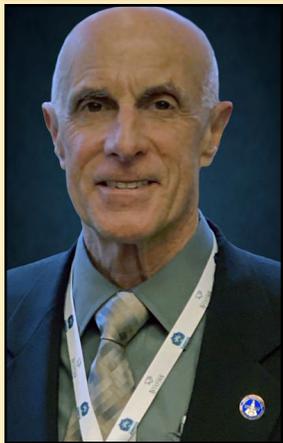


## Safety Update

Leo Berube, CFI, CFI-I, MEI, FAASTeam Representative



Few would argue that one of the most vital components of flight safety is the aircraft checklist. All FAA Airman Certification Standards (ACS) and Practical Test Standards (PTS) clearly state that pilots must utilize appropriate written checklists. Also, FAA mandates the use of an approved checklist for aircraft type-specific initial training.

The entire flight process from preflight to engine shutdown and securing can be divided into logical segments. A systematic flow pattern for each segment with a verbal call out and backed up with the written checklist assures nothing is missed.

For this Safety Update, I invited Wally Moran from [pilotworkshop.com](http://pilotworkshop.com) to share his thoughts on Flow Patterns and Checklists for Single Pilot Operations.

Wally Moran is a retired airline captain and spent much of his career as a training instructor and check airman on aircraft including the Boeing 747 and 767. He has held a flight instructor certificate for more than 50 years. He is a Designated Pilot Examiner for gliders and has given over 4,500 hours of flight instruction in single engine, multiengine, gliders and seaplanes. Wally has been awarded the FAA Wright Brothers Master Pilot Award and is designated a Master CFI by the National Association of Flight Instructors (NAFI). In 2017, Wally was elected to the NAFI Flight Instructor's Hall of Fame.

### Single Pilot Operations Flow Patterns and Checklists by Wally Moran



Wally Moran

DPE, NAFI Flight Instructor Hall of Fame

Since most pilots are human beings and subject to error and forgetfulness, we proved long ago that we need help to keep us safe. That's when checklists were invented.

I have done many check rides and flight reviews where the pilot was trying to impress me with how carefully they used the checklist. They would read a step, then do it, then read again and do it again. Trouble is that often after doing a step, they would return to the check list on a different line, thereby missing one or more steps. So, using the check list as a to-do list does not work.



For normal operations, pilots should develop a flow pattern for each phase of flight. The flow pattern should cover all the steps to get ready for that phase.

After completing the flow pattern, the check list should then be used to insure nothing was missed. This is the procedure that is used by nearly all professional pilots.

Now, emergency procedures may be the same or different. Some emergencies don't give us much time to use a check list, such as a sudden engine failure at low altitude. In that case, one needs to develop a flow pattern to correct the situation if possible and then, if time permits, use the emergency check list to insure you have not missed a step.

Other problems such as alternator failure give us a lot of time to use the emergency check list in a step-by-step manner to see if we can correct the problem. Since that is a procedure that we do not do every day, using the checklist as a guide is appropriate.

A checklist deficiency I often see is the use of the word GUMPS as a mental-only check list for landing in a retractable gear aircraft. Some pilots even use it three times – downwind, base and final. However, only using a mental check list is like not using a check list at all. Using GUMPS for a flow pattern followed by a written check list is the way it should be done.

I am convinced that every pilot who has ever landed an aircraft gear up failed to use their checklist. If they had, it would have told them to put the gear down. So, I tell pilots if you're going to use a mental checklist only, you're in the group that can land gear up.

*- Leo Berube*

