing checklist (as either do-list or checklist), then calls ATC. Do not attempt to clean up while taxiing.