

# **FITS Generic Flight Instructor Certification Syllabus**



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## SECTION 1 – INTRODUCTION

### How to use this Syllabus

This syllabus is the generic version of a FAA Industry Training Standards (FITS) accepted flight instructor training course. This generic syllabus is a guide for you to use in developing your specific FITS curriculum. This FITS Syllabus is intended as a guide for aircraft manufacturers, training providers, and flight schools to use in developing a specific FITS curriculum for their aircraft, geographic region, and customer base. This syllabus is unique in several ways. First, it is a syllabus that uses real-world scenarios as the foundation of the training. Flight maneuvers are still a vital part of flight training and flight maneuvers are a part of this syllabus, but the use of real-world scenarios is used to enhance development of pilot decision making skills. The syllabus presents situations and circumstances that pilots face everyday as learning experiences and lessons. The primary tenant of FITS training is that you prepare for the real world of flying, by acting as an instructor while in training. Therefore, throughout the syllabus, the pilot in training (PT) will take on different tasks or jobs just as if they were already certificated flight instructors. The second important unique feature of this syllabus and of FITS training is that it is all competency based. When the pilot in training (PT) masters a particular skill area in the syllabus, he/she moves on regardless of how much time it takes to reach that point of mastery. This means that each lesson does not necessarily equal one flight. It may take several flights before the PT masters the elements of the lesson and is ready to move on to the next lesson. Consequently, the amount of total flight hours a PT has when the syllabus is completed may be more or less than the minimum times under current aviation regulations. Please note that FITS training is conducted under the current 14 CFR's. Although philosophically, FITS is competency based, many training organizations must still require their students to meet the FAA minimum training hours. Courses under 14 CFR Parts 142 and 141.55(d) may be approved to train to competency and not require a minimum number of hours.

### Regulations

This generic syllabus is adaptable to 14 CFR Parts 142, 141, or 61. Please refer to the appropriate regulations for your specific curriculum requirements.

### FITS Acceptance

FITS acceptance is achieved by developing your specific curriculum and submitting it to your local Flight Standards District Office for operations under 14 CFR Part 61, 141, and 142. If you are an OEM (Original Equipment Manufacturer, you should submit your curriculum to the FAA FITS Program Manager, AFS-800, Federal Aviation Administration, 800 Independence Ave. SW, Washington, DC 20591. A cover letter explaining exactly for what courses you are requesting FITS acceptance and under what regulations should accompany the curriculum. *Use of the FITS logo:* Once accepted, you are free to use the FITS Logo on all accepted curriculums and in

advertising about this particular curriculum. The FITS logo cannot be used in relationship to non-FITS products.

### The Four Levels of FITS Acceptance

1. Accepted FITS Flight Syllabus: Will contain all the tenets of FITS and will include flight in an aircraft or at least an Advanced Training Device. Examples of this type of syllabus include initial, transition, and recurrent training syllabi.
2. Accepted FITS Syllabus (No flight): It is not intended to teach the pilot in training (PT) psychomotor pilot skills or full cockpit/aircraft integration in a specific aircraft. It's intended to enhance certain skill sets of the PT. Application of this level of acceptance may be to teach the PT how to use a new glass cockpit display or develop better Single Pilot Resource Management (SRM) skills. A FITS Accepted Syllabus will also contain all the tenets of FITS. A live instructor will lead the training.
3. Accepted FITS Self-Learning Program: This acceptance is between the FITS Accepted Syllabus and FITS Supporting Material. It may be either an interactive CD or on-line course on a specific application or subject. The purpose of this training is to learn a specific piece of equipment or enhance a specific higher order thinking skill. Scenario training and/or testing is required. Since a live instructor is not required, Learner Centered Grading may not be applicable.
  - a. If the program is for a piece of equipment (i.e. GPS), the equipment should act like the actual piece of equipment during the interaction with the equipment as much as feasible. After basic training on the equipment, scenarios should be used to demonstrate PT proficiency and knowledge.
  - b. For non equipment programs (i.e. ADM development) scenarios with multi-string testing should be used.
4. Accepted FITS Supporting Material: These products do not meet the training tenets of FITS (i.e. may not be scenario based), but the subject is integral to FITS. These products could be accepted on their own technical merit, but only as a part of an Accepted FITS Flight Syllabus or FITS Syllabus. For example, a CBI on risk management could be accepted as and used as a module in a FITS accepted transition syllabus. Original equipment manufacturers (Cessna, Cirrus, Eclipse, etc.) or developers of training materials (Sporty's, Jeppesen, King Schools, etc.) normally develop Accepted FITS Supporting Material.

## SECTION 2 – FITS TERMINOLOGY

1. Automation Bias – The relative willingness of the pilot to trust and utilize automated systems.
2. Automation Competence – The demonstrated ability to understand and operate the automated systems installed in the aircraft.
3. Automation Management – The demonstrated ability to control and navigate an aircraft by means of the automated systems installed in the aircraft.
4. Automated Navigation leg – A flight of 30 minutes or more conducted between two airports in which the aircraft is controlled primarily by the autopilot and the on board navigation systems.
5. Automation Surprise – Occurs when the automation behaves in a manner that is different from what the operator is expecting.
6. Candidate Assessment – A system of critical thinking and skill evaluations designed to assess a pilot in training's readiness to begin training at the required level.
7. Critical Safety Tasks/Events – Those mission related tasks/events that if not accomplished quickly and accurately may result in damage to the aircraft or loss of life.
8. Data link Situational Awareness Systems – Systems that feed real-time information to the cockpit on weather, traffic, terrain, and flight planning. This information may be displayed on the PFD, MFD, or on other related cockpit displays.
9. Emergency Escape Maneuver – A maneuver (or series of maneuvers) performed manually or with the aid of the aircraft's automated systems that will allow a pilot to successfully escape from an unanticipated flight into Instrument Meteorological Conditions (IMC) or other life-threatening situations.
10. IFR Automated Navigation Leg – A leg flown on autopilot beginning from 500 ft AGL on departure (unless the limitations of the autopilot require a higher altitude, then from that altitude) until reaching the decision altitude or missed approach point on the instrument approach (unless the limitations of the autopilot require a higher altitude, then from that altitude). If a missed approach is flown, it will also be flown using the autopilot and on-board navigation systems.
11. Light Turbine TAA – is a jet or turboprop Technically Advance Aircraft (TAA) certified for single-pilot operations, weighing 12,500 lbs or less, that may be

equipped with cabin pressurization, and may be capable of operating in Class A airspace on normal mission profiles.

12. Mission Related Tasks – Those tasks required for safe and effective operations within the aircraft's certificated performance envelope.
13. Multi-Function Display MFD – Any display that combines primarily navigation, systems, and situational awareness information onto a single electronic display.
14. Primary Flight Display (PFD) – Any display that combines the primary six flight instruments, plus other related navigation and situational awareness information into a single electronic display.
15. Proficiency-Based Qualification – Aviation task qualification based on demonstrated performance rather than other flight time or experience.
16. Scenario Based Training – A training system that uses a highly structured script of real-world experiences to address flight-training objectives in an operational environment. Such training can include initial training, transition training, upgrade training, recurrent training, and special training. The appropriate term should appear with the term "Scenario Based," e.g., "Scenario Based Transition Training," to reflect the specific application.
17. Simulation Training Only – Any use of animation and/or actual representations of aircraft systems to simulate the flight environment. Pilot in training interaction with the simulation and task fidelity for the task to be performed are required for effective simulation.
18. Single Pilot Resource Management (SRM) – The art and science of managing all resources (both on-board the aircraft and from outside sources) available to a single pilot (prior and during flight) to ensure the successful outcome of the flight is never in doubt.
19. Technically Advanced Aircraft (TAA) – A General Aviation aircraft that contains the following design features: Advanced automated cockpit such as MFD or PFD or other variations of a Glass Cockpit, or a traditional cockpit with GPS navigation capability, moving map display and autopilot. It includes aircraft used in both VFR and IFR operations, with systems certified to either VFR or IFR standards. TAA's may also have automated engine and systems management. VFR Automated Navigation Leg – A leg flown on autopilot from 1,000 ft AGL on the departure until entry to the 45-degree leg in the VFR pattern.

## SECTION 3 – TRAINING PHILOSOPHY

FITS Training is a scenario-based approach to training pilots. It emphasizes the development of critical thinking and flight management skills, rather than solely on traditional maneuver-based skills. The goal of this training philosophy is the accelerated acquisition of higher-level decision-making skills. Such skills are necessary to prevent pilot-induced accidents.

### FITS Training Goals

- Higher Order Thinking Skills
- Aeronautical Decision Making
- Situational Awareness
- Pattern Recognition (Emergency Procedures) and Judgment Skills
- Automation Competence
- Planning and Execution
- Procedural Knowledge
- Psychomotor (Hand-Eye Coordination) Skills
- Risk Management
- Task Management
- Automation Management
- Controlled Flight into Terrain (CFIT) Awareness

Previous training philosophies assumed that newly certified pilots generally remain in the local area until their aviation skills are refined. This is no longer true with the advent of Technically Advanced Aircraft (TAA). Offering superior avionics and performance capabilities, these aircraft travel faster and further than their predecessors. As a result, a growing number of entry-level pilots are suddenly capable of long distance/high speed travel—and its inherent challenges. Flights of this nature routinely span diverse weather systems and topography requiring advanced flight planning and operational skills. Advanced cockpits and avionics, while generally considered enhancements, require increased technical knowledge and finely tuned automation competence. Without these skills, the potential for an increased number of pilot-induced accidents is daunting. A different method of training is required to accelerate the acquisition of these skills during the training process.

Research has proven that learning is enhanced when training is realistic. In addition, the underlying skills needed to make good judgments and decisions are teachable. Both the military and commercial airlines have embraced these principles through the integration of Line Oriented Flight Training (LOFT) and Crew Resource Management (CRM) training into their qualification programs. Both LOFT and CRM lessons mimic real-life scenarios as a means to expose pilots to realistic operations and critical decision-making opportunities. The most significant shift in these programs has been the movement from traditional maneuver-based training to incorporate training that is scenario-based.



Maneuver-based training emphasizes the mastery of individual tasks or elements. Regulations, as well as Practical Test Standards (PTS), drive completion standards. Flight hours and the ability to fly within specified tolerances determine competence. The emphasis is on development of motor skills to satisfactorily accomplish individual maneuvers. Only limited emphasis is placed on decision-making. As a result, when the newly trained pilot flies in the real-world environment, he or she is inadequately prepared to make crucial decisions. Scenario Based Training (SBT) and Single Pilot Resource Management (SRM) are similar to LOFT and CRM training. However, each is tailored to the pilot's training needs. These techniques use the same individual tasks that are found in Maneuver Based Training, but script them into scenarios that mimic real-life cross-country travel. By emphasizing the goal of flying safely, the pilot in training correlates the importance of individual training maneuvers to safe mission accomplishment. In addition, the instructor continuously interjects "What If?" discussions as a means to provide the trainee with increased exposure to proper decision-making. Because the "What If?" discussions are in reference to the scenario, there is a clear connection between decisions made and the final outcome. The "What If?" discussions are designed to accelerate the development of decision-making skills by posing situations for the pilot in training to consider. Once again, research has shown these types of discussions help build judgment and offset low experience.

Questions or situations posed by the instructor must be open-ended (rather than requiring only rote or one-line responses). In addition, the instructor guides the pilot in training through the decision process by: 1) Posing a question or situation that engages the pilot in training in some form of decision-making activity. 2) Examining the decisions made. 3) Exploring other ways to solve the problem. 4) Evaluating which way is best. For example, when the pilot in training is given a simulated engine failure, the instructor might ask questions such as: "What should we do now?" Or, "Why did you pick that place to land?" Or, "Is there a better choice?" Or, "Which place is the safest?" Or, "Why?" These questions force the pilot in training to focus on the decision process. This accelerates the acquisition of improved judgment, which is simply the decision-making process resulting from experience. It is not innate. All of our life experiences mold the judgment tendencies we bring to our flight situations. By introducing decision-making opportunities into routine training lessons, we speed-up acquisition of experience, thus enhancing judgment.

For further information, please reference "Aeronautical Decision Making" in the FAA Aviation Instructor's Handbook.

## SECTION 4 – TEACHING METHODS

### Scenario Based Training

For Scenario Based Training (SBT) to be effective there must be a purpose for the flight and consequences if it is not completed as planned. It is vital that the pilot in training and the Instructor communicate the following information well in advance of every training flight:

- Purpose of flight
- Scenario destination(s)
- Desired pilot in training learning outcomes
- Desired level of pilot in training performance
- Desired level of automation assistance
- Possible in-flight scenario changes (during later stages of the program)

With the guidance of the Instructor, the pilot in training should make the flight scenario as realistic as possible. This means the pilot in training will know where they are going and what will transpire during the flight. While the actual flight may deviate from the original plan, it allows the pilot in training to be placed in a realistic scenario.

**Scenario Planning** – Prior to the flight, the Instructor will brief the scenario to be planned. The Instructor will review the plan and offer guidance on how to make the lesson more effective. Discussion, in part, will reflect ways in which the Instructor can most effectively draw out a pilot in training's knowledge and decision processes. This enables the Instructor to analyze and evaluate the pilot in training's level of understanding. After discussion with the Instructor, the pilot in training will plan the flight to include:

- Reason to go flying
- Route
- Destination(s)
- Weather
- NOTAMs
- Desired pilot in training learning outcomes
- Possible alternate scenarios and emergency procedures

### Example of Scenario Based Training

Consider the following example: During traditional MBT, the Instructor provides a detailed explanation on how to control for wind drift. The explanation includes a thorough coverage of heading, speed, angle of bank, altitude, terrain, and wind direction plus velocity. The explanation is followed by a demonstration and repeated practice of a specific flight maneuver, such as turns around a point or S turns across the road until the maneuver can be consistently accomplished in a safe and effective manner within a

specified limit of heading, altitude, and airspeed. ***At the end of this lesson, the pilot in training is only capable of performing the maneuver.***

Now, consider a different example: The pilot in training is asked to plan for the arrival at a specific uncontrolled airport. The planning should take into consideration the possible wind conditions, arrival paths, airport information and communication procedures, available runways, recommended traffic patterns, courses of action, and preparation for unexpected situations. Upon arrival at the airport the pilot in training makes decisions (with guidance and feedback as necessary) to safely enter and fly the traffic pattern using proper wind drift correction techniques. This is followed by a discussion of what was done, why it was done, the consequences, and other possible courses of action and how it applies to other airports. ***At the end of this lesson the pilot in training is capable of explaining the safe arrival at any uncontrolled airport in any wind condition.***

The first example is one of traditional learning, where the focus is on the maneuver. The second is an example of scenario-based training, where the focus is on real world performance. Many course developers in flight training have built on the former option. Traditional training methods in many instances are giving way to more realistic and fluid forms of learning. The aviation industry is moving from traditional knowledge-related learning outcomes to an emphasis on increased internalized learning in which learners are able to assess situations and appropriately react. Knowledge components are becoming an important side effect of a dynamic learning experience.

Reality is the ultimate learning situation and scenario-based training attempts to get as close as possible to this ideal. In simple terms, scenario-based training addresses learning that occurs in a context or situation. It is based on the concept of situated cognition, which is the idea that knowledge cannot be known and fully understood independent of its context. ***In other words, we learn better, the more realistic the situations are and the more we are counted on to perform.***

Michael Hebron, a well-known golf instructor, suggests that there is little the expert can do in the way of teaching the learner particular motions of the golf swing. Instead, learning has to be experiential and feedback based; only a handful of basic principles are involved. The same goes, he says, for any and all kinds of learning. ***“It’s about learning, not about golf.”***

Scenario-based training (SBT) is similar to the experiential model of learning. The adherents of experiential learning are fairly adamant about how people learn. ***They would tell us that learning seldom takes place by rote.*** Learning occurs because we immerse ourselves in a situation in which we are forced to perform. We get feedback from our environment and adjust our behavior. We do this automatically and with such frequency in a compressed timeframe that we hardly notice we are going through a learning process. Indeed, we may not even be able to recite particular principles or describe how and why we engaged in a specific behavior. Yet, we are still able to replicate the behavior with increasing skill as we practice. If we could ask Mark

MacGuire to map out the actions that describe how he hits a home run, he would probably look at us dumbfounded and say, “I just do it.” On the other hand, I am sure Mark MacGuire could describe in detail the size and characteristics of every one of the baseball diamonds he was playing in as well as the strengths, weaknesses and common practices of every one of the pitchers he faced.

### Developing Scenario-Based Training

Scenario-based training best fits an open philosophy of blended and multiple learning solutions in which change and experience are valued and the lines between training and performance improvement are blurred. For scenario-based training to be effective it must generally follow a performance improvement imperative. The focus is on improved outcomes rather than the acquisition of knowledge and skills. Success requires a blended, performance-based, and reinforced solution.

An athletic exercise such as Basketball might prove to be a very good example. Clearly, the team’s objective is to win, which means scoring more points than the other team. That’s the performance objective. Each member of the team also has personal performance goals. The coach can stand at a blackboard and explain defensive and offensive diagrams with players, the rules of the game, and so forth. By doing that, he has identified a set of teach subjects (rules and play patterns) that are best delivered in a traditional fashion.

On the other hand, the application of these subjects and the level of proficiency required in their use can only be learned on the court. The scenario in this example is a scrimmage. During a typical scrimmage, experienced players are mixed with non-experienced players and matched against a similarly constituted practice team. The two teams play a game, and the coaches stop the action at appropriate intervals to offer feedback. Learning takes place in a highly iterative fashion often without the player realizing that specific bits of learning are taking place. The scrimmage provides a player with the opportunity to make several decisions, engage in complex and fast-paced behaviors, and immediately see impact. The coach may have some general ideas of basketball in mind and perhaps some specific learning objectives for the day, but in most cases does not know precisely which of them will be addressed during the scrimmage – that depends on the flow of practice.

Similarly, most flight training consists of both kinds of subjects: those amenable to traditional instructional design techniques and those better approached through scenario-based training. Neither is all that useful without the other. Before a learner can engage in a scenario, he or she needs some basic subject knowledge and skill. However, the strongest adherents of the scenario-based approach suggest very little subject knowledge is needed in order to take advantage of SBT. **The main point is that knowledge without application is worth very little.**

The first step in the scenario design process is to engage a number of subject matter experts in a series of discovery sessions and interactive meetings for the purpose of

identifying issues and learning objectives including higher-level and performance objectives. With clearly identified learning objectives, appropriate techniques and where to use they can be specified. In the basketball example, players need some rudimentary knowledge of the game and basic skill in order to make the practice session efficient and effective. Consequently, the required knowledge and skill objects need to be integrated into the actual sessions of practice. So, like a train pulling a number of boxcars, a traditional piece of learning precedes or is integrated into a scenario, with the scenario dictating what information is covered in the traditional piece. If, as described in the scrimmage session above, you don't precisely know what will come up in the practice, you shouldn't waste time in the traditional preparation. It's more efficient to share very basic principles and devote your resources to preparing to teach any situation that may arise. What is important, however, is to establish the boundaries of the scenarios. These are done using performance-based learning objectives (Internalized Responses) as opposed to knowledge-based learning objectives, and are worded as performance objectives rather than skill-based behavior objectives.

For example, in the traditional, more repetitive, intensive flight training sessions, objectives are knowledge-based and tend to be specific and limited. On the other hand, in scenario-based training we are simply trying to determine whether the learner has the minimum necessary knowledge/skill to qualify for the scenario. With scenario-based objectives, we are looking for performance behaviors and indicators of internalized responses, which are usually situational recognition indicators.

We can see this clearly illustrated in an automobile driver-training example (Table 1). The traditional Behavior (skill) objective is knowledge based and the SBT Performance objective is performance-based (responses which are situational recognition indicators).

Table 1: Driving Learning Objectives

<b>Knowledge</b>		<b>Behavior (Skill)</b>
<b>Traditional</b>	Know what a STOP sign and a Railroad crossing sign look like and what they mean.  Describe the correct parallel parking procedure	Drive an automatic shift car on a county road over a 2-mile route with one RR crossing and 2 full stops.  Maneuver the automobile into a normal parallel parking space between 2 other cars.
<b>Internalized Response</b>		<b>Performance</b>

<b>Scenario-Based</b>	Appropriately apply the rules of the road for driving in the local area in moderate traffic.	Drive from your garage to the Shopping Center on the same side of town
	Determine the shortest route and apply the appropriate procedures for driving in heavy and complex traffic conditions.	Drive from your garage to a specified address in another town over 50 miles away on the Interstate and an Expressway system.

Scenario design sessions should resemble focus groups in which participants work through a series of issues, from broad scenario outlines to very specific scenario details. Direct participants to address two general areas: content and style.

Sessions to determine content usually ask participants to:

- Share experiences about the subject event
- Describe desirable outcomes
- Share best practices or known instances of consistent achievement of the desired outcomes
- Create indicators of successful outcomes
- Create strategies expected to lead to successful outcomes
- Establish descriptions of successful and unsuccessful performance behaviors related to these strategies (note that outcome measures and performance behaviors will constitute the evaluative criteria for assessing performance in the scenario).

After the content discussion, ask participants to review the look, feel, and flow of the scenario. This is much like the process used for instructional design. Develop a storyboard with a general beginning and end, using the boundaries established earlier. Talk through the scenario in the session and, through iteration, create a flow script from the results.

With these two elements in place, you can begin the actual construction of the scenario. A subcommittee of Flight Instructors and subject matter experts (SMEs) should review and revise the scenario to fit into the whole course of instruction.

Scenarios are meant to be real situations. In an ideal world, an assessment team would evaluate behavior and agree on several critical performance dimensions. The key indicators should come from the initial SMEs, in which they also create strategies expected to lead to successful outcomes and establish descriptions of successful and unsuccessful performance behaviors. Outcome measures and performance behaviors will constitute the evaluative criteria for assessing performance in the scenario.

Examples of indicators of successful outcomes are whether an airplane arrived and was secured at the destination airport and how safe were all aspects of the flight or were there any regulatory violations. Strategies are clusters of internally consistent behaviors directed toward the achievement of a goal. Performance behaviors are the key

behaviors in those strategies. Establishing these dimensions should be a group process and is usually completed in the subject matter expert design session.

Review, obtain learner feedback, and revise. All learning, even the most traditional, is iterative. The key to creating a useful scenario is to see it as a learning experience for the designers as well as the learners. This means that results and comments about the learning experience are shared with the SMEs and the designer so that they can review and modify the scenarios as necessary. Obtain open –ended qualitative data from the learner and the Flight Instructor about the experience and review the data with the SME's and the designer.

Based on this kind of feedback, scenarios can be revised to better target the learner population. That process mirrors the original design steps. There are some cautions, however, in the revision process. First, there is an old saying: “It doesn’t take a cannon to blow away a tin can.” Basically, revisions should not needlessly complicate the scenario or the technology needed to employ it. It is crucial to weigh the risks of complication against the genuine learning needs. Before any revision, affirm the original purpose statement and the categorization of learning elements.

Also, do not let principles and main points become diluted by revisions. It is tempting to add more items and nuances in a scenario, but doing so further complicates the learning process. Save complexity for a full-scale “capstone” experience. Remember, adding an item in traditional learning complicates the learning process in a linear fashion. In scenarios, complication grows non-linearly with the addition of learning items. So, beware. A rule of thumb is to reduce rather than increase principles and main points in a revision.

Always review success and failure paths for realism. Remember that any change in a scenario item complicates all items on the path following it. Any time a decision node is altered, chances are that the decision nodes and information items following it must change. With every revision, follow and ensure the consistency of associated paths.

Finally, remember that traditional learning elements should service the scenario-based learning elements, which are situated in a real context and based on the idea that knowledge cannot be known and fully understood independent of its context. It is essential to place boundaries around scenarios to make the transitions between scenarios and traditional learning as efficient as possible.

Table 2: The Main Points

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|---|
| <ul style="list-style-type: none"><li>• Scenario-based training (SBT) is situated in a real context and is based on the idea that knowledge cannot be known and fully understood independent of its context.</li><li>• SBT accords with a performance improvement and behavior change philosophy of the learning function.</li><li>• SBT is different from traditional instructional design and one must be aware of the differences to successfully employ SBT.</li><li>• All learning solutions should employ both traditional and scenario-based training.</li></ul> |
|---|

- Traditional learning elements should service the scenario-based training elements.
- It is essential to place boundaries around scenarios to make the transitions between scenarios and traditional learning as efficient as possible.
- Use interactive discovery techniques with subject matter experts (SMEs) and designers to establish the purpose and outcomes of scenarios create the scenarios and appropriate strategies and performance behaviors, and develop learner evaluation criteria.
- SBT occurs by following success and failure paths through a realistic situation. Typically, these paths must be limited to stress the main learning objective. Otherwise the scenario can become too complex and unwieldy.
- Open-ended qualitative learner feedback is the key to successful scenario revision, but revisions should not further complicate the scenario unless highly justified.

Kindley, R. (2002). *Scenario-Based E-Learning: A Step Beyond Traditional E-Learning*. Retrieved 02/02/05 from <http://www.learningcircuits.org/2002/may2002/kindley.html>

### Single Pilot Resource Management

Single Pilot Resource Management (SRM) is defined as the art and science of managing all the resources (both on-board the aircraft and from outside sources) available to a single-pilot (prior and during flight) to ensure that the successful outcome of the flight is never in doubt. Most of us remember a favorite Instructor from our past that showed us the best way to solve in-flight problems and unforeseen circumstances. The FITS team has combined much of this collective CFI body of knowledge with some innovative teaching methods to give pilots practical tools to teach aeronautical decision-making and judgment. SRM includes the concepts of Aeronautical Decision Making (ADM), Risk Management (RM), Task Management (TM), Automation Management (AM), Controlled Flight Into Terrain (CFIT) Awareness, and Situational Awareness (SA). SRM training helps the pilot maintain situational awareness by managing the automation and associated aircraft control and navigation tasks. This enables the pilot to accurately assess and manage risk and make accurate and timely decisions. ***This is what SRM is all about, helping pilots learn how to gather information, analyze it, and make decisions.***

Teaching pilots to identify problems, analyze the information, and make informed and timely decisions is one of the most difficult tasks for Instructors. By way of comparison, the training of specific maneuvers is fairly straightforward and reasonably easy to understand. We explain, demonstrate, and practice a maneuver until proficiency is achieved. We are teaching the pilot in training “***what to think***” about each maneuver, and sign them off when they demonstrate proficiency. Teaching judgment is harder. Now we are faced with teaching the pilot in training “***how to think***” in the endless variety of situations they may encounter while flying out in the “real world.” Often, they learn this by watching Instructors. They observe reactions, and more importantly, actions, during flight situations and they often adapt the styles of the Instructor to their own personalities.

Pilots in training may range from 100-hour VFR-only pilots, all the way to multi-thousand hours ATP’s. The strength of this format is that the participants learn not only from their



Flight Instructor, but from each other as well. The collective knowledge of many pilots, when guided by an experienced CFI, is much greater than the knowledge of each participant, including the Flight Instructor. In these scenarios, there are no right answers, rather each pilot is expected to analyze each situation in light of their experience level, personal minimums, and current physical and mental readiness level, and make their own decision.

The SRM scenarios, developed by the FITS team, incorporate several maneuvers and flight situations into realistic flight scenarios. The scenarios are much like the Line Oriented Flight Training (LOFT) employed by the major corporate and airline training organizations for years. Table 3 gives an example of the performance, standards and conditions using SRM.

Table 3: Single Pilot Resource Management (SRM)

<b>Performance</b> The training task is:	<b>Standards</b> The pilot in training will:	<b>Conditions</b> The training is conducted during:
1. Task Management (TM)	Prioritize and select the most appropriate tasks (or series of tasks) to ensure successful completion of the training scenario.	Note: All tasks under SRM will be embedded into the curriculum and the training will occur selectively during all phases of training. SRM will be graded as it occurs during the training scenario syllabus.
2. Automation Management (AM)	Program and utilize the most appropriate and useful modes of cockpit automation to ensure successful completion of the training scenario.	Note: All tasks under SRM will be embedded into the curriculum and the training will occur selectively during all phases of training. SRM will be graded as it occurs during the training scenario syllabus.
3. Risk Management (RM) and Aeronautical Decision-Making (ADM)	Consistently make informed decisions in a timely manner based on the task at hand and a thorough knowledge and use of all available resources.	Note: All tasks under SRM will be embedded into the curriculum and the training will occur selectively during all phases of training. SRM will be graded as it occurs during the training scenario syllabus.
4. Situational Awareness (SA)	Be aware of all factors such as traffic, weather, fuel state, aircraft mechanical condition, and pilot fatigue level that may have an impact on the successful completion of the training scenario.	Note: All tasks under SRM will be embedded into the curriculum and the training will occur selectively during all phases of training. SRM will be graded as it occurs during the training scenario syllabus.
5. Controlled Flight Into Terrain (CFIT) Awareness	Understand, describe, and apply techniques to avoid CFIT encounters: a. During inadvertent encounters with IMC during VFR flight. b. During system and navigation failures and physiological incidents during IFR flight.	Note: All tasks under SRM will be embedded into the curriculum and the training will occur selectively during all phases of training. SRM will be graded as it occurs during the training scenario syllabus.

## The “5P” Check

SRM sounds good on paper, however, it requires a way for pilots to understand and deploy it in their daily flights. This practical application is called the “Five P’s (5P’s)” The 5P’s consist of “the Plan, the Plane, the Pilot, the Passengers, and the Programming”. Each of these areas consists of a set of challenges and opportunities that face a single pilot. And each can substantially increase or decrease the risk of successfully completing the flight based on the pilot’s ability to make informed and timely decisions. The 5P’s are used to evaluate the pilot’s current situation at key decision points during the flight, or when an emergency arises. These decision points include, pre-flight, pre-takeoff, hourly or at the midpoint of the flight, pre-descent, and just prior to the final approach fix or for VFR operations, just prior to entering the traffic pattern.

The 5P’s are based on the idea that the pilots have essentially five variables that impact his or her environment and that can cause the pilot to make a single critical decision, or several less critical decisions, that when added together can create a critical outcome. These variables are the Plan, the Plane, the Pilot, the Passengers, and the Programming. The authors of the FITS concept felt that current decision-making models tended to be reactionary in nature. A change has to occur and be detected to drive a risk management decision by the pilot. For instance, many pilots ascribe to the use of risk management sheets that are filled out by the pilot prior to takeoff. These catalog risks that may be encountered that day and turn them into numerical values. If the total exceeds a certain level, the flight is altered or cancelled. Informal research shows that while these are useful documents for teaching risk factors, they are almost never used outside of formal training programs. The number of pilots who use them before each and every flight approaches zero. The 5P concept is an attempt to take the information contained in those sheets and in the other available models and operationalize it.

The 5P concept relies on the pilot to adopt a “scheduled” review of the critical variables at points in the flight where decisions are most likely to be effective. For instance, the easiest point to cancel a flight due to bad weather is before the pilot and passengers walk out the door and load the aircraft. So the first decision point is Pre-Flight in the flight planning room, where all the information is readily available to make a sound decision, and where communication and FBO services are readily available to make alternate travel plans.

The second easiest point in the flight to make a critical safety decision is just prior to takeoff. Few pilots have ever had to make an “emergency take-off”. While the point of the 5P check is to help you fly, the correct application of the 5P before takeoff is to assist in making a reasoned go-no-go decision based on all the information available. That decision will usually be to “go”, with certain restrictions and changes, but may also be a “no-go”. The key point is that these two points in the process of flying are critical go-no go points on each and every flight.

The third place to review the 5Ps is at the mid point of the flight. Often, pilots may wait until the ATIS is in range to check weather, yet at this point in the flight many good options have already passed behind the aircraft and pilot. Additionally, fatigue and low altitude hypoxia serve to rob the pilot of much of their energy by the end of a long and tiring flight day. This leads to a transition from a decision-making mode to an acceptance mode on the part of the pilot. If the flight is longer than 2 hours, the 5P check should be conducted hourly.

The last two decision points are just prior to decent into the terminal area and just prior to the final approach fix, or if VFR just prior to entering the traffic pattern, as preparations for landing commence. Most pilots execute approaches with the expectation that they will land out of the approach every time. A healthier approach requires the pilot to assume that changing conditions (the 5Ps again) will cause the pilot to divert or execute the missed approach on every approach. This keeps the pilot alert to all manner of conditions that may increase risk and threaten the safe conduct of the flight. Diverting from cruise altitude saves fuel, allows unhurried use of the autopilot, and is less reactive in nature. Diverting from the final approach fix, while more difficult, still allows the pilot to plan and coordinate better, rather than executing a futile missed approach. Now let us look in detail at each of the “Five P’s”.

### The Plan

The “Plan” can also be called the mission or the task. It contains the basic elements of cross country planning, weather, route, fuel, publications currency, etc. Unlike risk management sheets that pilot fill out before a flight, the “Plan” should be reviewed and updated several times during the course of the flight. A delayed takeoff due to maintenance, fast moving weather, and a short notice Temporary Flight Restriction (TFR) may all radically alter the plan. Several excellent flight planning software packages are available that automates this process, allowing the pilot additional time to evaluate and make decisions. Some include real time and graphical TFR depictions. The “plan” is not just about the flight plan, but the entire days events surrounding the flight and allowing the pilot to accomplish the mission. The plan is always being updated and modified and is especially responsive to changes in the other four remaining P’s. If for no other reason, the 5P check reminds the pilot that the day’s flight plan is real life and subject to change at any time.

Obviously the weather is a huge part of any “plan.” The addition of real time data link weather information give the TAA pilot a real advantage in inclement weather, but only if the pilot is trained to retrieve, and evaluate the weather in real time without sacrificing situational awareness. And of course, weather information should drive a decision, even if that decision is to continue on the current “plan.” Pilots of aircraft without datalink weather should get updated weather in-flight through a Flight Service Station and/or Flight Watch.

### The Plane

Both the “plan” and the “plane” are fairly familiar to most pilots. The “plane” consists of the usual array of mechanical and cosmetic issues that every aircraft pilot, owner, or operator can identify. For example, Is everything working properly? Is the fuel situation where you expected it to be at that point? Are you using anti-ice equipment? However, with the advent of the Technically Advanced Aircraft (TAA), the “plane” has expanded to include database currency, automation status, and emergency backup systems that were unknown a few years ago. Much has been written about single pilot IFR flight both with, and without, an autopilot. While this is a personal decision, it is just that, a decision. Low IFR in a non-autopilot equipped aircraft may depend on several of the other “P’s” we will discuss. Pilot proficiency, currency, and fatigue are among them. The TAA offers many new capabilities and simplifies the basic flying tasks, but only if the pilot is properly trained and all the equipment is working as advertised.

### The Pilot

This is an area all pilots are learning more and more about each day. Flying, especially when used for business transportation, can expose the pilot to high altitude flying, long distance and endurance, and more challenging weather. Technically Advance Aircraft (TAA), simply due to their advanced capabilities can expose a pilot to even more of these stresses. The traditional “IMSAFE” checklist is a good start. However, each of these factors must be taken in consideration of the cumulative effect of all of them together and the insidious effects of low altitude hypoxia. The authors informal survey of TAA pilots show that almost half fly with pulse oxymeters to display the effects of low altitude hypoxia in a graphic manner.

The combination of late night, pilot fatigue, and the effects of sustained flight above 5,000 feet may cause pilots to become less discerning, less critical of information, less decisive and more compliant and accepting. Just as the most critical portion of the flight approaches (for instance a night instrument approach, in the weather, after a four hour flight) the pilot’s guard is down the most. The “5P” process emphasizes that pilot recognize the physiological situation they are placing themselves in at the end of the flight, before they even takeoff, and continue to update their condition as the flight progresses. Once identified, the pilot is in an infinitely better place to make alternate plans that lessen the effect of these factors and provide a safer solution.

### The Passengers

One of the key differences between CRM and SRM is the way passengers interact with the pilot. In the airline industry the passengers have entered into a contractual agreement with the pilots company with a clearly defined set of possible outcomes. In corporate aviation, the relationship between crew and passengers is much closer, yet is still governed by a set of operating guidelines and the more formal lines of corporate authority. However, the pilot of a highly capable single engine aircraft has entered into a very personal relationship with the passengers, in fact, they sit within an arms reach all of the time.

It may be easy, especially in business travel, for the desire of the passengers to make airline connections or important business meetings to enter into the pilot's decision-making loop. If this is done in a healthy and open way, it is a very positive thing. However, this is not always the case. For instance, imagine a flight to Dulles Airport and the passengers, both close friends and business partners, need to get to Washington D.C. for an important meeting. The weather is VFR all the way to southern Virginia then turns to low IFR as the pilot approaches Dulles. A pilot employing the 5P approach might consider reserving a rental car at an airport in northern North Carolina or southern Virginia to coincide with a refueling stop. Thus, the passengers have a way to get to Washington, and the pilot has an out to avoid being pressured into continuing the flight if the conditions do not improve.

Passengers can also be pilots. The old joke says that when four Certified Flight Instructors (CFI) board a light general aviation, a NOTAM should be posted. There is some truth to this. If no one is designated as pilot in command and unplanned circumstances arise, the decision-making styles of four self confident CFI's may come into conflict. Another situation arises when an owner pilot flies with a former CFI in the right seat on a business trip. Unless a clear relationship is defined and briefed prior to the flight, the owner pilot may feel some pressure to perform for the Individual Learning Manager (possibly beyond his or her capability), and the Individual Learning Manager may feel inhibited from intervening in small decisions until it is clearly evident that the pilot is making poor decisions. This is actually a CRM situation and requires clear pre-flight understanding of roles, responsibilities, and communication. Non-Pilots can also cause the pilot to review the SRM process.

Pilots need to understand that non-pilots may not understand the level of risk involved in the flight. There is an element of risk in every flight. That's why SRM calls it risk management not risk elimination. While a pilot may feel comfortable with the risk present in a night IFR flight, the passengers may not and may manifest this during the flight. The human reaction to fear and uncertainty is as varied as the shapes of our ears. Some become quiet, some talk incessantly, and in extreme cases anger and fear are strongly manifested. This may be the last thing the pilot needs to deal with while shooting the ILS to 400 feet and a mile visibility at midnight.

.A pilot employing SRM should ensure that the passengers are involved in the decision-making and given tasks and duties to keep them busy and involved. If, upon a factual description of the risks present, the passengers decide to buy an airline ticket or rent a car, then a good decision has generally been made. This discussion also allows the pilot to move past what he or she "thinks" the passengers want to do and find out what they "actually" want to do. This removes a load of self-induced pressure from the pilot.

### The Programming

The TAA adds an entirely new dimension to the way General Aviation aircraft are flown. The Glass Cockpit, GPS, and Autopilot are tremendous boons to reduce pilot workload

and increase pilot situational awareness. And frankly, the programming and operation of these devices is fairly simple and straightforward. However, unlike the analog instruments they replace, they tend to capture the pilot's attention and hold it for long periods of time (like a desktop computer). To avoid this phenomenon, the pilot should plan in advance when and where the programming for approaches, route changes, and airport information gathering should be accomplished...as well as times it should not. Pilot familiarity with the equipment, the route, the local air traffic control environment, and their own capabilities vis-à-vis the automation should drive when, where, and how the automation is programmed and used.

The pilot should also consider what his or her capabilities are in response to last minute changes of the approach (and the reprogramming required) and ability to make large-scale changes (a re-route for instance) while hand flying the aircraft. Since formats are not standardized, simply moving from one manufacturer's equipment to another should give the pilot pause and require more conservative planning and decisions. ?

### The SRM Decision Process

The SRM process is simple. At least five times, before and during the flight, the pilot should review and consider the "Plan, the Plane, the Pilot, the Passengers, and the Programming" and make the appropriate decision required by the current situation. It is often said that failure to make a decision is a decision. Under SRM and the 5P's, even the decision to make no changes to the current plan, is made through a careful consideration of all the risk factors present.

### Example of Single Pilot Resource Management

The teaching of SRM is best accomplished in a seminar environment. Recently, the authors conducted a set of classroom seminars that presented real time flight scenarios to a room full of qualified pilots of varied experiences. The first scenario presented was a night MVFR/IFR flight from St Augustine Florida to Washington Dulles Airport. The original "**Plan**" called for a non-stop flight with a 45-minute fuel reserve. The "**Plane**" was a well-equipped TAA with a minor navigation light problem that delayed departure by an hour. The "**Passengers**" were one pilot and one non-pilot. The non-pilot seemed nervous about the trip and a little ill. Both passengers needed to get to Washington DC for an important meeting the next day. The "**Pilot**" had spent a full day at a flight refresher clinic, including a two-hour flight and a three-hour class, and felt reasonably refreshed at the 5 PM departure time. And finally, the GPS/MFD, the "**Programming**," combination looked like it would make the flight a snap. However, there were questions about the currency of the database that required the pilot's attention.

The discussion that followed revolved around the reliability of the weather data, the fatigue of the pilot landing at Dulles at 9 PM, alternate ways to get the passengers to their meeting, minimum requirements for aircraft night flight, and a more complete understanding of the benefits and challenges posed by GPS programming and database currency. The 5p's ensured that each pilot looked at the entire picture prior to

making the critical decisions that would lay the groundwork for success or failure over four hours later in Washington.

Predictably, the destination weather deteriorated slowly as the flight proceeded northbound. The pilot's fatigue level, low altitude/long duration hypoxia, a succession of minor annoyances caused by the airplane and the passengers, began to become a factor. Again, the pilots applied the 5p's, and many decided to land short of Washington Dulles, check the weather, and secure a rental car as a backup for the Monday morning meeting (in fact many decided this prior to takeoff).

For the purposes of the discussion, this aircraft was equipped with a ballistic parachute system. For those that proceeded to Dulles, the scenario ended with a spatial disorientation incident at 1500 feet, 10 miles short of the airport caused by pilot fatigue, latent hypoxia, and failure to use the autopilot. For many, it was the first time they had considered all the options available, and the criticality of quick and accurate decisions. In the background, another instructor began calling out altitudes and speeds as the aircraft descended to the ground, providing an added dose of realism and pressure. Should the class initiate an unusual attitude recovery, and if it did not work should they attempt another? How much will the passengers help or hinder the pilots thought processes? When, and how, should the ballistic parachute system be deployed, and what are its limitations. This scenario sparked questions about the capabilities and limitations of the autopilot, cockpit automation, and the parachute system. More importantly, it caused the pilots in the room to examine how they should gather critical information, assess the risks inherent in the flight, and take timely action. All agreed that a few accurate decisions before and during the early part of the flight reduced the risk to pilot and passengers.

All these questions were discussed in a lively thirty-minute session following the scenario. In this type of Scenario Based Training, the group discussion is just as important as the actual situation, for it is during the discussion that the pilots are most ready to learn, and begin to develop a mental model of how they might react to situations. Instead of encountering a once in a lifetime, life or death, situation alone on the proverbial dark and stormy night, the participants could examine how the situation had developed, understand the options available to them, and begin to develop a general plan of action well ahead of time.

### Learner Centered Grading

The third component of the FITS training method, following each flight scenario, is to use the concept of "learner-centered grading." Learner centered grading includes two parts: learner self assessment and a detailed debrief by the instructor. The purpose of the self assessment is to stimulate growth in the learner's thought processes and, in turn, behaviors. The self-assessment is followed by an in-depth discussion between the instructor and the pilot in training which compares the instructor ratings to the pilot in training's self-assessment.

To improve learning, it is recommended that learners prepare to learn from their experiences both before and after key events. This preparation should increase learning and enhance future performance. Pre-briefs are essential for setting goals. During key events, especially those that require high levels of attention, there may be little time for learning; most individuals allocate the bulk of their cognitive resources to performing the actual task; however, they may also dedicate some cognitive resources to self-monitoring, learning, and correction.

How facilitation and feedback occur is important to the learning process. In order for feedback to be useful for both informational and motivational purposes, it should be designed systematically. For example, the facilitator (Flight Instructor) should avoid lecturing the learner, and should withhold their observations and opinions of the exercise until the learner has given their opinion. The use of closed-ended questions may stymie the usefulness of the feedback process as well, as they encourage one-word/yes/no types of answers that do not elicit opinions of performance or suggestions for improvement. It is more effective to use open-ended questions that probe the learner to assess their own performance. Allotting enough time for the feedback is also important. Debriefs that are rushed often turn into one-way “lectures” due to time constraints.

Referring to prior pre-briefs when conducting subsequent debriefs provides a sense of continuity, reliability, and consistency, all of which are desirable attributes of a feedback source. Reminding learners of goals and lessons learned from prior exercises helps them plan for future events. Learners may also be more receptive to feedback during a debrief if they were appraised of the goal criteria in a pre-brief.

The FITS approach utilizes scenarios to teach Single Pilot Resource Management (SRM) while simultaneously teaching individual tasks such as landings and takeoffs. The authors quickly realized that this required a new approach to the pilot in training's performance measurement. Traditional grading approaches are generally teacher centered and measure performance against an empirical standard. The following example of a traditional flight syllabus demonstrates.

Table 4: A Traditional Grading Scale

<ul style="list-style-type: none"> <li>. Excellent - the pilot in training has performed in an excellent manner</li> <li>. Good – the pilot in training has exceeded basic requirements</li> <li>. Satisfactory – the pilot in training has met basic standards</li> <li>. Marginal – the pilot in training has failed to perform the task standards</li> <li>. Unsatisfactory – the pilot in training has demonstrated significant performance difficulties</li> </ul>
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Table 5: A Traditional Lesson

Lesson Tasks	Lesson Sub Tasks	Lesson Grading
<ul style="list-style-type: none"> <li>. Flight Planning</li> </ul>	<ul style="list-style-type: none"> <li>. Flight Planning</li> <li>. Weight and Balance and</li> </ul>	<ul style="list-style-type: none"> <li>. U, M, S, G, E</li> <li>. U, M, S, G, E</li> </ul>



	Aircraft Performance Calculations	
Normal Preflight and Cockpit Procedures	Normal Pre-Takeoff Checklist Procedures GPS/Avionics Programming MFD /PFD Setup	U, M, S, G, E U, M, S, G, E U, M, S, G, E

This type of grading scale (See Table 4), or something similar, is in wide use throughout the aviation training industry. While it appears to be based on published standards, in reality it is often used as a tool to determine pilot in training progress and provide motivation. Thus, on the first lesson a pilot in training may receive an “Excellent” grade for attempting to plan the flight and accomplishing the weight and balance with a few minor errors. However, by the third flight, that same performance may only earn a “Satisfactory” grade due to lack of pilot in training progress (***note that while performance remained the same, the grade changed***). Additionally, the Flight Instructor awards the grade based on his or her observation of the pilot in training's performance. This observation, while accurate, may not be based on an understanding of the pilot in training's level of knowledge and understanding of the task. Lastly, the pilot in training has been conditioned since grade school to look at grades as a reward for performance and may feel that there is a link between grades earned and their self-esteem. In reality, none of this aids pilot in training performance in any meaningful way.

The learner centered grading approach addresses the above concerns. First, the grade is now a “Desired Scenario Outcome.” These outcomes describe pilot in training-learning behavior in readily identifiable and measurable terms. They reflect the pilot in training's ability to see, understand, and apply the skills and tasks that are learned to the scenario.

For instance, a pilot in training who can “explain” a successful landing has achieved the basic level of competence to begin the learning process. Once the pilot in training can “explain” the effect of crosswind and speed reduction on rudder effectiveness, they have achieved a level of learning that will allow for meaningful “Practice.” The “Perform” level denotes unsupervised practice and self-correction of errors. These grades are equally applicable to the first scenario to the last since they are not lesson dependent.

The grade of “Manage/Decide” is used solely for SRM grading and the grade of “Perform” is used solely for task grading. A pilot in training who is becoming proficient at aeronautical decision-making and risk management would be graded first at the “Explain” level, then at the “Practice”, and finally at the “Manage/Decide” level. A Manage/Decide or Perform grade does not describe perfection. Rather, these grades simply show a proficient pilot who corrects their own errors so that the outcome of the flight is never in doubt. Realistically, this is the performance level we desire. All pilots

make mistakes, it is in learning to identify and correct mistakes that they become proficient pilots.

### Desired Outcomes

The objective of scenario-based training is a change in the thought processes, habits, and behaviors of the pilot in training during the planning and execution of the scenario. Since the training is learner centered, the success of the training is measured in the following desired pilot in training outcomes.

#### (a) Maneuver Grades (Tasks)

- Describe – at the completion of the scenario, the PT will be able to describe the physical characteristics and cognitive elements of the scenario activities. *Instructor assistance is required to successfully execute the maneuver.*
- Explain –at the completion of the scenario the PT will be able to describe the scenario activity and understand the underlying concepts, principles, and procedures that comprise the activity. *Significant instructor effort will be required to successfully execute the maneuver.*
- Practice – at the completion of the scenario the pilot in training will be able to plan and execute the scenario. *Coaching, instruction, and/or assistance from the CFI will correct deviations and errors identified by the CFI.*
- Perform – at the completion of the scenario, the PT will be able to perform the activity without assistance from the CFI. *Errors and deviations will be identified and corrected by the PT in an expeditious manner. At no time will the successful completion of the activity be in doubt. (“Perform” will be used to signify that the PT is satisfactorily demonstrating proficiency in traditional piloting and systems operation skills)*
- Not Observed – Any event not accomplished or required

#### (b) Single Pilot Resource Management (SRM) Grades

- Explain – the pilot in training can verbally identify, describe, and understand the risks inherent in the flight scenario. *The pilot in training will need to be prompted to identify risks and make decisions.*
- Practice –the pilot in training is able to identify, understand, and apply SRM principles to the actual flight situation. *Coaching, instruction, and/or assistance from the CFI will quickly correct minor deviations and errors identified by the CFI. The pilot in training will be an active decision maker.*
- Manage/Decide - the pilot in training can correctly gather the most important data available both within and outside the cockpit, identify possible courses of action, evaluate the risk inherent in each course of action, and make the appropriate decision. *Instructor intervention is not required for the safe completion of the flight.*
- Not Observed – Any event not accomplished or required

Grading will be conducted independently by the pilot in training and the instructor, and then compared during the post flight critique.

Learner centered grading (outcomes assessment) is a vital part of the FITS concept. Previous syllabi and curriculum have depended on a grading scale designed to maximize pilot in training management and ease of instructor use. Thus the traditional: “excellent, good, fair, poor” or “exceeds standards, meets standards, needs more training” often meet the instructor’s needs but not the needs of the pilot in training. The learner centered grading described above is a way for the instructor and pilot in training to determine the pilot in training’s level of knowledge and understanding. “Perform” is used to describe proficiency in a skill item such as an approach or landing. “Manage-Decide” is used to describe proficiency in the SRM area such as ADM. Describe, explain, and practice are used to describe pilot in training learning levels below proficiency in both.

Grading should be progressive. During each flight, the pilot in training should achieve a new level of learning (e.g. flight one, the automation management area, might be a “describe” item by flight three a “practice” item, and by flight five a “manage-decide” item.

#### Example of Learner Centered Grading

Immediately after landing, and before beginning the critique, Flight Instructor Linda asks her pilot in training Brian to grade his performance for the day. Being asked to grade himself is a new experience but he goes along with it. The flight scenario had been a two-leg IFR scenario to a busy class B airport about 60 miles to the east. Brian had felt he had done well in keeping up with programming the GPS and the MFD until he reached the approach phase. He had attempted to program the ILS for runway 7L and had actually flown part of the approach until ATC asked him to execute a missed approach.

When he went to place a grade in that block he noticed that the grades were different. Instead of satisfactory or unsatisfactory he found, “Describe, Explain, Practice, and Perform”. He decided he was at the Perform level since he had not made any mistakes.

When Linda returned Brian discovered that she had graded his flight as well, with a similar grade sheet. Most of their grades appeared to match until the item labeled “programming the approach”. Here, where he had placed a “Perform” Linda had placed an “Explain”. This immediately sparked a discussion. As it turned out, Brian had selected the correct approach, but he had not activated it. Before Linda could intervene, traffic dictated a go around. Her explain grade told Brian that he did not really understand how the GPS worked and he agreed. Now, learning could occur.

In Table 6, the desired outcome table denotes a pilot in training near the beginning of training and the grades reflect proficiency of the pilot in training to an expected level of performance in each of these areas. These grades are not self-esteem related since they do not describe a recognized level of prestige (such as A+ or “Outstanding”), rather

a level of performance. You can't flunk a lesson. However, you can fail to demonstrate the required flight and SRM skills. By reflecting on the lesson and grading their own performance, the pilot in training becomes actively involved in the critique process. Pilot in training participation in the process also reduces the self-esteem issue. But most importantly, this establishes the habit of healthy reflection and self-criticism that marks most competent pilots.

**Table 6: Learner Centered Scenario Grading-Desired Outcome Table**

Scenario Activities	Scenario Sub Activities	Desired Scenario Outcome
Flight Planning	<ol style="list-style-type: none"> <li>1. Scenario Planning</li> <li>2. Weight and Balance and Aircraft Performance Calculations</li> <li>3. Preflight SRM Briefing</li> <li>4. Decision making and risk management</li> </ol>	<ol style="list-style-type: none"> <li>1. Perform</li> <li>2. Perform</li> <li>3. Perform</li> <li>4. Explain/Practice</li> </ol>
Normal Preflight and Cockpit procedures	<ol style="list-style-type: none"> <li>1. Normal Pre-Takeoff Checklist Procedures</li> <li>2. GPS Programming</li> <li>3. MFD Setup</li> <li>4. PFD Setup</li> </ol>	<ol style="list-style-type: none"> <li>1. Perform</li> <li>2. Explain/Practice</li> <li>3. Practice</li> <li>4. Explain/Practice</li> </ol>
Engine Start and Taxi Procedures	<ol style="list-style-type: none"> <li>1. Engine Start</li> <li>2. Taxi</li> <li>3. SRM/Situational Awareness</li> </ol>	<ol style="list-style-type: none"> <li>1. Perform</li> <li>2. Perform</li> <li>3. Explain/Practice</li> </ol>
Before Takeoff Checks	<ol style="list-style-type: none"> <li>1. Normal and Abnormal Indications</li> <li>2. Aircraft Automation Management</li> <li>3. Aeronautical Decision Making and Risk management</li> </ol>	<ol style="list-style-type: none"> <li>1. Perform</li> <li>2. Explain/Practice</li> <li>3. Manage/Decide</li> </ol>

## SECTION 5 – FITS FLIGHT INSTRUCTOR CERTIFICATION SYLLABUS

### Introduction

#### To the Pilot-in-Training (PT) and Instructor

This Flight Instructor Certification (CFI) Syllabus is unique in several ways that you should be familiar with as you use the syllabus to acquire the FAA Flight instructor Certification. First, it is a syllabus that uses real-world scenarios as the foundation of the training. This generic syllabus follows the FAA/Industry Training Standards (FITS) accepted training method. It's to be used as a guide for developing your own FITS accepted syllabus that fits your specific flight school, aircraft, and environment. Flight maneuvers are still a vital part of flight training and flight maneuvers are a part of this syllabus, but real-world scenarios are used to enhance the pilot's decision making skills. The syllabus presents situations and circumstances that CFIs face every day as learning experiences and lessons. The primary tenet of FITS training is that you prepare for the real world of CFI instruction, by acting as a CFI while in training. Therefore, throughout the syllabus, the pilot in training (PT) will take on different tasks or jobs just as if they were already a CFI. The second important unique feature of this syllabus, and of FITS training, is that it is all competency based. The times shown in each lesson are target times and should not be considered the minimum or maximum ground/flight time for the lesson. When the PT masters a particular skill area in the syllabus, they move on regardless of how much time it takes to reach that point of mastery. This means that each lesson does not necessarily equal one flight. It may take several flights before the PT masters the elements of the lesson and is ready to move on to the next lesson. Consequently, the amount of total flight hours a PT has when the syllabus is completed may be more or less than the minimum times under current aviation regulations. Please note that FITS is conducted under the current rules. Although philosophically, FITS is competency based, many training organizations must still require their students to meet the FAA minimum training hours. Courses under 14 CFR Parts 142 and 141.55(d) may be approved to train to a standard.

#### Using of Decision-Making scenarios in flight training

The PT, in this syllabus, is the instructor seeking the Flight instructor Certification. Thus, the PT will be the CFI learning how to develop and use effective scenario-based learning. The PT will be asked to assume various instructional situations and asked to develop and use scenario-based learning to teach a student in the various situations. In other words, the PT will be placed in a scenario, instructional situation, where the PT is instructing a Private or Commercial student and the PT will be expected to use a scenario to teach the student. The following discussion addresses how the CFI could use the decision-making scenario method.

For years, good flight instructors have incorporated some form of scenario-based learning into their flight training. Usually during a flight the CFI would tell the PT that something has occurred, such as deteriorating weather, an aircraft malfunction, or air

traffic delay. The PT is to assume that the occurrence is actually real and to act accordingly. The PT might decide to divert to a different airport after the CFI tells them that the weather at their destination is poor. The PT may decide to change from the original plan and flies to a different airport. The difference between that and FITS is that FITS also incorporates the consequences of the failure to arrive at the originally planned airport. If a PT decides to fly to an alternate airport instead of the original destination because the CFI “makes up” a story that the weather is bad, then that alone does not consider the consequences of that decision. What if, rather than a training flight, the flight to the original destination was to deliver a human organ for transplant – the decision to divert to an alternate airport could have the consequence of the patient dying that was awaiting the transplant. If the pilot understood that their decision has actual life or death consequences, then the decision to divert will be more difficult. In the real world, these are the type of decisions a pilot faces everyday – so in this syllabus we train the pilot to be ready to make those decisions. For these reasons, most of the lessons in this syllabus are actual “missions” that carry with them actual reasons for the flight and actual consequences for the decisions the pilot will make. The lessons are not “scripted” to the point that every outcome is known in advance. The PT and flight instructor must be flexible enough to accept this fact. Different PTs will make different decisions, and these different decisions will alter the outcome of each flight. Using real world scenarios as part of flight training does not in any way diminish the need for pilots to also have good “stick and rudder” skills. Pilots will always need the skills, for instance, to land in a crosswind (although enhanced decision skills will prevent them from attempting a dangerous crosswind landing in the first place!). The lessons in this syllabus therefore are all part “mission” training and part “maneuvers” training on a sliding scale. None of the lessons in this syllabus are 100% mission and none are 100% maneuvers. The amount that any lesson is mission-based or maneuver-based is determined by the completion standards of that lesson.

### The Pilot-In-Training Plays a Role in Grading the Lesson

Again, the PT training will learn how to use student-centered grading through instruction and through participation in a student-centered grading process during the course of this training.

Student Centered grading means that after each flight, the PT and instructor will have a discussion of the items that were encountered on the flight and each will evaluate the items. The PT will judge her/his own performance. The instructor, likewise will judge the PT’s performance and then the PT and instructor will compare evaluations. There will be items that both the PTs and instructor will agree were performed well and other that both agree could use improvement. Inevitably, the PT and instructor’s evaluations will disagree. This will be a great opportunity to discuss alternate methods, solutions and techniques that could have been used by the PT to have produced a more favorable outcome to the lesson. Mission based flight lessons can have multiple outcomes that are “correct.” The PT and instructor will discuss if the outcome of the flight was a safe outcome – which is the primary concern of any flight.

Beyond the basic safety of the flight, the PT and instructor will discuss if the outcome could have been even better – optimized. The instructor will use a “rubric” to grade the lessons based on what is an unacceptable outcome, versus a range of possible acceptable outcomes. A “rubric” might be defined as a set of criteria that aids the instructor in evaluating an outcome as objectively as possible when there are multiple correct answers, which is often the true in aeronautical decision-making. This does not mean that some answers are better than others, they just are not incorrect. Learning to choose a good solution or the best solution to an in-flight problem is judgment training. Judgment training is an integral part of FITS training.

### The Format of Each Lesson

Each lesson in this syllabus will have the same format. The PT and instructor should read through the format information before the flight and as preparation for the flight. Each lesson will have:

1. Heading
2. Scenario
3. Lesson Objectives
4. Pre Briefing
5. Completion Standards
6. Desired Outcome Grade Sheet
7. Debriefing
8. Notes to the Instructor

### Syllabus Shuffle

This FITS Flight instructor Certification Syllabus has one more unique feature. It contains two “learning strands.” The strands are: Analyze Performance and Practice Instruction. A PT does not have to complete one strand before beginning on another. The syllabus is designed to be “shuffled” and to allow maximum flexibility to meet training requirements. There are some prerequisite lessons that must follow in a particular order, but most lessons can come in any order. If an instructor and PT had previously completed ground lessons 5 and 7 are scheduled for flight lesson 6 or 8 today, but the weather at the destination prevents that lesson, the instructor could switch and conduct lesson 9 or 11. Remember that the PT is acquiring teaching skills rather than motor skills; thus, completing the Analyze Performance strand is not necessary before practicing instruction in the Practice Instruction strand.

## Flight instructor Certification Syllabus

Ground Lesson 1	Ground Lesson 18
Flight Lesson 2	Ground Lesson 19
Ground Lesson 3	Flight Lesson 20
Flight Lesson 4	Ground Lesson 21
Ground Lesson 5	Flight Lesson 22
Flight Lesson 6	Ground Lesson 23
Ground Lesson 7	Flight Lesson 24
Flight Lesson 8	Ground Lesson 25
Ground Lesson 9	Flight Lesson 26
Flight Lesson 10	Ground Lesson 27
Ground Lesson 11	Flight Lesson 28
Flight Lesson 12	Ground Lesson 29
Ground Lesson 13	Flight Lesson 30
Flight Lesson 14	Ground Lesson 31
Ground Lesson 15	Flight Lesson 32
Flight Lesson 16	Ground Lesson 33
Flight Lesson 17	Flight Lesson 34
	Flight Lesson 35 – Practice Practical Test
	Flight Lesson 36
	Flight Lesson 37 – FAA Practical Test

Analyze Performance

Practice Instruction

Ground lessons are Knowledge Acquisition Lessons and must come before the Flight Lesson/s in respective columns. Flight lessons within a column can be completed in any order once the ground lessons for the column are completed. Columns of lessons may be started and/or completed in any order. Lessons 36 is the final training lessons before the FAA Practical Test, lesson 37. Typically, the assigned instructor will conduct ground lesson 33 and flight lessons 34 and 36, a senior flight instructor will conduct flight lesson 35, and a FAA pilot examiner or designed examiner will complete flight lesson 37.

### FITS Flight Instructor Certification Curriculum Outline

- I. Analyze the Performance Elements and Flight Characteristics of the Airplane  
 Objectives of lessons 1 through 17: During this strand, the PT will learn to effectively analyze the performance elements and flight characteristics of the maneuvers outlined in the lessons. In addition, the PT will develop the ability to perform all of the tasks and procedures that are outlined in both the Private Pilot and Flight Training Handbook, Commercial Pilot, airplane single engine land Practical Test Standards.

Completion Standards for lessons 1 through 17: At the completion of this strand of training, the PT will be able to effectively analyze the performance elements that make up the flight characteristics of the tasks outlined in these lessons. In addition, from the right seat, the PT will be able to perform all the tasks in accordance with the FAA Private Pilot and Commercial Pilot, airplane engine land Practical Test Standards or as noted.

Ground Lesson 1

Flight Lesson 10



Flight Lesson 2  
Ground Lesson 3  
Flight Lesson 4  
Ground Lesson 5  
Flight Lesson 6  
Ground Lesson 7  
Flight Lesson 8  
Ground Lesson 9

Ground Lesson 11  
Flight Lesson 12  
Ground Lesson 13  
Flight Lesson 14  
Ground Lesson 15  
Flight Lesson 16  
Ground Lesson 17

## II. Practice Ground and Flight Instruction

Objectives of lessons 18 through 37: During this strand of training the PT will apply the teaching process and fundamentals of instruction through a variety of practice ground and flight instruction. The objective is to aid the PT's development of aeronautical knowledge and skill necessary to meet the requirements for a Flight Instructor Certificate, Airplane Single Engine. Additionally, the PT will continue to develop the aeronautical knowledge and skill necessary to meet the requirement to instruct applicants for land class ratings.

Completion Standards for lessons 18 through 37: At the completion of this strand of training the PT will exhibit the proficiency and skill necessary to give effective flight instruction. The PT's explanation performance will meet or exceed the performance standards as outlined in the current Private and Commercial and Flight Instructor Practical Test Standards or as noted.

Ground Lesson 18  
Ground Lesson 19  
Flight Lesson 20  
Ground Lesson 21  
Flight Lesson 22  
Ground Lesson 23  
Flight Lesson 24  
Ground Lesson 25  
Flight Lesson 26  
Ground Lesson 27

Flight Lesson 28  
Ground Lesson 29  
Flight Lesson 30  
Ground Lesson 31  
Flight Lesson 32  
Ground Lesson 33  
Flight Lesson 34  
Flight Lesson 35 – Stage Check  
Flight Lesson 36  
Flight Lesson 37 – FAA Practical Test

## Strand 1 – Analyze the Performance Elements and Flight Characteristics of the Aircraft

### Analyze the Performance – Lesson 1 Introduce the PTS and Review Certificates and Documents – Mission GND Lesson 1 (Approximate lesson time 2.0 hours)

#### Scenario:

You are a CFI preparing a private pilot for the Commercial oral examination. This is the last review prior to the Commercial Practical examination that is scheduled for tomorrow morning with a FAA examiner. The oral is scheduled in first thing tomorrow morning and the flight portion is scheduled just after lunch. Your student is the son of your boss and has not shown good understanding of the regulation as they relate to flight and of the resource management concept. The boss fired the last instructor for providing his son with miss-information on his first attempt at the Instrument Practical Test. The boss is grooming his son to become the chief flight instructor in his FAA approved flight school. This means that you are responsible for teaching his son about scenario based training, learner centered grading, and single pilot resource management.

#### Lesson Objective:

During this lesson the PT will be introduced to the information contained in the Practical Test Standards. The PT will also review the requirements pertaining to certificates and documents, visual scanning and collision avoidance, fundamentals of flight, airport and traffic pattern operations, normal and crosswind takeoffs, climbs, approaches and landings, go around procedures, cockpit management and postflight procedures. The PT will be introduced to scenario based training, learner centered grading, and single pilot resource management. This lesson will also include discussions on the use and understanding of the safety policies and procedures appropriate to single engine airplane operations.

#### Pre Briefing:

The instructor will take the lead in discussing the flight instructor certification and practical test standards, while the PT will lead discussion of the remaining topics and safety policies and procedures.

#### Completion Standards:

This lesson is complete when the PT is able to meet the desired outcomes and displays a thorough knowledge of the areas listed on the grade sheet below. The PT will be able to explain how to incorporate aeronautical decision making scenarios when discussing aircraft systems as well as safety policies and procedures that may be appropriate to flight.

Desired Outcome Grade Sheet:

Lesson 01 <b>Desired Outcome Grade Sheet</b>			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Demonstration of SRM	Effectively managed all resources available related to the lesson	Explain							
	Discussed and demonstrated the proper use of automation management in all phases of flight	Explain							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Explain							
	Discussed and demonstrated proper task management throughout the lesson	Explain							
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Explain							
	Discussed and demonstrated the avoidance of controlled flight into terrain	Explain							
	Effectively managed the flight as an Flight Instructor	Explain							
PTS (Recreational, Private, Commercial, & Flight Instructor	Introductions	Explain							
	Required areas of operation chart	Explain							
	Practical Test checklist	Explain							
Certification and Documents	Understands the use of the Practical Test Standards through the application of certification scenarios	Explain							
Introduction	Understands the FITS scenario based training concept and learner centered grading	Explain							
	Understands the concept of student lead training	Explain							
	Understands the completion standards for the course	Explain							
	Understands the role that the Practical Test Standards have in their training	Explain							
	Visual scanning and collision avoidance as outlined in Flight Instructor PTS	Explain							
	Fundamentals of Flight as outlined in Flight Instructor PTS	Explain							
	Airport and Traffic Pattern Operations as outlined in Flight Instructor PTS	Explain							
	Normal and crosswind takeoffs and climbs as outlined in Flight Instructor PTS	Explain							
	Normal and crosswind approaches and	Explain							

	landings as outlined in Flight Instructor PTS																		
	Forward and side slips to landings as outlined in Flight Instructor PTS	Explain																	
	Go-around procedures as outlined in Flight Instructor PTS	Explain																	
	Preflight procedures as outlined in Flight Instructor PTS	Explain																	
	Postflight procedures as outlined in Flight Instructor PTS	Explain																	
Safety Policies and Procedures	Understands the role that the Safety Policies and Procedures have in their training	Explain																	
	Properly applies the policies and procedures through discussions that include scenarios that may occur in actual flight training	Explain																	
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Explain																	
	Discussed and is able to explain the use of the 5 Ps and PAVE and DECIDE model into flight training	Explain																	
	Discussed and is able to explain assessing the risk of a student and lesson	Explain																	
	Discussed and is able to explain factors that affect decision making	Explain																	
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Explain																	

Debriefing:

Initially the debriefing will be lead by the instructor until the PT learns how LCG and student lead debriefings are conducted. The instructor will continue to take the lead in the debriefings, but will slowly transfer the role to the PT. The PT will be learning how to use LCG and the debriefing as a tool to enhance his/her own learning and as a tool to enhance the learning of his/her students.

Assignment for lesson 2:

Develop scenario-based lesson plan on:

- A. Preflight operations
- B. Basic maneuvers
- C. Aerodynamics demonstration

Notes to the Instructor:

**The Notes to the Instructor should be on a separate page for easy removal for use by the instructor during the lesson and omission from the PT's package.**

For lesson one the instructor sets up the circumstances for the PT. The PT will be acting as a flight instructor and prepare a scenario-based plan of action for the instruction that will be provided in training situation.

If the PT has not been trained under a FITS accepted course, it is very likely that the PT will need assistance and/or examples of plans of action using scenarios. Remember that the lesson will always contain two primary objectives. These objectives are the desired flight training and aeronautical decision-making (ADM) training. The plan of action should also include desired outcomes with a grading sheet. Remind the PT that the grading sheet will serve as a briefing guide for the PT's debriefing of the simulated student in the training situation.

For the instructor, since the flight instructor certification course also includes ADM training for the PT, the instructor should query the PT about other scenarios the PT could have used in this situation, lead a discussion on the merits of the various scenarios, and have the PT select which scenario is best. This teaching method will not only provide ADM training but it will help the PT learn how to develop scenarios for scenario-based training. Of course, this teaching method can be used on any of the maneuvers in the lesson debriefing to interject ADM training with other desired outcomes listed on the Desired Outcome Grade Sheet provide above.

In this lesson the PT is being introduced to the PTS as it would be used by an instructor to prepare a pilot for new certificate or rating. Because the scenario in this lesson has the PT preparing the student, a private pilot, for a Commercial certificate, the Commercial PTS should be used as an example of how an instructor should use the PTS in preparing. A current version of the PTS must be used and can be downloaded from the FAA website. The importance of using a current version should be emphasized particularly if the new instructor is using the technique of writing notes in the PTS for future reference. Such a practice is very helpful in reminding the instructor which certificates and documents should be reviewed as well as where the requirements can be found.

Analyze the Performance – Lesson 2  
Learn to Perform and Analyze – Mission  
FLT Lesson 2 (Approximate lesson time 1.3 hours)

Scenario:

You are a CFI conducting an initial flight with a private pilot who is training for a Commercial Certificate. You have never flown with the student before. The student, private pilot, has done the ground and flight training for the Commercial Certificate with an instructor from a different flight school. The flight school does not have a strong reputation for the quality of instruction it provides. The instructor at the other flight school was a new hire and only recently became an instructor.

Lesson Objective:

The purpose of this lesson is to learn to effectively perform and analyze the listed preflight operations, basic maneuvers and aerodynamic demonstration.

Pre Briefing:

The instructor will lead the discussions of the desired outcome shown as practice while the PT will lead the discussions of the desired outcomes shown as perform. For this lesson, the Flight Instructor will lead a discussion on the tasks listed and incorporating task, risk, and automation management as they would pertain to flight.

Completion Standards:

This lesson is complete when the PT is able to meet the desired outcomes listed on the grade sheet below. The PT will demonstrate that he/she can effectively perform and analyze preflight operations, basic maneuvers and aerodynamic demonstration while maintaining airspeeds within  $\pm 10$  kts., altitudes within  $\pm 10^\circ$  while in straight and level flight. On landings, shall touchdown within 400 ft beyond a specified point with little drift, and with the airplane's longitudinal axis parallel to the runway centerline. The PT will also demonstrate the ability of incorporating aeronautical decision making scenarios that may occur in flight when discussing flight procedures.

Desired Outcome Grade Sheet:

Lesson 02 <b>Desired Outcome Grade Sheet</b>			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Preflight Discussion	Weight and balance	Explain							
	Prior planning and performance	Explain							
	Descent planning	Explain							
	Review lesson plan on steep turns	Explain							
	Review lesson plan on stalls and maneuvering during slow flight	Explain							
	Review lesson plan on normal takeoffs and landings with various flap settings	Explain							
	Effectively managed all resources available related to the flight lesson	Explain							
	Discussed and demonstrated the proper use of automation management in all phases of flight	Explain							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Explain							
	Discussed and demonstrated proper task management throughout the flight lesson	Explain							
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Explain							
	Discussed and demonstrated the avoidance of controlled flight into terrain	Explain							
	Effectively managed the flight as an PT	Explain							
	Introduction	Aircraft preflight inspection	Explain						
Checklist usage and flow patterns		Explain							
Normal and crosswind taxi operations		Explain							
Normal and crosswind takeoffs		Explain							
Traffic patterns		Explain							
Collision avoidance procedures		Explain							
Wake turbulence avoidance		Explain							
Straight and level flight		Explain							
Level turns		Explain							
Climbs and descents		Explain							
Climbing and descending turns		Explain							
Effective use of trim		Explain							
Aerodynamics Demonstration		Explain							
Normal and crosswind landings with various flap settings		Explain							
No flap landings		Explain							
Go-around		Explain							
Cockpit management		Explain							
Postflight procedures		Explain							

Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Explain											
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Explain											
	Discussed and is able to explain assessing the risk of a student and flight lesson	Explain											
	Discussed and is able to explain factors that affect decision making	Explain											
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Explain											
Postflight Discussion	Critique student performance, preview next lesson, and make study assignment	Explain											

Debriefing:

The debriefing will be lead by the instructor until the PT learns how LCG and debriefing are conducted. The instructor will continue to take the lead in the debriefing, but will slowly transfer the role to the PT. The PT will be learning how to use LCG in the debriefing as a tool to enhance his/her own learning and as a tool to enhance the learning of his/her students.

Assignment for Lesson 3:

1. Airplane Flight Controls
2. Operation of Systems
3. Rectangular Course
4. S-Turns Across a Road
5. Turns Around a Point
6. Eights on Pylons
7. Eights Around Pylon
8. Eights Across a Road
9. Eights Along a Road

Notes to the Instructor:

**The Notes to the Instructor should be on a separate page for easy removal for use by the instructor during the lesson and omission from the PT's package.**

This syllabus does not assume that the PT has received scenario-based instruction and ADM training, and that the PT been graded under a LCG system. In other words, the syllabus does not assume that the PT has been trained under a FITS accepted syllabus. Therefore, it is suggested that the PT be given ADM training; that is, the PT



should be shown how to do ADM training by receiving it. Once the PT is shown how to provide ADM training the PT should then be given opportunities to practice developing and using scenario-based training. That is the PT is trained using SBT and is trained how to provide the training in the situations described in the lesson scenario. The teaching method should be modeled in the first couple of lesson of this syllabus and gradually the PT assumes a larger role in preparing a scenario-based plan of action. This is best done before the PT begins practicing his or her teaching in the next strand.

In this scenario the PT is faced with the challenges of establishing a relationship with a new student, introducing the student to SBT, ADM, and LCG in flight training, determining what, if any, bad habits the student has learned from his previous instruction, and what progress the student have made. You should refer to the FAA/FITS website for more information on SBT, ADM, and LCG. You should also refer to the Aviation Instructor's Handbook for additional information on building a relationship with a new flight student and other instructional techniques. Remember that sharing your thought process, or some part of it, with the PT should be helpful to the PT in learning and understanding the important of this part of the instructional process. Share these references with the PT.

If the PT has never flown from the right seat, you will need to address this issue including cross-cockpit, visual references parallax, and opposite hand-eye coordination. Since the PT is also attempting to learn to instruct while flying, it may be helpful to have the PT just attempt to talk about what he/she is doing or looking. This not only gets the PT taking but it may give you insight into the mistake the PT is making so they can be quickly corrected.

Analyze the Performance – Lesson 3  
Ground Reference Maneuvers – Mission  
GND Lesson 3 (Approximate lesson time 2.0 hours)

Scenario:

You are a CFI conducting a Commercial training flight with a private pilot. You will be introducing aircraft preflight, checklist usage, steep turns, maneuvering during slow flight, stalls, and normal takeoffs and landings. The student is a low time private pilot without an instrument rating.

Lesson Objective:

The purpose of this lesson is for the PT to learn to effectively perform and analyze the performance elements involved in maneuvers and procedures appropriate for Commercial operations. The PT will review the primary and secondary flight controls, the aircraft systems, and the elements of ground reference maneuvers. Also, the purpose is for the PT to understand how to determine proper descent planning needed for higher performance aircraft.

Pre Briefing:

The instructor will lead the discussions of the lesson plans while the PT will lead the discussions of the subject covered in the lesson plans. The instructor may still need to guide the postflight discussion; however, the PT should be taking the lead more with each lesson.

Aircraft performance, and weight and balance have been covered in previous ground briefing; however, they have not been done in preparation for an actual flight. This is the simulated student's first commercial training flight but you have flown with the student during her private training. She is a good student who finally mastered steep turns and has not had any problems with them since. Typically, the student acquires mastery of a maneuver quickly when the maneuver is demonstrated correctly and the demonstration correlates with the ground discussion about the maneuver.

Completion Standards:

This lesson is complete when the PT is able to exhibit the knowledge and skills necessary to analyze the listed maneuvers and procedures appropriate for Private Pilot and Commercial operations. The PT will be able to explain the principles and techniques of execution, while demonstrating the listed maneuvers and procedures in accordance with the current and appropriate Private, Commercial, and Flight Instructor Practical Test Standards. Also, the PT will demonstrate an acceptable use of aeronautical decision making, risk management, and single pilot resource management.

Desired Outcome Grade Sheet:

Lesson 03 Desired Outcome Grade Sheet			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Demonstration of SRM	Effectively managed all resources available related to the ground lesson	Practice							
	Discussed and demonstrated the proper use of automation management in all phases of ground	Practice							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Practice							
	Discussed and demonstrated proper task management throughout the ground lesson	Practice							
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Practice							
	Discussed and demonstrated the avoidance of controlled flight into terrain	Practice							
	Effectively managed the flight as an PT	Practice							
Review	Airplane flight controls as outlined in the Flight Instructor PTS	Explain							
	Operation of systems as outlined in the Flight Instructor PTS	Explain							
	Rectangular Course								
	As outlined in Flight Instructor PTS	Explain							
	As outlined in Private Pilot PTS	Explain							
	S-turns Across a road								
	As outlined in Flight Instructor PTS	Explain							
	As outlined in Private Pilot PTS	Explain							
	Turns Around a point								
	As outlined in Flight Instructor PTS	Explain							
	As outlined in Private Pilot PTS	Explain							
	Eights on pylons								
	As outlined in Flight Instructor PTS	Explain							
	As outlined in Private Pilot PTS	Explain							
	Eights around a pylon as outlined in the Airplane Flying Handbook	Explain							
Eights along a road as outlined in the Airplane Flying Handbook	Explain								
Eights across a road as outlined in the Airplane Flying Handbook	Explain								
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Practice							
	Discussed and is able to explain the	Practice							

	use of the PAVE and DECIDE model into flight training									
	Discussed and is able to explain assessing the risk of a student and flight lesson	Practice								
	Discussed and is able to explain factors that affect decision making	Practice								
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Practice								

Debriefing:

The PT will lead the debriefing with the instructor acting as the simulated student using a LCG approach and jointly the instructor and PT will debrief the PT's performance. The instructor should not hesitate to demonstrate good debriefing practices and techniques.

Assignment for Lesson 4:

Develop lesson plans on:

1. Rectangular Course
2. S-Turns Across a Road
3. Turns Around a Point
4. Eights on Pylons
5. Eights Around Pylon
6. Eights Across a Road
7. Eights Along a Road

Notes to the Instructor:

The PT is learning how to prepare and to present effective scenario-based instruction. The PT may not have received scenario-based instruction and may need to review the information provided on the FAA/FITS website to gain a full understanding of the instructional process and its value. Lesson plans for Commercial maneuvers should be emphasized in this lesson.

You may need to remind the PT that the scenario for this lesson suggested that the simulated student will need to correctly executed maneuvers to progress. This suggestion should influence the student's as well as the PT's debriefing. This reminder should help the PT understand that scenarios have a purpose with consequences and that scenarios developed by the PT in subsequently lessons should as well.

Remind the PT that the debriefing is an opportunity to consider additional situations not originally included in the scenario. For example, the instructor may need to demonstrate how to use a guided discussion. Guided discussions should emphasize student participation where the student is taught to offer his or her thoughts on possible solutions to tasks or problems. The student should be given opportunities to reflect on his or her solutions. The instructor and the PT working with the simulated student should not offer a “school solution” but rather lead the student toward the best solution in a given circumstance. This allows the student an opportunity to practice thinking skills.

Analyze the Performance – Lesson 4  
Perform and Analyze Flight by Reference to Ground Objects – Mission  
FLT Lesson 4 (Approximate lesson time 1.5 hours)

AIRPLANE – DUAL

Scenario:

You are a CFI conducting an introduction to commercial operations. You have flown with the student before. The student is a good student that participates actively in guided discussions about normal, abnormal, and emergency situation. The pilot is a new private pilot who has not flown outside of the training environment; thus, has very limited experience and has never experienced an actual emergency.

Lesson Objective:

The PT will learn to effectively perform and analyze flight by reference to ground objects. The PT shall demonstrate proficiency in the maneuvers listed on the grade sheet. In addition, the PT will correlate decision making into the tasks by discussing task, risk, and automation management as it applies to flight.

Pre Briefing:

The instruction in this case is one of a series of lessons that will lead the private pilot to obtaining a Commercial Certificate. Due to the student's limited experience outside of the training environment, you should emphasize aeronautical decision-making and judgment development during the discussions of the system and equipment malfunctions.

Completion Standards:

This practice flight instruction lesson is complete when the PT is able to meet the desired outcomes listed on the grade sheet below. Furthermore, the PT will demonstrate that he/she can effectively perform and analyze the listed maneuvers. The PT will be able to explain the principles and procedures of execution, while demonstrating the listed maneuvers and procedures in accordance with the current and appropriate Private, Commercial, and Flight Instructor PTS. The PT will also demonstrate the ability of presenting aeronautical decision making scenarios that may occur in flight when presenting aircraft flight and the cockpit check.

The Flight Instructor may lead a discussion on aeronautical decision making and the application of scenarios in ground and flight training to emphasize thinking skills development.

Desired Outcome Grade Sheet:

Lesson 04 <b>Desired Outcome Grade Sheet</b>			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Preflight briefing	Prior planning and weight and balance	Practice							
	Present lesson plan on system and equipment malfunctions	Practice							
	Present lesson plan on short-field takeoffs and landings with various flap settings	Practice							
	Present lesson plan on recovery procedures for unintentional spins	Practice							
	Effectively managed all resources available related to the flight lesson	Practice							
	Discussed and demonstrated the proper use of automation management in all phases of flight	Practice							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Practice							
	Discussed and demonstrated proper task management throughout the flight lesson	Practice							
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Practice							
	Discussed and demonstrated the avoidance of controlled flight into terrain	Practice							
	Effectively managed the flight as an PT	Practice							
Review	Aircraft preflight inspection	Practice							
	Checklist usage – flow patterns	Practice							
	Normal and crosswind taxi operations	Practice							
	Normal and crosswind takeoffs	Practice							
	Traffic patterns	Practice							
	Collision avoidance procedures	Practice							
	Wake turbulence avoidance	Practice							
	Straight and level flight	Practice							
	Level turns	Practice							
	Climbs and descents	Practice							
	Climbing and descending turns	Practice							
	Effective use of trim	Practice							
	Normal and crosswind landings with various flap settings	Practice							
	No flap landings	Practice							
	Go-around	Practice							
Introduction	Rectangular course	Explain							
	S-turns across a road	Explain							
	Turns around a point	Explain							

	Eights on pylons	Explain											
	Eights around a pylon	Explain											
	Eights across a road	Explain											
	Eights along a road	Explain											
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Practice											
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Practice											
	Discussed and is able to explain assessing the risk of a student and flight lesson	Practice											
	Discussed and is able to explain factors that affect decision making	Practice											
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Practice											
Post-flight Discussion	Critique student performance, preview next lesson, and make study assignment	Practice											

Debriefing:

Use LCG techniques to emphasize critical thinking skills development and capture learning opportunities. Learning opportunities occur when the student is given a chance to gain insight about a point, topic, concept, or theory.

Assignment for Lesson 5

Lesson Plan Preparation

1. Principles of Flight – items outlined in Flight Instructor PTS
2. Maneuvering During Slow Flight – items outlined in Flight Instructor PTS
3. Demonstration and Proficiency Stalls – items outlined in Flight Instructor PTS
4. Accelerated Stalls – items outlined in Airplane Flying Handbook

Notes to the Instructor:

By this lesson the PT should be able to conduct guided discussions on the material covered in the lesson and present several “what if” scenarios to be considered and discussed. As the PT practices his/her judgment training teaching methods the quality of the discussions should improve. Once the PT begins to improve, the PT should be told that this is the process that he/she will use to teach judgment and to develop critical thinking skills with his/her subsequent students.



Learning opportunities are created by offering problems or tasks to be solved by the student, then allowing the student to solve the problem, reflect on the process of solving the problem, posing additional considerations, re-solve the problem with the additional considerations, and then discussing what is best. The discussions on what is best can be used to guide the student toward better solutions without offering a “school solution.” The teaching process described above is the way to teach judgment and critical thinking skills.

The PT will need to continue to develop his/her right seat skills and the ability to talk while flying. As the PT gets better at talking while flying you may want to have the PT talk about what he or she is going to do on the next activity and what mistakes he/she is likely to make during the maneuver. This is simply a method to make the PT's taking more meaningful.

Analyze the Performance – Lesson 5  
Practice Ground Instruction – Mission  
GND Lesson 5 (Approximate lesson time 1.5 hours)

Scenario:

You are a CFI instructing with a private pilot working on a commercial certificate. The student has had difficulty controlling the airplane and airspeed during slow flight and stall situations.

Lesson Objective:

The PT will review the principles of flight, maneuvering during slow flight, demonstration and proficiency stalls, and accelerated stalls.

Pre Briefing:

The material presented in presentations must be effectively presented. An effective presentation would be one that presents the material in a realistic context and it is tailored to the simulated student's needs and interest. Using problems as the bases for learning will enhance the learning as well as foster the development of critical thinking skills in the student.

Completion Standards:

This practice ground instruction lesson is complete when the PT is able to meet the desired outcomes listed on the grade sheet and when the PT displays a thorough knowledge of the areas covered in this briefing. Also, the PT will demonstrate the ability of presenting aeronautical decision making scenarios that may occur in flight when presenting one engine inoperative procedures.

Desired Outcome Grade Sheet:

Lesson 05 <b>Desired Outcome Grade Sheet</b>			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Demonstration of SRM	Effectively managed all resources available related to the ground lesson	Practice							
	Discussed and demonstrated the proper use of automation management in all phases of flight	Practice							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Practice							
	Discussed and demonstrated proper task management throughout the ground lesson	Practice							
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Practice							
	Discussed and demonstrated the avoidance of controlled flight into terrain	Practice							
	Effectively managed the flight as an PT	Practice							
Review	Principles of flight as outlined in Flight Instructor PTS	Practice							
	Maneuvering during slow flight as outlined in Flight Instructor PTS	Practice							
	Demonstration and proficiency stalls as outlined in Flight Instructor PTS	Practice							
	Accelerated stalls as outlined in the Airplane Flying Handbook	Practice							
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Practice							
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Practice							
	Discussed and is able to explain assessing the risk of a student and flight lesson	Practice							
	Discussed and is able to explain factors that affect decision making	Practice							
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Practice							

### Debriefing:

LCG techniques should be used during the debriefing to practice their use and to enhance learning. The PT should be able to accurately assess his/her own performance. The PT should be using guided discussions or some other teaching method to engage the student in insightful learning and in practicing critical thinking skills.

### Assignment for Lesson 6

#### Lesson Plan Preparation:

1. Maneuvering during slow flight
2. Stalls
3. Slips

### Notes to the Instructor:

The PT will be learning through example and through teaching. Participate actively in guided discussion with the PT to allow the PT to develop and practice using this teaching method.

The PT is learning to develop and present effective scenario-based lesson plans. The maneuvers taught in this lesson will be the topics in the next flight lesson.

The instructor, acting as a simulated student, may need to withhold active participation during guided discussions attempts by the PT to cause the PT to have to work at engaging the simulated student. The PT should understand that he/she would need to teach the student to actively engage in guided discussions. It is unlikely that the student will offer a through list of options during the problem solving process. The more the student practices offering possible options for consideration in solving the problems and tasks the better they should become at doing this. It may be useful to stray off subject from time to time to allow the student to develop confidence in his/her own thinking skills. Remember that the PT is learning to do this as well as learning how to get his/her students to do this.

Analyze the Performance – Lesson 6  
Perform and Analyze Maneuvers – Mission  
FLT Lesson 6 (Approximate lesson time 1.3 hours)

AIRPLANE – DUAL

Scenario:

You are a CFI instructing with a student pilot working on a Private Pilot certification. The simulated student has previously completed several private pilot lessons and will be introduced to slow flight and stalls during the lesson.

Lesson Objective:

The PT will practice flight instruction to a simulated pilot by developing lesson plans and presenting on slow flight, stalls, and slips. The PT will learn to effectively perform and analyze maneuvering during slow flight, stalls, and slips. The flight instruction will correlate decision making into the tasks by discussing task, risk, and automation management as it applies to flight.

Completion Standards:

This practice flight instruction lesson is complete when the PT is able to meet the desired outcomes listed on the grade sheet and when the PT can demonstrate that he/she can effectively perform and analyze the maneuvers. In addition, the PT will be able to explain the principles and techniques of execution while demonstrating the listed review items and procedures in accordance with the current appropriate FAA Practical Test Standards and Airplane Flying Handbook. The PT shall maintain headings within  $\pm 10^\circ$  in straight flight, and bank angles of  $\pm 10^\circ$  while in turning flight. While performing maneuvers during slow flight, the PT shall maintain altitudes within  $\pm 100$  ft., headings within  $\pm 10^\circ$  during straight flight,  $\pm 10^\circ$  of bank angle during turning flight. The PT will demonstrate the ability of presenting aeronautical decision making scenarios that may occur in flight with emphases on airplane performance and control. Additionally, the PT must effectively present the material outlined on the desired outcome grade sheet to successfully complete this lesson.

Desired Outcome Grade Sheet:

Lesson 06 Desired Outcome Grade Sheet			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Preflight Decision	Effectively managed all resources available related to the flight lesson	Practice							
	Discussed and demonstrated the proper use of automation management in all phases of flight	Practice							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Practice							
	Discussed and demonstrated proper task management throughout the flight lesson	Practice							
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Practice							
	Discussed and demonstrated the avoidance of controlled flight into terrain	Practice							
	Effectively managed the flight as an PT	Practice							
Checklist Usage	Checklist Usage and flow patterns	Practice							
Introduction	Maneuvering during slow flight								
	Climbs and descents	Explain							
	Various drag configurations	Explain							
	Turns at various bank angles	Explain							
	Demonstration and proficiency stalls								
	Power – on	Explain							
	Power – off	Explain							
	Crossed-control	Explain							
	Elevator trim	Explain							
	Secondary	Explain							
	Accelerated stall	Explain							
	Slips (forward and side)	Explain							
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Perform							
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Perform							
	Discussed and is able to explain assessing the risk of a student and flight lesson	Perform							
	Discussed and is able to explain factors that affect decision making	Perform							
	Discussed and is able to explain incorporating aeronautical decision	Perform							

	making scenarios into each lesson to emphasize risk management and single pilot resource management									
Postflight Discussion	Critique student performance, preview next lesson, and make study assignment	Practice								

Debriefing:

The PT should be leading guided discussion or problem-based discussion on the areas the PT and simulated pilot disagreed on during the review of the pilot’s performance on this lesson and on the areas where the simulated pilot did not perform at the desired performance level (called for in the Desired Outcome Grading Sheet). Additionally, the instructor may need to lead a discussion about the PT’s performance and progress.

Assignment for Lesson 7

Lesson Plan development on:

1. Spins

Notes to the Instructor:

While the PT is gaining teaching experience, he/she should also be gaining experience using LCG techniques. Additionally, the PT should be gaining experience teaching aeronautical decision-making skills and developing the scenario-based lesson plans to support the development of the ADM skills. It should not be forgotten that the PT is also learning to fly the airplane from the right seat and learning to talk (instructor) while flying.

The training scenario in this lesson is designed to introduce a student pilot to slow flight, stall, and slips. The lesson is one of a series of lessons that will allow the PT an opportunity to practice every maneuver in the Private and Commercial practical tests. While the scenarios are design to meet the PT’s training needs, they do not provide an example for the PT to use in preparing his/her scenario for the simulated student. You may direct the PT to the appropriate Private or Commercial syllabus on the FAA/FITS website.

The PT is learning by doing; however, you may want to intervene from time to time and demonstrate the debriefing and teaching techniques. This is particularly important for the PT who has not had experience learning in a scenario-based environment.

Analyze the Performance – Lesson 7  
Increase Knowledge of Spins – Mission  
GND Lesson 7 (Approximate lesson time 1.0 hours)

Scenario:

You are a CFI instructing a private pilot working on a commercial certificate. This is the private pilot's first lesson on spins. Previously the private pilot showed a good understanding of maintaining the proper airspeed during slow flight and showed good control of the airplane during stalls.

Lesson Objective:

The purpose of this lesson is for the PT will gain an increased knowledge of spins, causes of spins, and recovery techniques.

Pre Briefing:

The PT will lead the lesson presentation. The PT is responsible for the creation and presentation of the lesson's scenario and plan of action that meets the objectives of the lesson.

Completion Standards:

This lesson is complete when the PT is able to meet the desired outcomes listed on the grade sheet below and when the PT displays a thorough knowledge of spins, causes of spins, and recovery techniques. The PT will demonstrate the ability to safely manage the ground lesson through an acceptable use of aeronautical decision making, risk management, and single pilot resource management.



Desired Outcome Grade Sheet:

Lesson 07 <b>Desired Outcome Grade Sheet</b>			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Demonstration of SRM	Effectively managed all resources available related to the ground lesson	Practice							
	Discussed and demonstrated the proper use of automation management in all phases of ground	Practice							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Practice							
	Discussed and demonstrated proper task management throughout the ground lesson	Practice							
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Practice							
	Discussed and demonstrated the avoidance of controlled flight into terrain	Practice							
	Effectively managed the flight as an PT	Practice							
Introduction	Spins as outlined in Flight Instructor PTS	Perform							
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Perform							
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Perform							
	Discussed and is able to explain assessing the risk of a student and flight lesson	Perform							
	Discussed and is able to explain factors that affect decision making	Perform							
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Perform							

Debriefing:

The debriefing should continue to emphasize effective instruction which includes the material required in the desired outcome grade sheet. Again, the PT should be leading the debriefing and covering both the differences in grading and deviation from desired performance levels.

## Assignment for Lesson 8

### 1. Review spins

#### Notes to the Instructor:

Encourage the PT to use the guided discussion teaching method during his/her presentations, if the PT is not already doing so. When the PT does use the guided discussion, does the PT offer meaningful alternatives to the student? Can the PT provide plausible explanations for the various alternatives? Is the PT reflecting on the decision process? Does the PT offer the student an opportunity to re-think the problem considering additional information? Does the PT ask the student to consider best practices?

The spin lesson should allow number of topics to explore the PT's understanding of aerodynamics, stalls and spins as it would with an instructor working with any other flight student. Additionally, it provides an excellent opportunity to developing the student's thinking skills (ADM) using the technique outlined above. Developing the student's understanding of various topics and thinking skills should not be handled as two separate things but rather together.

Analyze the Performance – Lesson 8  
 Perform and Analyze Spins – Mission  
 FLT Lesson 8 (Approximate lesson time 1.0 hours)

AIRPLANE – DUAL

Scenario:

You are a CFI instructing with a private pilot attempting to regain competence after being inactive for several years. The simulated pilot is planning to buy a new TAA airplane and wants to be sure she is ready and able to handle her new airplane.

Lesson Objective:

During this lesson, the PT will learn to effectively perform and analyze spins. In addition the PT should begin to develop the aeronautical knowledge, skills, and decision-making necessary to meet the requirements to instruct applicants for land class ratings.

Pre Briefing:

The PT will lead the briefings for this lesson. The PT is responsible for the creation and presentation of the lesson’s scenario and plan of action that meets the objectives of the lesson with emphasis spins.

Completion Standards:

This lesson is complete when the PT is able to meet the desired outcomes listed on the grade sheet. The completion of this lesson, the PT will exhibit adequate knowledge and skills necessary to analyze the listed maneuvers and procedures appropriate for spins. Also, the student will be able to explain the principles and techniques of execution, while demonstrating the listed maneuvers and procedures. The PT will demonstrate the ability to safely manage the flight lesson through an acceptable use of aeronautical decision making, risk management, and single pilot resource management.

Desired Outcome Grade Sheet:

Lesson 08 Desired Outcome Grade Sheet			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Preflight briefing	Prior planning	Perform							
	Review single engine emergency procedures	Perform							
	Effectively managed all resources available related to the flight lesson	Perform							

Demonstration of SRM	Discussed and demonstrated the proper use of automation management in all phases of flight	Practice																
	Identified and discussed areas of risk and made proper decisions in managing those situation	Practice																
	Discussed and demonstrated proper task management throughout the flight lesson	Practice																
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Practice																
	Discussed and demonstrated the avoidance of controlled flight into terrain	Practice																
	Effectively managed the flight as an PT	Practice																
Introduction	Spin entries and recoveries																	
	Power on, power off	Practice																
	Left and right entries	Practice																
	Incipient and fully developed – minimum of 2 turns	Practice																
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor’s Handbook	Perform																
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Perform																
	Discussed and is able to explain assessing the risk of a student and flight lesson	Perform																
	Discussed and is able to explain factors that affect decision making	Perform																
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Perform																
Postflight Discussion	Critique student performance, preview next lesson, and make study assignment	Perform																

Debriefing:

PT leads the debriefing. The debriefing should include thought provoking discussions of situations that may lead to a spin and well as a discussion about spins under various circumstances.

## Assignment for Lesson 9:

Prepare Presentation for:

1. Short-field and Soft-field Takeoffs and Landings
2. Accuracy Approach and Landing
3. Emergency Approach and Landing
4. Systems and Equipment Malfunctions
5. Emergency Equipment and Survival Gear

### Notes to the Instructor:

At this point, the PT should be practicing good aeronautical decision-making and be incorporating aeronautical decision-making concepts in his/her discussions.

Does the recovery procedure differ if the spin is entered shortly after takeoff or at altitude in mountainous terrain? Judgment training can be practiced with discussion about best practices under various circumstances. Is the PT incorporating judgment training in his/her debriefings and simulated instruction?

This scenario provides an opportunity to introduce the PT to actual spins while most flight training is designed to recognize and avoid. Take full advantage of the pre- and post- flight briefing to develop ADM skills.

Analyze the Performance – Lesson 9  
Practice Ground Instruction – Mission  
GND Lesson 9 (Approximate lesson time 1.8 hours)

Scenario:

You are a CFI instructing with a student pilot working on a Private Pilot Certificate. Again, the simulated pilot is a student in the early portions of the private pilot training who is being introduced the tasks listed.

Lesson Objective:

The PT will practice ground instruction to a simulated pilot by developing lesson plans with emphasis in takeoffs and climbs, emergency approach and landing, systems and equipment malfunctions, and emergency equipment and survival gear. The ground instruction will correlate decision making into the tasks by discussing task, risk, and automation management as it applies to flight.

Pre Briefing:

During this lesson, the PT will review, in preparation for a check of the PT progress as well as gain the knowledge and skills necessary to analyze, the listed maneuvers and procedures appropriate for engine inoperative operations.

Completion Standards:

This practice ground instruction lesson is complete when the PT is able to meet the desired outcomes listed in the desired outcome grade sheet and must displays a thorough knowledge of the areas covered in this briefing. The PT will demonstrate the ability of presenting aeronautical decision making scenarios that may occur in flight.

Desired Outcome Grade Sheet:

Lesson 09 <b>Desired Outcome Grade Sheet</b>			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
	Effectively managed all resources available related to the ground lesson	Perform							
	Discussed and demonstrated the proper use of automation management in all phases of ground	Perform							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Perform							
	Discussed and demonstrated proper task management throughout the ground lesson	Perform							
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Perform							
	Discussed and demonstrated the avoidance of controlled ground into terrain	Perform							
	Effectively managed the flight as an PT	Perform							
Review	Short-field takeoff and maximum performance climb as outlined in Flight Instructor PTS	Explain							
	Soft-field takeoff and climb as outlined in Flight Instructor PTS	Explain							
	Short-field approach and landing as outlined in Flight Instructor PTS	Explain							
	Soft-field approach and landing as outlined in Flight Instructor PTS	Explain							
	Power-off 180° accuracy approach and landing as outlined in Flight Instructor PTS	Explain							
	Emergency approach and landing as outlined in Flight Instructor PTS	Explain							
	Systems and Equipment malfunctions as outlined in Flight Instructor PTS	Explain							
	Emergency equipment and survival gear as outlined in Flight Instructor PTS	Explain							
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Perform							
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Perform							

	Discussed and is able to explain assessing the risk of a student and flight lesson	Perform								
	Discussed and is able to explain factors that affect decision making	Perform								
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Perform								

Debriefing:

The debriefing should be lead by the PT and the instructor should actively participate in the discussions. The PT should be using the debriefing to create learning moments and asking “what if” questions to expand the discussions beyond the original scope of the scenario.

Assignment for Lesson 10

Prepare Presentations for:

1. Short-field and Soft-field Takeoffs and Landings
2. Accuracy Approach and Landing

Notes to the Instructor:

The instructor should not hesitate to ask engaging questions during the PT lead pre and postflight discussions to explore appropriate topics in-depth. In some cases, you may simply want to ensure that the PT has an adequate understanding of a topic, in other cases you may be modeling the instructional method to demonstrate how effective teaching technique is used, and finally, you can reinforce the importance of the postflight debriefing.

System malfunctions and emergencies provide excellent opportunities to discuss alternative courses of action; thereby, practicing ADM skills. A single system malfunction considered in numerous situations could provide a wide experience base for the student to draw from in other situations. Students and many PTs will have difficulty coming up with many alternatives and possible solutions to the system malfunction. They will need to be given time to think and the instructor should avoid jumping in. The more the student practices coming up with possible solutions and determining a best solutions, the better problem-solver the student will be come. Again, the student should not be given a list of possible solution to memorize because this method does not teach them to solve problems; in other words, they will not learn ADM skills.



Analyze the Performance – Lesson 10  
Perform Takeoffs and Landings – Mission  
FLT Lesson 10 (Approximate lesson time 1.2 hours)

AIRPLANE – DUAL

Scenario:

You are a CFI working with a student pilot working on takeoffs and landing during pre-solo.

Lesson Objective:

During this lesson, the PT will learn to effectively perform and analyze short-field takeoffs and landings, soft-field takeoffs and landings, and power-off 180° accuracy approach and landings. In addition, the PT will demonstrate proficiency in the maneuvers listed for review.

The PT is responsible for the creation and presentation of the lesson's scenario and plan of action that meets the objectives of this lesson.

Completion Standards:

At the completion of this flight lesson, the PT will demonstrate that he/she can effectively perform and analyze the introductory maneuvers. In addition, he/she will be able to explain the principles and techniques of execution while demonstrating the listed review items and procedures in accordance with the current appropriate FAA Instructor Practical Test Standards and Airplane Flying Handbook. The PT shall rotate at the recommended airspeed and accelerate to  $V_X$ , climb at  $V_X$  or the recommended airspeed of +5, -0 until obstacle is cleared or to at least 50 ft. above the surface. The student will then accelerate to  $V_Y$  and maintain  $V_Y$  within  $\pm 5$  kts. For a soft-field takeoff, the PT shall lift off at the lowest possible airspeed and remain in ground effect while accelerating to  $V_X$ , +5, -0 kts., if obstacle must be cleared, otherwise, the PT will maintain  $V_Y$  within  $\pm 5$  kts. Additionally, the PT will also demonstrate the ability to safely manage the flight lesson through an acceptable use of aeronautical decision making, risk management, and single pilot resource management.

Desired Outcome Grade Sheet:

Lesson 10 <b>Desired Outcome Grade Sheet</b>			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Preflight Discussion	PT will brief the simulated student	Perform							
	Effectively managed all resources available related to the flight lesson	Perform							
	Discussed and demonstrated the proper use of automation management in all phases of flight	Perform							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Perform							
	Discussed and demonstrated proper task management throughout the flight lesson	Perform							
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Perform							
	Discussed and demonstrated the avoidance of controlled flight into terrain	Perform							
	Effectively managed the flight as an PT	Perform							
Review	Checklist usage and flow patterns	Practice							
	Eights on pylons	Practice							
	Demonstration and proficiency stalls	Practice							
Introduction	Short-field takeoffs and maximum performance climb	Practice							
	Short-field approaches and landings – with and without obstacle	Practice							
	Short-field takeoff and climb	Practice							
	Short-field approach and landing	Practice							
	Power-off 180 degree accuracy approach and landing	Practice							
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Perform							
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Perform							
	Discussed and is able to explain assessing the risk of a student and flight lesson	Perform							
	Discussed and is able to explain factors that affect decision making	Perform							

	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Perform								
Postflight Discussion	PT will debrief the simulated student – critique student performance, preview next lesson, and make study assignment	Perform								

Debriefing:

The PT will debrief the simulated student using a LCG process. Subsequently, the instructor will provide a formative assessment of the PT’s performance.

Assignment for Lesson 11:

1. Federal Aviation Regulations including Parts 1, 23, 43, 61, 67, 71, 73, 91, & 141
2. Publications, Advisory Circulars, Bi-weekly Notice to Airman Booklet

Notes to the Instructor:

The PT must be developing scenarios for the flight lessons. The scenarios should be realistic, flight a student would likely being doing once they have completed their training and the appropriate certificate. The scenarios should require the maneuvers listed in the desired grading work sheet.

The scenario in this lesson simply suggests a typical training situation the PT will likely encounter. It is the PT’s responsibility to take training situation and develop a scenario to teach takeoffs and landings. Again, you may want to refer the PT to the FAA/FITS website for example of scenarios provided in the Private and Commercial syllabi.

The debriefing should included guided discussions of different situations where the maneuvers listed in the desired grading work sheet may be used. The different situations should have different problems that may affect the maneuver including hot and cold weather or terrain. Use situations that allow the PT to practice his/her thinking skills as well as call on the PT to use situations that allows his/her student to practice thinking skills.

Analyze the Performance – Lesson 11  
 Increase Understanding of FARs and Publications – Mission  
 GND Lesson 11 (Approximate lesson time 1.8 hours)

Scenario:

You are a CFI instructing with a commercial pilot working on a flight review. The simulated pilot will be making a series of cross-country flight to parts of the country he has never flown before in the next three months.

Lesson Objective:

During this lesson, the PT will develop an increased understanding of Federal Aviation Regulations and Publications.

Pre Briefing:

The PT will lead all briefing for this lesson.

Completion Standards:

This lesson is complete when the PT displays a thorough knowledge of the areas covered in this briefing.

Desire Outcome Grade Sheet:

Lesson 11 <b>Desired Outcome Grade Sheet</b>			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Demonstration of SRM	Effectively managed all resources available related to the ground lesson	Perform							
	Discussed and demonstrated the proper use of automation management in all phases of ground	Perform							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Perform							
	Discussed and demonstrated proper task management throughout the ground lesson	Perform							
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Perform							

	Discussed and demonstrated the avoidance of controlled flight into terrain	Perform												
	Effectively managed the flight as an PT	Perform												
Review	Federal Aviation Regulations & Publications as outlined in Flight Instructor PTS	Practice												
	Additional Federal Aviation Regulations													
	Part 1	Practice												
	Part 23	Practice												
	Part 43	Practice												
	Part 61	Practice												
	Part 67	Practice												
	Part 71	Practice												
	Part 73	Practice												
	Part 91	Practice												
	Part 141	Practice												
	Additional Publications													
	Pilot's Handbook of Aeronautical Knowledge – FAA-H-8080-2	Practice												
	Guide to Federal Aviation Administration Publications	Practice												
	Advisory Circular Checklist 00-2	Practice												
	Bi-Weekly Notice to Airman Booklet	Practice												
Aeronautical Information Manual	Practice													
Pilot's Operating Handbook	Practice													
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Perform												
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Perform												
	Discussed and is able to explain assessing the risk of a student and flight lesson	Perform												
	Discussed and is able to explain factors that affect decision making	Perform												
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Perform												

Debriefing:

The debriefing should be PT lead and cover performance and decision-making discussions. The PT should use realistic situation to lead the review of the regulations.

Assignment for Lesson 12

1. Prepare lesson plan for emergency approach and landing, and system and equipment malfunctions.

### Notes to the Instructor:

Again, scenario-based instruction is emphasized in this lesson. Regulations learned out of context are difficult to recall even when the student has no trouble quoting them during the pre-flight briefing and the student will not be able to apply the regulations to in-flight situations when attempting to solve a problem. Teaching regulations in realistic scenarios improves learning.

Did the PT provide realistic situations to lead the simulated student through the review of the regulations? Did the PT use the available learning moments to expand the discussions and allow the simulated student to practice thinking skills and problem solving?

Asking the student a vague or open-ended question may result in a long and interesting discussion of everything the student knows. To cover the regulation more efficiently, the PT may want to include “what regulation/s covers these situations?” In this case, you are not asking for the number of the regulation but rather what the regulation says, in the student’s own words. Alternatively, the instructor or PT working with the simulated student could ask “how does the ... regulation affect you in this situation?” In this case, you are quoting part of some regulation that is related to the situation and in some cases does not relate to the situation. For example, you quote an equipment requirement for a night flight while planning a day VFR flight.

Analyze the Performance – Lesson 12  
Practice Flight Instruction – Mission  
FLT Lesson 12 (Approximate lesson time 1.2 hours)

AIRPLANE – DUAL

Scenario:

You are a CFI instructing with a student pilot working on a Private Pilot Certificate. You will be introducing emergency approach and landing, and system and equipment malfunctions.

Lesson Objective:

During this lesson, the PT will learn to perform and analyze emergency operations. In addition, the PT will demonstrate proficiency in the maneuvers listed for review. The PT will make proper decisions in managing the flight lesson and safety of flight.

Pre Briefing:

The PT will lead the briefings and will develop scenario-based lesson plans to meet the lesson objectives.

Completion Standards:

At the completion of this flight lesson, the PT will demonstrate that he/she can effectively perform and analyze the introductory maneuvers. In addition, he/she will be able to explain the principles and techniques of execution while demonstrating the listed review items and procedures in accordance with the current appropriate FAA Practical Test Standards and Airplane Flying Handbook. The PT shall establish and maintain the recommended best glide airspeed within  $\pm 5$  kts. as well as maintaining the specified configuration during simulated emergencies. On power off approaches, the PT shall touch down within 200 ft. of the designated point.

The PT will also demonstrate the ability to safely manage the flight lesson through an acceptable use of aeronautical decision making, risk management, and single pilot resource management.

Desire Outcome Grade Sheet:

Lesson 12 <b>Desired Outcome Grade Sheet</b>			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Preflight briefing	Preflight Discussion	Practice							
	Effectively managed all resources available related to the flight lesson	Perform							
	Discussed and demonstrated the proper use of automation management in all phases of flight	Perform							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Perform							
	Discussed and demonstrated proper task management throughout the flight lesson	Perform							
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Perform							
	Discussed and demonstrated the avoidance of controlled flight into terrain	Perform							
	Effectively managed the flight as an PT	Perform							
Review	Checklist usage – flow patterns	Perform							
	Short-field takeoffs and maximum performance climb								
	Short-field approaches and landings								
	Soft-field takeoff and climb								
	Soft-field approach and landing								
	Power-off 180° accuracy approach and landing								
Introduction	Emergency approach and landing	Practice							
	System and equipment malfunctions	Practice							
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Perform							
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Perform							
	Discussed and is able to explain assessing the risk of a student and flight lesson	Perform							
	Discussed and is able to explain factors that affect decision making	Perform							



	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Perform								
Postflight Discussion	Critique student performance, preview next lesson, and make study assignment	Perform								

Debriefing:

Again, the PT will lead the debriefing using LCG techniques. Discuss both the pilot's performance and differences in actual and desired outcomes.

Assignment for Lesson 13:

Prepare lesson plan for:

1. Night Operations
2. Weather Information
3. Performance Limitations
4. Navigation and Flight Planning
5. Airplane Weight and Balance

Notes to the Instructor:

The PT should be given the opportunity to try different techniques during the course of this lesson. At the completion of the lesson, alternative techniques should be discussed. Finally, the PT should determine which technique is best practice and explain why. The instructor could follow the PT's discussion with a guided discussion to introduce additional techniques and further consider best practices. Please remember that you should not give the PT the "correct answer," you may however offer several "what if" questions or similar questions to guide the PT to a better practice. The PT may not be aware of the safety concerns involved in a particular technique, a discussion of these concerns may help the PT understand why one technique is better than another or why it is better in particular situation. Likewise the PT many not be aware of or may not have considered the standard operating procedures at your training facility.

Malfunction should be appropriate to private pilot types of flight and light general aviation airplanes. They should include excessive mag drops, engine failure, engine icing, high oil temperature, high cylinder temperature, loss of oil pressure, electrical problems including an alternator failure, landing light failure, and various system failures such as vacuum failure, radio, navigation receiver, etc. for example.

Analyze the Performance – Lesson 13  
Practice Flight Instruction – Mission  
GND Lesson 13 (Approximate lesson time 1.5 hours)

Scenario:

You are a CFI instructing with a student pilot working on a Private Pilot Certificate. This is the student pilot’s first night flight.

Lesson Objective:

During this lesson, the PT will review night operations, weather information, performance and limitations, navigation and flight planning, and weight and balance information. The PT will also make proper decisions in managing the flight lesson and safety of flight.

Pre Briefing:

The PT will lead all briefing and prepare scenario-based lesson plans that meet the learning objectives of this lesson.

Completion Standards:

This practice flight instruction lesson is complete when the PT is able to meet the desired outcomes listed on the grade sheet as well as display a thorough knowledge of the areas covered in this briefing. In addition, the PT will demonstrate the ability to safely manage the flight lesson through an acceptable use of aeronautical decision making, risk management, and single pilot resource management.

Desired Outcome Grade Sheet:

Lesson 13 Desired Outcome Grade Sheet			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Demonstration of SRM	Effectively managed all resources available related to the ground lesson	Perform							
	Discussed and demonstrated the proper use of automation management in all phases of ground	Perform							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Perform							
	Discussed and demonstrated proper task management throughout the ground lesson	Perform							

	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Perform												
	Discussed and demonstrated the avoidance of controlled flight into terrain	Perform												
	Effectively managed the flight as an PT	Perform												
Introduction	Night Operations as outlined in Flight Instructor PTS	Practice												
	Weather information as outlined in Flight Instructor PTS	Practice												
	Performance and limitations as outlined in Flight Instructor PTS	Practice												
	Navigation and flight planning as outlined in Flight Instructor PTS	Practice												
	Airplane weight and balance as outlined in Flight Instructor PTS	Practice												
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Perform												
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Perform												
	Discussed and is able to explain assessing the risk of a student and flight lesson	Perform												
	Discussed and is able to explain factors that affect decision making	Perform												
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Perform												

### Debriefing:

The PT will lead the post-flight debriefing. The debriefing should include grading and performance differences. The discussion should provide meaningful feedback to the simulated student and an opportunity to practice judgment and critical thinking skills.

### Assignment for Lesson 14

1. Prepare lesson plan night operations

### Notes to the Instructor:

The debriefing should use a LCG process. The PT should be practicing the guided discussion method and offering meaningful alternatives with complete explanations. The PT may include open-ended questions to lead the simulated student through considering alternatives and to practice thinking skills.

Analyze the Performance – Lesson 14  
Practice Flight Instruction on Night Operations – Mission  
FLT Lesson 14 (Approximate lesson time 1.3 hours)

AIRPLANE – DUAL

Scenario:

You are a CFI instructing with a student pilot working on a Private Pilot Certificate. The student has recently experienced a taxi incident and is questioning his desire to learn to fly.

Lesson Objective:

During this lesson, the PT will learn to effectively perform and analyze normal and emergency night operations. In addition, the PT will demonstrate the ability to safely manage the flight lesson through an acceptable use of aeronautical decision making, risk management, and single pilot resource management.

Pre Briefing:

The PT is responsible for the creation and presentation of the lesson’s scenario and plan of action that meets the objectives of the lesson. The PT will make proper decisions in managing the flight lesson and safety of flight.

Completion Standards:

At the completion of this lesson, the PT will demonstrate that he/she can effectively perform and analyze the above introductory maneuvers. In addition, the PT will demonstrate the ability to safely manage the flight lesson through an acceptable use of aeronautical decision making, risk management, and single pilot resource management.

Desired Outcome Grade Sheet:

Lesson 14 <b>Desired Outcome Grade Sheet</b>			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Preflight briefing	Preflight briefing will be performed by the PT	Practice							
	Effectively managed all resources available related to the flight lesson	Perform							
	Discussed and demonstrated the proper use of automation management in all phases of flight	Perform							

	Identified and discussed areas of risk and made proper decisions in managing those situation	Perform													
	Discussed and demonstrated proper task management throughout the flight lesson	Perform													
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Perform													
	Discussed and demonstrated the avoidance of controlled flight into terrain	Perform													
	Effectively managed the flight as an PT	Perform													
Review	Checklist usage – flow patterns	Perform													
Introduction	Night preflight operations	Practice													
	Night taxi operations	Practice													
	Night Takeoffs	Practice													
	Maneuvering during slow flight	Practice													
	Stalls	Practice													
	Steep turns	Practice													
	Night navigation	Practice													
	Night emergency operations														
	Engine failure, approach and landing with various flap settings	Practice													
	System and equipment malfunctions	Practice													
	Night landings with various flap settings														
	With landing light	Practice													
	Without landing light	Practice													
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Perform													
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Perform													
	Discussed and is able to explain assessing the risk of a student and flight lesson	Perform													
	Discussed and is able to explain factors that affect decision making	Perform													
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Perform													
Postflight Discussion	Critique student performance, preview next lesson, and make study assignment	Perform													

### Debriefing:

The PT will conduct a thorough debriefing of the flight using LCG techniques. Remember that the simulated student has experienced a loss of confidence; therefore, the debriefing should be structured to help rebuild the student's confidence. This briefing may be followed by an instructor debriefing of the PT's performance as an instructor.

### Assignment for Lesson 15:

1. Steep Turns
2. Chandelles
3. Lazy Eights
4. Steep Spirals

### Notes to the Instructor:

The PT should be developing effective scenarios to cover the listed material.

What questions can you ask your student to help the student build confidence? During most debriefing, you are challenging the student to think beyond their comfort zone and to consider all alternatives maybe even less obvious alternatives. During the confidence builder, you should attempt to appraise the student more and appraise the student for the alternatives the student does consider without prompting.

During your review of their performance, did the student recognize performance deviation and attempt to correct? Recognizing your own mistakes is an important learning step, the student needs to be told that and reassured that this is showing good progress even if they have done better before. Explain the effects of stress and value of self corrections.

Analyze the Performance – Lesson 15  
 Ground Review – Mission  
 GND Lesson 15 (Approximate lesson time 1.5 hours)

Scenario:

You are a CFI instructing with a private pilot working on a commercial certificate. The student can describe the maneuvers but is having trouble doing the maneuvers.

Lesson Objective:

During this lesson, the PT will review steep turns, chandelles, lazy eights and steep spirals.

Pre Briefing:

The PT will conduct the briefing for this lesson.

Completion Standards:

During this lesson, the PT displays a thorough knowledge of the areas covered in this briefing. In addition, the PT will demonstrate the ability to safely manage the flight lesson through an acceptable use of aeronautical decision making, risk management, and single pilot resource management.

Desired Outcome Grade Sheet:

Lesson 15 Desired Outcome Grade Sheet			Task Grades				SRM Grades		
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Demonstration of SRM	Effectively managed all resources available related to the ground lesson	Perform							
	Discussed and demonstrated the proper use of automation management in all phases of ground	Perform							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Perform							
	Discussed and demonstrated proper task management throughout the ground lesson	Perform							

	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Perform																
	Discussed and demonstrated the avoidance of controlled flight into terrain	Perform																
	Effectively managed the flight as an PT	Perform																
Review	Steep Turns as outlined in Flight Instructor PTS	Practice																
	Chandelles as outlined in Flight Instructor PTS	Practice																
	Lazy eights as outlined in Flight Instructor PTS	Practice																
	Steep spirals as outlined in Flight Instructor PTS	Practice																
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Perform																
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Perform																
	Discussed and is able to explain assessing the risk of a student and flight lesson	Perform																
	Discussed and is able to explain factors that affect decision making	Perform																
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Perform																

Debriefing:

The PT should lead the post-flight debriefing and engaging the simulated student in meaningful discussions about the student's performance and critical thinking skills.

Assignment for Lesson 16

1. Prepare lesson/instruction for steep turns, chandelles, lazy eights, and steep spirals



### Notes to the Instructor:

The PT should actively participate in the selection of the lesson plans to be assigned for the lesson 16. The PT should recognize where he/she needs additional work and should be able to plan activities to get that additional work.

The scenario for this lesson says that the student is having trouble with the maneuvers; this will challenge the PT to develop scenarios that address these problems. Typically, the PT will need to analyze the problem and will need to determine where the skill set practiced in the maneuver would normally be used in flight. Knowing where the skill set is normally used will help to PT develop an appropriate scenario. Understanding the problem should allow appropriate practice to master the maneuver.

During the debriefing the PT should be including discussions about situations that were encountered during the preflight, in-flight, and post-flight as well as how these situations were resolved. Again, this is one way to practice thinking skills.

Analyze the Performance – Lesson 16  
Practice Flight Instruction – Mission  
FLT Lesson 16 (Approximate lesson time 1.2 hours)

AIRPLANE – DUAL

Scenario:

You are a CFI instructing with a private pilot working on a commercial certificate. This is the private pilot's second commercial maneuvers lesson. The private pilot has trouble maintaining control of the airplane during ground reference maneuvers. The private pilot doesn't appear to be considering the effects of the airspeed changes on control inputs.

Lesson Objective:

During this lesson, the PT will learn to effectively perform and analyze steep turns, chandelles, lazy eights, and steep spirals. In addition, the PT will demonstrate proficiency in the maneuvers listed for review and the ability to safely manage the flight lesson through an acceptable use of aeronautical decision making, risk management, and single pilot resource management.

Pre Briefing:

The PT will lead all briefings for this lesson.

Completion Standards:

At the completion of this lesson, the PT will demonstrate that he/she can effectively perform and analyze the listed introductory maneuvers. He/she will also be able to explain the principles and techniques of execution while demonstrating the listed review items and procedures in accordance with the current appropriate FAA Practical Test Standards and Airplane Flying Handbook. In addition, the PT will demonstrate the ability to safely manage the flight lesson through an acceptable use of aeronautical decision making, risk management, and single pilot resource management.

Desired Outcome Grade Sheet:

Lesson 16 <b>Desired Outcome Grade Sheet</b>			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Preflight briefing	Preflight briefing will be performed by the PT	Perform							
	Effectively managed all resources available related to the flight lesson	Perform							
	Discussed and demonstrated the proper use of automation management in all phases of flight	Perform							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Perform							
	Discussed and demonstrated proper task management throughout the flight lesson	Perform							
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Perform							
	Discussed and demonstrated the avoidance of controlled flight into terrain	Perform							
	Effectively managed the flight as an PT	Perform							
Review	Checklist usage – flow patterns	Perform							
	Emergency approach and landing with various flap settings	Practice							
	System and equipment malfunctions	Practice							
Introduction	Steep Turns	Practice							
	Chandelles	Practice							
	Lazy eights	Practice							
	Steep spirals	Practice							
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Perform							
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Perform							
	Discussed and is able to explain assessing the risk of a student and flight lesson	Perform							
	Discussed and is able to explain factors that affect decision making	Perform							
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Perform							

Postflight Discussion	Critique student performance, preview next lesson, and make study assignment	Perform								
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Debriefing:

The PT will lead the debriefing. The debriefing should be tailored to enhancing the simulated student’s understanding of steep turns, chandelles, lazy eights, and steep spirals and to helping the student his/her own performance.

Assignment for Lesson 17

1. Review of Aerodynamic and Performance Elements of Flight Maneuvers Assigned by Instructor

Notes to the Instructor:

Continue to work on areas that need improvement before the FAA Practical Test.

Teaching the student to recognize their own strengths and weaknesses is an important step toward being able to determine what needs to be done on the next less or knowing when they need to seek additional training. In other words, teaching the simulated student to be a self-learner.

The scenario for the lesson suggested that the simulated student was having trouble with ground reference maneuvers. This should cause the briefing and debriefing to focus on situations and circumstances related to ground reference maneuvers rather than on more generic discussions. That is, guide the discussions to topics related to ground reference maneuvers. Remind the PT that much of his/her instruction will need to be tailored to solving one or more of the student performance problems and that PT will need to build scenarios that emphasis the needed training.

Analyze the Performance – Lesson 17  
Practice Flight – Mission  
FLT Lesson 17 (Approximate lesson time 1.2 hours)

AIRPLANE – DUAL

Scenario:

You are a CFI instructing with a private pilot working on a commercial certificate. The student is able to do the maneuvers, but only with help from you.

Lesson Objective:

During the lesson, the PT will review performance maneuvers. In addition, the PT will demonstrate proficiency in the maneuvers assigned by the Flight Instructor as well as practice in-flight instruction.

Pre Briefing:

All briefings will be lead by the PT. The instructor should also cover others area he/she feels are appropriate from earlier lessons.

Completion Standards:

At the completion of this flight lesson, the PT will demonstrate that he/she can effectively perform, analyze and explain the principles and techniques of execution. In addition, the PT will demonstrate a thorough understanding of the performance elements for each maneuver performed. The PT will demonstrate the maneuvers and procedures in accordance with the current appropriate FAA Practical Test Standards. The PT will also demonstrate the ability to safely manage the flight lesson through an acceptable use of aeronautical decision making, risk management, and single pilot resource management.

Desire Outcome Grade Sheet:

Lesson 17 <b>Desired Outcome Grade Sheet</b>			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Demonstration of SRM	Preflight briefing	Perform							
	Effectively managed all resources available related to the flight lesson	Manage/Decide							
	Discussed and demonstrated the proper use of automation management in all phases of flight	Manage/Decide							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Manage/Decide							
	Discussed and demonstrated proper task management throughout the flight lesson	Manage/Decide							
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Manage/Decide							
	Discussed and demonstrated the avoidance of controlled flight into terrain	Manage/Decide							
	Effectively managed the flight as an PT	Manage/Decide							
Review	Checklist usage – flow patterns	Perform							
	Steep turns	Perform							
	Chandelles	Perform							
	Lazy Eights	Perform							
	Steep Spirals	Perform							
	Maneuvers assigned by the flight instructor	Perform							
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Manage/Decide							
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Manage/Decide							
	Discussed and is able to explain assessing the risk of a student and flight lesson	Manage/Decide							
	Discussed and is able to explain factors that affect decision making	Manage/Decide							
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Manage/Decide							

Postflight Discussion	Critique student performance, preview next lesson, and make study assignment	Perform								
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Debriefing:

The debriefing should be lead by the PT and cover both the simulated student’s and his/her own performance.

Assignment for Lesson 18

1. Fundamentals of Instruction

Notes to the Instructor:

The PT should be incorporating effective aeronautical decision-making training in each presentation. The debriefing should engage the simulated student in meaningful discussions of their performance and solutions to the situational encountered during the flight. Additionally, the PT’s performance and handling of in-flight situations should be discussed. The PT should lead the debriefing for this lesson as well.

This lesson completes the first strand. The PT should be able to perform the Private and Commercial Pilot maneuvers in accordance with the appropriate FAA Practical Test Standards while instructing from the right seat. Since, the PT should be able to perform all maneuvers in both the Private and Commercial Pilot practical test to the PTS standards from the right seat, you should use this opportunity to review any maneuvers you or the PT feels should have additional practice. If there are no areas that need additional practice, then place emphasis on quality instruction.

During the second strand, the PT will practice effective instructional methods and techniques. The PT will continue to develop his/her right-seat flying skills but the emphasis will shift from simply talking while flying to providing effective flight instruction. Additionally, the PT will move from learning about scenario-based instruction to using scenario-based instruction to teach.

Strand 2 – Applying the Teaching Process and Fundamentals of Instruction through a Variety of Ground and Flight Instruction

Practice Instruction – Lesson 18  
 Review Teaching and Learning – Mission  
 GND Lesson 18 (Approximate lesson time 1.8 hours)

Scenario:

You are a CFI instructing your first flight instructor. Your student does not hold any FAA instructor certificates (neither Ground nor Flight).

Lesson Objective:

During this flight lesson, the PT will review the learning process, the teaching process, teaching methods, critique and evaluation, human behavior and effective communication, and planning instructional activity will be introduced to flight instructor characteristics and responsibilities.

Pre Briefing:

The PT will lead all briefings.

Completion Standards:

The PT will displays a thorough knowledge of the areas covered in this briefing.

Desire Outcome Grade Sheet:

Lesson 18 Desired Outcome Grade Sheet			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Demonstration of SRM	Effectively managed all resources available related to the ground lesson	Manage/Decide							
	Discussed and demonstrated the proper use of automation management in all phases of ground	Manage/Decide							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Manage/Decide							
	Discussed and demonstrated proper task management throughout the ground lesson	Manage/Decide							



	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Manage/ Decide																		
	Discussed and demonstrated the avoidance of controlled flight into terrain	Manage/ Decide																		
	Effectively managed the flight as an PT	Manage/ Decide																		
Introduction	The learning process as outlined in Flight Instructor PTS	Practice																		
	The teaching process as outlined in Flight Instructor PTS	Practice																		
	Teaching methods as outlined in Flight Instructor PTS	Practice																		
	Critique and evaluation as outlined in Flight Instructor PTS	Practice																		
	Flight instructor characteristics and responsibilities as outlined in Flight Instructor PTS	Practice																		
	Human behavior and effective communication as outlined in Flight Instructor PTS	Practice																		
	Planning instructional activity as outlined in Flight Instructor PTS																			
	Developing lesson plans for:																			
	Ground instruction lessons	Practice																		
Preflight briefing for a maneuver to be performed in flight	Practice																			
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Manage/ Decide																		
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Manage/ Decide																		
	Discussed and is able to explain assessing the risk of a student and flight lesson	Manage/ Decide																		
	Discussed and is able to explain factors that affect decision making	Manage/ Decide																		
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Manage/ Decide																		

### Debriefing:

The PT should lead this debriefing. The debriefing will have two focuses (a) the simulated student's performance and thinking skills and (b) the PT's teaching performance.

## Assignment for Lesson 19

1. Lesson Plan on Fundamentals of Flight
2. Lesson Plan on Normal and Crosswind Takeoff and Landing
3. Lesson Plan on Aerodynamics Demonstration

### Notes to the Instructor:

The scenario-based teaching and other problem-based learning methods should be emphasized because these methods serve the dual role of improving learning and help the development thinking skills. Good thinking skills are essential to aeronautical decision-making and judgment.

You may find that you will again need to demonstrate effective problem-based learning teaching methods since it is unlikely that the PT has exposed to these learning methods. From your example, the PT should be able to begin using them. You should actively participate in the teaching sessions to allow the PT to develop an effective teaching style of his/her own.

The PT is now working of effective instruction rather than on just talking while flying and flying proficiency while talking. The PT should continue to work on building effective scenarios to address the simulated student's needs.

The PT should be encouraged to use personal copies of source documents during this lesson. All source documents used by the PT must be current. You may want to discuss the importance of have a professional library and of making frequent reference to the various source documents. Source documents with notes can make excellent study material. Teaching students to use source documents not only help avoid misinformation it also facilitates self-learning. You can help the PT develop a habit of using source documents by doing so yourself. Likewise, the PT can help his/her students by his/her example.

Practice Instruction – Lesson 19  
Learn to Conduct a Ground Training Lesson – Mission  
GND Lesson 19 (Approximate lesson time 1.5 hours)

Scenario:

You are a CFI instructing a new commercial pilot working on a flight instructor certificate. You are introduction fundamentals of flight and effective teaching methods to your student.

Lesson Objective:

During this flight lesson, the PT will learn to conduct a ground training lesson by presenting lesson plans on fundamentals of flight, normal and crosswind takeoff and landing, and aerodynamics demonstration to his/her instructor. In addition, the PT will be able to identify common student errors and suggest effective corrective action.

Pre Briefing:

The PT will lead all briefings.

Completion Standards:

This lesson is complete when the PT demonstrates that he/she can adhere to a preplanned lesson plan and effectively communicate this lesson to his/her instructor. At the completion of the lesson, the instructor will critique the PT's presentation and make suggestions for improvement.

Desire Outcome Grade Sheet:

Lesson 19 <b>Desired Outcome Grade Sheet</b>			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Demonstration of SRM	Effectively managed all resources available related to the ground lesson	Manage/Decide							
	Discussed and demonstrated the proper use of automation management in all phases of ground	Manage/Decide							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Manage/Decide							
	Discussed and demonstrated proper task management throughout the ground lesson	Manage/Decide							

	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Manage/ Decide																		
	Discussed and demonstrated the avoidance of controlled flight into terrain	Manage/ Decide																		
	Effectively managed the flight as an PT	Manage/ Decide																		
Introduction	Lesson Plan on fundamentals of flight	Explain																		
	Presentation on fundamentals of flight	Explain																		
	Lesson plan on normal & crosswind takeoff & landing with various flap settings	Explain																		
	Presentation on normal & crosswind takeoff & landing with various flap settings	Explain																		
	Lesson Plan on aerodynamics demonstration	Explain																		
	Presentation on aerodynamics demonstration	Explain																		
	Discuss common student errors	Explain																		
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Manage/ Decide																		
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Manage/ Decide																		
	Discussed and is able to explain assessing the risk of a student and flight lesson	Manage/ Decide																		
	Discussed and is able to explain factors that affect decision making	Manage/ Decide																		
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Manage/ Decide																		

### Debriefing:

The PT should lead the debriefing and cover the simulated pilot's performance and practice of critical thinking skills.

The PT should also lead the debriefing of his/her own performance and handling of in-flight situations.

## Assignment for Lesson 20

1. Review preflight operations and basic maneuvers
2. Review identifying common student errors and suggesting effective corrective action

### Notes to the Instructor:

Encourage the PT to use problems as the bases for learning to enhance learning and facilitate the development of thinking skills. One way this can be done is to discuss the common errors that might occur during the maneuvers listed in the desired outcome grading sheet. A discussion of common errors will allow you an opportunity to check the PT understands of the common errors with the maneuvers as well as practice thinking skills. The PT practices thinking skills by considering alternatives in correcting common errors and selecting a solution. Then reflect on how the instructional problem was solved, search for additional alternatives, select the solution again, and discuss best practices.

Is the PT frequently referring to appropriate and current source documents? Is the PT using a problem or task as the bases for learning? Are the problems or tasks realistic and something the PT's student use or encounter in-flight? You may consider these questions as the PT begins to develop and present instruction. For additional information about problem-based instruction, refer the PT to the FAA/FITS website. The PT could also find examples of scenarios that could be used or adopted for use in the Private and Commercial Pilot syllabi on the FAA/FITS website.

Analyze the Performance – Lesson 20  
Practice Flight – Mission  
FLT Lesson 20 (Approximate lesson time 1.3 hours)

AIRPLANE – DUAL

Scenario:

You are a CFI instructing with a student pilot working on a Private Pilot Certificate. This is the review flight prior to the first solo.

Lesson Objective:

During the lesson, the PT will learn to effectively teach the listed preflight operations and basic maneuvers. In addition, the PT will be able to identify common student errors and suggest effective corrective action.

Pre Briefing:

All briefings will be lead by the PT. The instructor should also cover others area he/she feels are appropriate from earlier lessons.

Completion Standards:

At the completion of this flight lesson, the PT will demonstrate the proper instructional procedures for conducting a flight lesson for the listed maneuvers. In addition, each of the maneuvers will be demonstrated in accordance with the current appropriate FAA Practical Test Standards. The explanation will include the identification of common errors and the proper corrective action. The PT will also demonstrate the ability to safely manage the flight lesson through an acceptable use of aeronautical decision making, risk management, and single pilot resource management.

Desire Outcome Grade Sheet:

Lesson 20 <b>Desired Outcome Grade Sheet</b>			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Demonstration of SRM	Preflight Discussion	Perform							
	Effectively managed all resources available related to the flight lesson	Manage/Decide							
	Discussed and demonstrated the proper use of automation management in all phases of flight	Manage/Decide							

	Identified and discussed areas of risk and made proper decisions in managing those situation	Manage/Decide												
	Discussed and demonstrated proper task management throughout the flight lesson	Manage/Decide												
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Manage/Decide												
	Discussed and demonstrated the avoidance of controlled flight into terrain	Manage/Decide												
	Effectively managed the flight as an PT	Manage/Decide												
Introduction	Aircraft preflight inspection	Perform												
	Checklist usage – flow patterns	Perform												
	Normal and crosswind taxi operations	Practice												
	Normal and crosswind takeoffs	Practice												
	Traffic patterns	Perform												
	Collision avoidance procedures	Perform												
	Wake turbulence avoidance	Perform												
	Straight and level flight	Practice												
	Straight, constant airspeed climbs	Practice												
	Straight, constant airspeed descents	Practice												
	Turns to headings	Practice												
	Aerodynamics demonstration	Practice												
	Normal and crosswind landings with various flap settings	Practice												
	No flap landings	Practice												
Power-off 180° approach and landing	Practice													
Go-around	Practice													
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Manage/Decide												
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Manage/Decide												
	Discussed and is able to explain assessing the risk of a student and flight lesson	Manage/Decide												
	Discussed and is able to explain factors that affect decision making	Manage/Decide												
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Manage/Decide												
Postflight Discussion	Critique student performance, preview next lesson, and make study assignment	Perform												

### Debriefing:

The debriefing is lead by the PT. Emphasis should be on effective teaching and developing engaging post-flight discussions of the performance and handling of any situation encountered during the flight.

### Assignment for Lesson 21

1. Lesson Plan on Rectangular Course
2. Lesson Plan on S-turns Across a Road
3. Lesson Plan on Turns Around a Point
4. Lesson Plan on Eights on Pylons

### Notes to the Instructor:

The PT should be incorporating effective aeronautical decision-making training in each presentation.

The PT should be creating effective scenarios for the topics he/she are attempting to teach. In this case, the simulated student is pre-solo; therefore, the scenario should be designed to prepare the student for the first solo and it should include development of thinking skills needed for the first solo. Encourage the PT to use the FAA/FITS website for examples of scenarios.



Practice Instruction – Lesson 21  
Learn to Conduct a Ground Training Lesson – Mission  
GND Lesson 21 (Approximate lesson time 1.5 hours)

Scenario:

You are a CFI instructing with a student pilot working on a Private Pilot Certificate. The student is having trouble maintaining proper runway displacement in the traffic pattern on downwind and runway alignment on the final approach.

Lesson Objective:

During this flight lesson, the PT will learn to conduct preflight briefing for a maneuver to be performed in flight and ground training lessons by presenting lesson plans on the maneuvers listed on the grade sheet below. In addition, the PT will be able to identify common student errors and suggest effective corrective action.

Pre Briefing:

The PT will lead all briefings.

Completion Standards:

This lesson is complete when the PT demonstrates that he/she can adhere to a preplanned lesson plan and effectively communicate this lesson to his/her instructor. At the completion of this lesson, the instructor will critique the PT's presentation and make suggestions for improvement.

Desire Outcome Grade Sheet:

Lesson 21 <b>Desired Outcome Grade Sheet</b>			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Demonstration of SRM	Effectively managed all resources available related to the ground lesson	Manage/Decide							
	Discussed and demonstrated the proper use of automation management in all phases of ground	Manage/Decide							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Manage/Decide							
	Discussed and demonstrated proper task management throughout the ground lesson	Manage/Decide							

	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Manage/ Decide																
	Discussed and demonstrated the avoidance of controlled flight into terrain	Manage/ Decide																
	Effectively managed the flight as an PT	Manage/ Decide																
Introduction	Lesson plan on rectangular course	Practice																
	Presentation on rectangular course	Practice																
	Lesson plan on s-turns across a road	Practice																
	Presentation on s-turns across a road	Practice																
	Lesson plan on turns around a point	Practice																
	Presentation on turns around a point	Practice																
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Manage/ Decide																
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Manage/ Decide																
	Discussed and is able to explain assessing the risk of a student and flight lesson	Manage/ Decide																
	Discussed and is able to explain factors that affect decision making	Manage/ Decide																
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Manage/ Decide																

Debriefing:

The PT should lead the debriefing. The debriefing should be tailored to deal with the simulated student difficulties with ground reference maneuvers.

Assignment for Lesson 22

Review as required.

Notes to the Instructor:

The instructor shall select at least one lesson plan and presentation to be performed as a preflight briefing for a maneuver to be performed in flight. The other lesson plans will be performed as a ground training lesson.

The PT should be using common errors as points as learning opportunities and lead a discussion of possible solutions to these common errors as a means to promote practice thinking skills.

Analyze the Performance – Lesson 22  
Practice Flight – Mission  
FLT Lesson 22 (Approximate lesson time 1.5 hours)

AIRPLANE – DUAL

Scenario:

You are a CFI instructing with a private pilot working on a Commercial Certificate. The student is being introduced to ground reference maneuvers.

Lesson Objective:

During the lesson the PT will learn to effectively teach the listed Ground Reference Maneuvers. In addition, the PT will demonstrate proficiency in the practice instruction of the maneuvers listed for review. The PT will be able to identify common student errors and suggest effective corrective action.

Pre Briefing:

All briefings will be lead by the PT.

Completion Standards:

At the completion of this lesson, the PT will demonstrate the proper instructional procedures for conducting a flight lesson for the listed maneuvers. In addition, each of the maneuvers will be demonstrated in accordance with the current appropriate FAA PTS. Additional maneuvers outlined in the Airplane Flying Handbook will be performed to the following standards:  $\pm 100$  ft. on all altitudes and  $\pm 10$  kts. on all airspeeds. The explanation will include the identification of common student errors and the proper corrective action. The PT will also demonstrate the ability to safely manage the flight lesson through an acceptable use of aeronautical decision making, risk management, and single pilot resource management.

Desire Outcome Grade Sheet:

Lesson 22 <b>Desired Outcome Grade Sheet</b>			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Demonstration of SRM	Preflight discussion	Perform							
	Effectively managed all resources available related to the flight lesson	Manage/Decide							
	Discussed and demonstrated the proper use of automation management in all phases of flight	Manage/Decide							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Manage/Decide							
	Discussed and demonstrated proper task management throughout the flight lesson	Manage/Decide							
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Manage/Decide							
	Discussed and demonstrated the avoidance of controlled flight into terrain	Manage/Decide							
	Effectively managed the flight as an PT	Manage/Decide							
Review	Aircraft preflight inspection	Perform							
	Checklist usage – flow patterns	Perform							
	Normal and crosswind taxi operations	Perform							
	Normal and crosswind takeoffs	Perform							
	Normal and crosswind landings with various flap settings	Perform							
Introduction	Ground Reference Maneuvers								
	Tracking a straight line	Practice							
	Rectangular patterns	Practice							
	S-turns	Practice							
	Turns around a point	Practice							
	Eights on pylons	Practice							
	Eights around pylons	Practice							
	Eights across a road	Practice							
Eights along a road	Practice								
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Manage/Decide							
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Manage/Decide							
	Discussed and is able to explain assessing the risk of a student and flight lesson	Manage/Decide							

	Discussed and is able to explain factors that affect decision making	Manage/Decide									
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Manage/Decide									
Postflight Discussion	Critique student performance, preview next lesson and make study assignment	Perform									

Debriefing:

The PT should lead the debriefing. The PT should emphasize the common errors displayed by the simulated student. The PT should lead a guided discussion on situations that may cause a pilot to experience difficulties with the ground references maneuvers. In-flight situations should be posed to the simulated student so the student can formulate solutions.

Assignment for Lesson 23:

1. Lesson Plan on Forward Slip to a Landing
2. Lesson Plan on Go-around
3. Lesson Plan on Navigation and Flight Planning
4. Lesson Plan on Basic Instrument Maneuvers
5. Lesson Plan on Emergency Approach and Landings
6. Lesson Plan on System and Equipment Malfunctions

Notes to the Instructor:

The PT should be incorporating effective aeronautical decision-making training in each presentation. This can be done during the in-flight situation discussions. The PT should be able to sit up a situation for each maneuver covered in the lesson and assign a task or problem associated with the situation for the simulated student to solve. Invalid solutions may be offered from time-to-time to ensure the PT is able to detect and suggest valid alternatives as well as lead effective guided discussions.

Practice Instruction – Lesson 23  
Learn to Conduct a Ground Training Lesson – Mission  
GND Lesson 23 (Approximate lesson time 1.5 hours)

Scenario:

You are a CFI instructing with a student pilot that is making good progress toward his Private Pilot Certificate.

Lesson Objective:

During this flight lesson, the PT will learn to effectively teach forward slips to landings and navigation and flight planning as it relates to cross-country flying. The PT will learn to effectively teach go-arounds and basic instrument maneuvers. The PT will be able to identify the common student errors and suggest corrective action.

Pre Briefing:

The PT will lead all briefings.

Completion Standards:

This lesson is complete when the PT demonstrates the ability to adhere to a preplanned lesson plan and effectively communicate this lesson to the instructor. At the completion of the lesson the instructor will critique the PT's presentation and make suggestions for improvement. The PT will also demonstrate the ability to safely manage the flight lesson through an acceptable use of aeronautical decision making, risk management, and single pilot resource management.

Desire Outcome Grade Sheet:

Lesson 23 Desired Outcome Grade Sheet			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Demonstration of SRM	Effectively managed all resources available related to the ground lesson	Manage/Decide							
	Discussed and demonstrated the proper use of automation management in all phases of ground	Manage/Decide							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Manage/Decide							
	Discussed and demonstrated proper task management throughout the ground lesson	Manage/Decide							

	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Manage/ Decide																	
	Discussed and demonstrated the avoidance of controlled flight into terrain	Manage/ Decide																	
	Effectively managed the flight as an PT	Manage/ Decide																	
Review	Lesson plan on forward slip to a landing	Practice																	
	Presentation on forward slip to a landing	Practice																	
	Lesson plan on go-around	Practice																	
	Presentation on go-around	Practice																	
	Lesson plan on navigation and flight planning	Practice																	
	Presentation on navigation and flight planning	Practice																	
	Lesson plan on basic instrument maneuvers	Practice																	
	Presentation on basic instrument maneuvers	Practice																	
	Lesson plan on emergency approach and landing with various flap settings	Practice																	
	Presentation on emergency approach and landing with various flap settings	Practice																	
	Lesson plan on system and equipment malfunctions	Practice																	
	Presentation on system and equipment malfunctions	Practice																	
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Manage/ Decide																	
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Manage/ Decide																	
	Discussed and is able to explain assessing the risk of a student and flight lesson	Manage/ Decide																	
	Discussed and is able to explain factors that affect decision making	Manage/ Decide																	
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Manage/ Decide																	



### Debriefing:

The instructor will use a LCG technique for the PT's debriefing. The PT will actively participate in the debriefing suggesting areas where self-improvement is needed. The PT should take advantage of the basic instrument maneuver discussion to offer scenarios where the basic instrument maneuvers may be applicable. The discussions should include considering ways the situation could and should have been avoided. Practice critical thinking and judgment skills.

### Assignment for Lesson 24

1. Plan a VFR Cross-country flight in accordance with the guidelines of the Commercial Practical Test Standards. This planning will be used to complete lesson 24.

### Notes to the Instructor:

The instructor and PT should be doing separate assessments of the PT performance. Following the individual assessments, the PT should be conducting the debriefing to identify and correct problem areas as well as to learn how to do effective LCG debriefings. You should remind the PT that the debriefings should include discussions of alternative ways to solve the problems encountered in the lesson and considerations of which solution is best. In other words, the PT should be engaged in developing thinking skills as well as his/her teaching skills.

Did the PT adequately cover inadvertent IMC avoidance? Did the PT use this opportunity to have the simulated student practice critical thinking skills? Did the PT use all of the steps recommended earlier to develop and enhance thinking skills effectively?

Analyze the Performance – Lesson 24  
Practice Flight – Mission  
FLT Lesson 24 (Approximate lesson time 2.0 hours)

Scenario:

You are a CFI instructing with a private pilot working on a Commercial Certificate. The student is preparing for his Practical Test.

Lesson Objective:

During the lesson, the PT will learn to effectively teach proper cross-country flying procedures, using the cross-country planning that was done as part of Briefing 23.

Pre Briefing:

All briefings will be lead by the PT. To the maximum extent possible, the PT should use a problem as the bases for learning.

Completion Standards:

At the completion of this lesson, the PT will demonstrate he/she can effectively perform and teach the cross-country maneuvers and procedures. In addition, he/she will be able to explain the principles and techniques of execution while demonstrating the listed items and procedures in accordance with the current appropriate FAA PTS. The PT will also demonstrate the ability to safely manage the flight lesson through an acceptable use of aeronautical decision making, risk management, and single pilot resource management.

Desire Outcome Grade Sheet:

Lesson 24 Desired Outcome Grade Sheet			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Demonstration of SRM	Preflight discussion	Perform							
	Effectively managed all resources available related to the flight lesson	Manage/Decide							
	Discussed and demonstrated the proper use of automation management in all phases of flight	Manage/Decide							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Manage/Decide							

	Discussed and demonstrated proper task management throughout the flight lesson	Manage/Decide																		
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Manage/Decide																		
	Discussed and demonstrated the avoidance of controlled flight into terrain	Manage/Decide																		
	Effectively managed the flight as an PT	Manage/Decide																		
Review	Checklist usage – flow patterns	Perform																		
	Emergency operations	Perform																		
	Emergency approach and landing (simulated)	Perform																		
	System and equipment malfunctions	Perform																		
Introduction	Cross-country flight with landings at three different airports with one airport more than 50 nautical miles from the original departure point	Practice																		
	Cross-country procedures																			
	Power plant operations/management	Practice																		
	Departure procedures	Practice																		
	Flight plan activation	Practice																		
	Dead reckoning	Practice																		
	Pilotage	Practice																		
	Ground speed calculations	Practice																		
	Calculation of ETAs to checkpoints and destination	Practice																		
	Maintenance of current nav log data	Practice																		
	Radio navigation	Practice																		
	Lost procedures	Practice																		
	Diversion to alternate	Practice																		
	Flight by reference to instruments																			
	Straight and level flight	Practice																		
	Straight constant airspeed climbs	Practice																		
	Straight constant airspeed descents	Practice																		
	Turns to headings	Practice																		
	Critical flight attitudes	Practice																		
	Radio aids and radar services	Practice																		
After landing and shutdown procedures																				
Closure of VFR flight plan	Practice																			
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Manage/Decide																		
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Manage/Decide																		
	Discussed and is able to explain assessing the risk of a student and flight lesson	Manage/Decide																		

	Discussed and is able to explain factors that affect decision making	Manage/Decide									
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Manage/Decide									
Postflight discussion	Critique student performance, preview next lesson, and make study assignment	Perform									

Debriefing:

The PT will lead the simulated student debriefing using LCG. Cross-country flight planning and flights provide many opportunities to practice critical thinking. Set up situations to lead the simulated student into engaged discussions. Challenge the simulated student to think through several contingency plans so that typical in-flight situations do not catch the student off guard.

Assignment for Lesson 25

1. Lesson Plan on Maneuvering During Slow Flight
2. Lesson Plan on Proficiency Stalls
3. Lesson Plan on Demonstration Stalls

Notes to the Instructor:

The PT should be incorporating effective aeronautical decision-making training in each presentation. The more “what ifs” the student considers the better prepared the student should be to deal with changes. Simple scenarios can be easily expanded to create great learning experiences with “what ifs.” There are several document available on the FAA/FITS website on cross-country scenarios, the PT should refer to these document for additional help.

Practice Instruction – Lesson 25  
Learn to Conduct a Ground Training Lesson – Mission  
GND Lesson 25 (Approximate lesson time 1.5 hours)

Scenario:

You are a CFI instructing with a student pilot on the third lesson on slow flight and stalls. The student has accomplished acceptable performance on slow flight and each of the stalls; however, he has not been able to do the all in the same flight. You are concerned that the student does not understand the aerodynamics to an application level; thus, he cannot or is not able to make the necessary adjustment to complete them all in a single flight.

Lesson Objective:

During this flight lesson, the PT will learn to conduct preflight briefings for a maneuver to be performed in flight and ground training lessons by presenting lesson plans on Maneuvering During Slow Flight, Demonstration Stalls and Proficiency Stalls to his/her instructor. In addition, the PT will be able to identify common student errors and suggest effective corrective action.

Pre Briefing:

The PT will lead all briefings.

Completion Standards:

This lesson is complete when the PT demonstrates that he/she can adhere to a preplanned lesson plan and effectively communicate this lesson to his/her instructor.

Desire Outcome Grade Sheet:

Lesson 25 <b>Desired Outcome Grade Sheet</b>			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Demonstration of SRM	Effectively managed all resources available related to the ground lesson	Manage/Decide							
	Discussed and demonstrated the proper use of automation management in all phases of ground	Manage/Decide							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Manage/Decide							
	Discussed and demonstrated proper task management throughout the ground lesson	Manage/Decide							
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Manage/Decide							
	Discussed and demonstrated the avoidance of controlled flight into terrain	Manage/Decide							
	Effectively managed the flight as an PT	Manage/Decide							
Review	Lesson plan on Maneuvering During Slow Flight	Practice							
	Presentation on Maneuvering During Slow Flight	Practice							
	Lesson plan on Proficiency Stalls	Practice							
	Presentation on Proficiency Stalls	Practice							
	Lesson plan on Demonstration Stalls	Practice							
	Presentation on Demonstration Stalls	Practice							
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Manage/Decide							
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Manage/Decide							
	Discussed and is able to explain assessing the risk of a student and flight lesson	Manage/Decide							
	Discussed and is able to explain factors that affect decision making	Manage/Decide							
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Manage/Decide							

### Debriefing:

The PT should lead the debriefing. Emphasis should be placed on common errors and the application of aeronautical knowledge. Employ guided discussions to lead the simulated student through the aeronautical knowledge to help the student find and correct misunderstanding and knowledge gaps.

Assignment for Lesson 26

Review as required.

### Notes to the Instructor:

At the completion of the lesson, the instructor will critique the PT's presentation and make suggestions for improvement.

Note: the instructor shall select at least one lesson plan and presentation to be performed as a preflight briefing for a maneuver to be performed in flight. The other lesson plans will be presented as ground training lessons. When several lessons cover the same maneuvers, one of the other maneuvers should be performed in flight while the remaining maneuvers are presented as the ground training lessons. The ground training lessons should cover various in-flight situations that challenge the student to think critically. Again, work on developing and enhancing thinking skills.

Analyze the Performance – Lesson 26  
Practice Flight – Mission  
FLT Lesson 26 (Approximate lesson time 1.3 hours)

AIRPLANE/COMPLEX – DUAL

Scenario:

You are a CFI instructing with a private pilot seeking a complex airplane endorsement. The student has just bought a new “glass” complex airplane and plans to take his family to Vail, CO on a ski trip next week. The student previously completed a ground training program covering legacy complex systems and procedures.

Lesson Objective:

During the lesson, the PT will learn to effectively teach Maneuvering During Slow Flight, Demonstration and Proficiency Stalls, Emergency operations, and Normal and Crosswind Takeoffs and Landings in a complex airplane. The PT will be able to identify common student errors and suggest effective corrective action.

Pre Briefing:

All briefings will be lead by the PT.

Completion Standards:

At the completion of this lesson, the PT will demonstrate the proper instructional procedures for conducting a flight lesson for the listed maneuvers. In addition, each maneuver will be demonstrated in accordance with the current appropriate FAA PTS. Additional maneuvers outlined in the Airplane Flying Handbook will be performed to the following standards: recovers at the first indication of a stall and recovers within  $\pm 100$  ft. of the recovery altitude with no secondary stall. The explanation of the maneuvers and demonstrations will include the identification of common student errors and the proper corrective actions. The PT will also demonstrate the ability to safely manage the flight lesson through an acceptable use of aeronautical decision making, risk management, and single pilot resource management.



Desire Outcome Grade Sheet:

Lesson 26 <b>Desired Outcome Grade Sheet</b>			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Demonstration of SRM	Preflight discussion	Perform							
	Effectively managed all resources available related to the flight lesson	Manage/Decide							
	Discussed and demonstrated the proper use of automation management in all phases of flight	Manage/Decide							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Manage/Decide							
	Discussed and demonstrated proper task management throughout the flight lesson	Manage/Decide							
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Manage/Decide							
	Discussed and demonstrated the avoidance of controlled flight into terrain	Manage/Decide							
	Effectively managed the flight as an PT	Manage/Decide							
Introduction	Preflight procedures	Perform							
	Checklist usage – flow patterns	Perform							
	Maneuvering during slow flight								
	Climbs and descents	Perform							
	Various drag configurations	Perform							
	Turns at various bank angles	Perform							
	Demonstration and proficiency stalls								
	Power-on stalls	Practice							
	Power-off stalls	Practice							
	Crossed-control stalls	Practice							
	Elevator-trim stalls	Practice							
	Secondary stalls	Practice							
	Accelerated stalls	Practice							
	Emergency procedures	Practice							
	Normal and crosswind takeoffs	Perform							
	Normal and crosswind landings with various flap settings	Perform							
	Complex airplane operations	Practice							
	Complex airplane systems	Practice							
Retractable landing gear	Practice								
Variable-pitch propellers	Practice								
Turbo-changing	Practice								

Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Manage/Decide										
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Manage/Decide										
	Discussed and is able to explain assessing the risk of a student and flight lesson	Manage/Decide										
	Discussed and is able to explain factors that affect decision making	Manage/Decide										
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Manage/Decide										
Postflight Discussion	Critique student performance, preview next lesson, and make study assignment	Perform										

Debriefing:

The PT will lead the debriefing. Since the simulated student previously completed a complex aircraft ground training program the PT should assess that the student has adequate complex knowledge. The PT should use present situations to the student that required the student to apply his/her complex knowledge.

Assignment for Lesson 27

1. Lesson Plan on spins
2. Lesson Plan on Weight & Balance and the Effects of Loading
3. Lesson Plan on Determining Performance and Limitations

Notes to the Instructor:

The PT should be incorporating effective aeronautical decision-making training in each presentation. During the assessment of the student's complex knowledge, did the PT use the opportunity to practice problem-solving skills (practice critical thinking skills) and challenge the student to consider additional options including less obvious options?

Practice Instruction – Lesson 27  
Learn to Conduct a Ground Training Lesson – Mission  
GND Lesson 27 (Approximate lesson time 1.5 hours)

Scenario:

You are a CFI instructing with a private pilot two lesson away from solo.

Lesson Objective:

During this flight lesson, the PT will learn to conduct a ground training lesson by presenting lesson plans on spins, weight and balance, and determining performance and limitations to his/her instructor. In addition, the student will be able to identify common student errors and suggest effective corrective action.

Pre Briefing:

The PT will lead all briefings.

Completion Standards:

This lesson is complete when the PT demonstrates that he/she can adhere to a preplanned lesson plan and effectively communicate this less to his/her instructor.

Desire Outcome Grade Sheet:

Lesson 27 Desired Outcome Grade Sheet			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Demonstration of SRM	Effectively managed all resources available related to the ground lesson	Manage/Decide							
	Discussed and demonstrated the proper use of automation management in all phases of ground	Manage/Decide							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Manage/Decide							
	Discussed and demonstrated proper task management throughout the flight lesson	Manage/Decide							
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Manage/Decide							
	Discussed and demonstrated the avoidance of controlled flight into terrain	Manage/Decide							
	Effectively managed the flight as an PT	Manage/Decide							
Review	Lesson plan on spins	Practice							
	Presentation on spins	Practice							
	Lesson plan on weight and balance, and effects of loading	Practice							
	Presentation on weight and balance, and effects of loading	Practice							
	Lesson plan on determining performance and limitations	Practice							
	Presentation on determining performance and limitations	Practice							
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Manage/Decide							
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Manage/Decide							
	Discussed and is able to explain assessing the risk of a student and flight lesson	Manage/Decide							

	Discussed and is able to explain factors that affect decision making	Manage/ Decide								
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Manage/ Decide								

Debriefing:

The PT should lead the debriefing and engage the simulated student in meaningful discussions about the items listed on the desired outcomes grading sheet.

Assignment for Lesson 28

Review as required.

Notes to the Instructor:

At the completion of the lesson, the instructor will critique the student's presentation and make suggestions for improvement.

The review should cover any area that the PT or the instructor previously covered in this strand that needs additional work including topics that were not presented well and topics that were incomplete or contained misstatements. Otherwise, the PT may be asked to present a topic that was done very well to more closely examine the things the PT does well and why the instructor thinks they were done well (why it worked).

Analyze the Performance – Lesson 28  
Practice Flight – Mission  
FLT Lesson 28 (Approximate lesson time 1.0 hours)

AIRPLANE – DAUL

Scenario:

You are a CFI instructing with a student pilot working on a Private Pilot Certificate who is doing the last review prior to taking his Private practical flight test.

Lesson Objective:

During the lesson, the PT will learn to effectively teach spins. The PT will be able to identify common student errors and suggest corrective action.

Pre Briefing:

All briefings will be lead by the PT.

Completion Standards:

At the completion of this flight lesson, the PT will demonstrate the proper instructional procedures for conducting a flight lesson on spins. In addition, the maneuver will be demonstrated in accordance with the current appropriate FAA PTS. The explanation will include the identification of common student errors and the proper corrective action. The PT will also demonstrate the ability to safely manage the flight lesson through an acceptable use of aeronautical decision making, risk management, and single pilot resource management.

Desire Outcome Grade Sheet:

Lesson 28 <b>Desired Outcome Grade Sheet</b>			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Demonstration of SRM	Preflight discussion	Perform							
	Effectively managed all resources available related to the flight lesson	Manage/Decide							
	Discussed and demonstrated the proper use of automation management in all phases of flight	Manage/Decide							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Manage/Decide							
	Discussed and demonstrated proper task management throughout the flight lesson	Manage/Decide							
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Manage/Decide							
	Discussed and demonstrated the avoidance of controlled flight into terrain	Manage/Decide							
	Effectively managed the flight as an PT	Manage/Decide							
Review	Spin entries and recoveries								
	Power on, power off	Perform							
	Left and right entries	Perform							
	Incipient and fully developed – minimum of 2 turns	Perform							
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Manage/Decide							
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Manage/Decide							
	Discussed and is able to explain assessing the risk of a student and flight lesson	Manage/Decide							
	Discussed and is able to explain factors that affect decision making	Manage/Decide							
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Manage/Decide							

Debriefing:

The PT will conduct a simulated student LCG debriefing that will be followed by a LCG debriefing of the PT's performance. Use spin avoidance to discuss "what ifs" to enhance critical thinking skills.

#### Assignment for Lesson 29

1. Lesson Plan on Steep Turns
2. Lesson Plan on Chandelles
3. Lesson Plan on Lazy Eights
4. Lesson Plan on Steep Spirals
5. Lesson Plan on Short-field Takeoff and Maximum Performance Climb & Short Field Landings
6. Lesson Plan on Soft-field Takeoffs and Landings
7. Lesson Plan on Power-off 180° Accuracy Approach and Landings

#### Notes to the Instructor:

The PT should be incorporating effective aeronautical decision-making training in each presentation and simulated student debriefing.

Is the PT taking advantage of the opportunities normally occurring during the pre-, in-flight, and post-flight to practice critical thinking skills? Are all of the judgment training steps being consistently used?



Practice Instruction – Lesson 29  
Learn to Conduct a Ground Training Lesson – Mission  
GND Lesson 29 (Approximate lesson time 2.0 hours)

Scenario:

You are a CFI instructing with a private pilot working on a commercial certificate. This is the student's first commercial maneuvers lesson. The student is an average student that is making steady progress.

Lesson Objective:

During this flight lesson, the PT will learn to conduct a preflight briefing for a maneuver to be performed in flight and a ground training lesson by presenting lesson plans on Steep Turns, Chandelles, Lazy Eights, Steep Spiral, short and soft-field takeoffs and landings, and power-off 180° accuracy approach and landing to his/her instructor. In addition, the PT will be able to identify the common student errors and suggest effective corrective action.

Pre Briefing:

The PT will lead all briefings.

Completion Standards:

This lesson is complete when the PT demonstrates that he/she can adhere to a preplanned lesson plan and effectively communicate this lesson to his/her instructor.

Desire Outcome Grade Sheet:

Lesson 29 <b>Desired Outcome Grade Sheet</b>			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Demonstration of SRM	Effectively managed all resources available related to the ground lesson	Manage/Decide							
	Discussed and demonstrated the proper use of automation management in all phases of ground	Manage/Decide							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Manage/Decide							
	Discussed and demonstrated proper task management throughout the ground lesson	Manage/Decide							

	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Manage/ Decide																	
	Discussed and demonstrated the avoidance of controlled flight into terrain	Manage/ Decide																	
	Effectively managed the flight as an PT	Manage/ Decide																	
Review	Lesson plan on steep turns	Perform																	
	Presentation on steep turns	Perform																	
	Lesson plan on chandelles	Perform																	
	Presentation on chandelles	Perform																	
	Lesson plan on lazy eights	Perform																	
	Presentation on lazy eights	Perform																	
	Lesson plan on steep spirals	Perform																	
	Presentation on steep spirals	Perform																	
	Lesson plan on short-field takeoff and maximum performance climb & short field landings with various flap settings	Perform																	
	Presentation on short-field takeoff and maximum performance climb & short field landings with various flap settings	Perform																	
	Lesson plan on soft-field takeoff and landing	Perform																	
	Presentation on soft-field takeoff and landing	Perform																	
	Lesson plan on power-off 180° accuracy approach and landing	Perform																	
	Presentation on power-off 180° accuracy approach and landing	Perform																	
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Manage/ Decide																	
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Manage/ Decide																	
	Discussed and is able to explain assessing the risk of a student and flight lesson	Manage/ Decide																	
	Discussed and is able to explain factors that affect decision making	Manage/ Decide																	
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Manage/ Decide																	

### Debriefing:

The PT should lead the debriefing and include judgment training.  
Assignment for Lesson 30

Review as required.

### Notes to the Instructor:

At the completion of the lesson, the instructor will critique the PT's presentation and make suggestions for improvement.

Note: the instructor shall select at least one lesson plan and presentation to be performed as a preflight briefing for a maneuver to be performed in flight. The other lesson plans will be presented as ground training lessons.

Judgment training includes a task or problem, solving the task or problem, reflecting on the problem-solving process, brainstorming additional alternatives, re-solving the problem, and then considering what is best. The PT should be following this process with his student during the presentations and debriefings as well as using the process to develop his/her own thinking skills. When the process has been practiced long enough that the steps can be done automatically (without having to think about them), the student and PT are ready to concentrate on thinking about better options and alternatives rather than on the process.

Analyze the Performance – Lesson 30  
 Practice Flight – Mission  
 FLT Lesson 30 (Approximate lesson time 1.3 hours)

AIRPLANE/COMPLEX – DUAL

Scenario:

You are a CFI instructing with a private pilot working on a Commercial Certificate. The student is having trouble with aircraft mastery and frequently deviates well beyond Commercial PTS.

Lesson Objective:

During the lesson, the PT will learn to effectively teach steep spirals, steep turns, chandelles, lazy eights, short and soft-field takeoffs and landings, power-off 180° accuracy approach and landing, and go-arounds in a complex airplane. The student will be able to identify common student errors and suggest effective corrective action.

Pre Briefing:

All briefings will be lead by the PT.

Completion Standards:

At the completion of this lesson, the PT will demonstrate the proper instructional procedures for conducting a flight lesson for the listed maneuvers. In addition, each maneuver will be demonstrated in accordance with the current appropriate FAA PTS. The PT will also demonstrate the ability to safely manage the flight lesson through an acceptable use of aeronautical decision making, risk management, and single pilot resource management.

Desire Outcome Grade Sheet:

Lesson 30 Desired Outcome Grade Sheet			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Demonstration of SRM	Effectively managed all resources available related to the flight lesson	Manage/Decide							
	Discussed and demonstrated the proper use of automation management in all phases of flight	Manage/Decide							

	Identified and discussed areas of risk and made proper decisions in managing those situation	Manage/Decide																	
	Discussed and demonstrated proper task management throughout the flight lesson	Manage/Decide																	
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Manage/Decide																	
	Discussed and demonstrated the avoidance of controlled flight into terrain	Manage/Decide																	
	Effectively managed the flight as an PT	Manage/Decide																	
Review	Checklist usage – flow patterns	Perform																	
	Steep spirals	Perform																	
	Steep turns	Perform																	
	Chandelles	Perform																	
	Lazy eights	Perform																	
	Short-field takeoffs and maximum performance climb	Perform																	
	Short-field approaches and landings – with and without obstacle	Perform																	
	Soft-field takeoffs and climbs	Perform																	
	Soft-field approaches and landings	Perform																	
	Full flap rejected landing (go-around)	Perform																	
	Power-off 180° accuracy approach and landing	Perform																	
	Complex airplane operations	Perform																	
	Complex airplane systems	Perform																	
	Retractable landing gear	Perform																	
Variable-pitch propellers	Perform																		
Turbo-changing	Perform																		
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Manage/Decide																	
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Manage/Decide																	
	Discussed and is able to explain assessing the risk of a student and flight lesson	Manage/Decide																	
	Discussed and is able to explain factors that affect decision making	Manage/Decide																	
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Manage/Decide																	
Postflight Discussion	Critique student performance, preview next lesson, and make study assignment	Perform																	

### Debriefing:

The PT will lead the debriefing engaging the simulated student and including judgment training.

### Assignment for Lesson 31

1. Aeromedical Factors
2. High Altitude Operations
3. Airworthiness Requirements
4. Advisory Circulars and Assorted Publications

### Notes to the Instructor:

The PT should be incorporating effective aeronautical decision-making training in each presentation.

The PT should be using guided discussions and authentic situations to present challenges to the simulated student. The PT should be presenting scenarios that are of interest to the student, things the student may actually be considering or dreaming to do as a pilot or do with his/her airplane.

Practice Instruction – Lesson 31  
Learn to Conduct a Ground Training Lesson – Mission  
GND Lesson 31 (Approximate lesson time 1.5 hours)

Scenario:

You are a CFI instructing with a private pilot getting ready of the commercial Practical Test.

Lesson Objective:

During this flight lesson, the student will review aeromedical factors, high altitude operations, and airworthiness requirements.

Pre Briefing:

The PT will lead all briefings.

Completion Standards:

The PT will have successfully completed the lesson when he/she displays thorough knowledge of the areas covered in this briefing.

Desire Outcome Grade Sheet:

Lesson 31 <b>Desired Outcome Grade Sheet</b>			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Demonstration of SRM	Effectively managed all resources available related to the ground lesson	Manage/Decide							
	Discussed and demonstrated the proper use of automation management in all phases of ground	Manage/Decide							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Manage/Decide							
	Discussed and demonstrated proper task management throughout the ground lesson	Manage/Decide							
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Manage/Decide							
	Discussed and demonstrated the avoidance of controlled flight into terrain	Manage/Decide							

	Effectively managed the flight as an PT	Manage/ Decide											
Introduction	Aeromedical Factors as outlined in Flight Instructor PTS	Perform											
	High Altitude Operations as outlined in Flight Instructor PTS	Perform											
	Airworthiness requirements as outlined in Flight Instructor PTS	Perform											
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Manage/ Decide											
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Manage/ Decide											
	Discussed and is able to explain assessing the risk of a student and flight lesson	Manage/ Decide											
	Discussed and is able to explain factors that affect decision making	Manage/ Decide											
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Manage/ Decide											

Debriefing:

The PT leads the debriefing. Engage the student with scenarios that the student might enjoy or be planning to do with his/her airplane.

Assignment for Lesson 32

Review as required.

Notes to the Instructor:

Make assignment as necessary. Can the PT identify the topics or skills he/she has weaknesses in? Are there any aeronautical knowledge topics the PT needs to review or practice doing again?

The PT should be well aware of his/her weaknesses. If not, then self-awareness should be a topic to be discussed. The PT and instructor may review the desired outcomes grade sheet of topics to consider.



Analyze the Performance – Lesson 32  
Practice Flight – Mission  
FLT Lesson 32 (Approximate lesson time 1.3 hours)

AIRPLANE/COMPLEX – DUAL

Scenario:

You are a CFI instructing with a private pilot working on a Commercial Pilot Certificate. This is the student’s initial complex flight. The student has previously received good ground instructions on complex airplanes and complex operations.

Lesson Objective:

During the lesson, the PT will learn to effectively teach Ground Reference Maneuvers in a complex airplane. The PT will demonstrate proficiency in the practice instruction of the maneuvers listed for review. In addition, the PT will demonstrate proficiency in the practice instruction of the maneuvers the instructor feels necessary to review. The PT will be able to identify common student errors and suggest effective corrective action.

Pre Briefing:

All briefings will be lead by the PT. The instructor should also cover others area he/she feels are appropriate from earlier lessons.

Completion Standards:

At the completion of this lesson, the PT will demonstrate the proper instructional procedures for conducting a flight lesson for the listed maneuvers in a complex airplane. In addition, each maneuver will be demonstrated in accordance with the current appropriate FAA PTS. The explanation will include the identification of common student errors and the proper corrective action. The PT will also demonstrate the ability to safely manage the flight lesson through an acceptable use of aeronautical decision making, risk management, and single pilot resource management.

Desire Outcome Grade Sheet:

Lesson 32 Desired Outcome Grade Sheet			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Demonstration of SRM	Preflight Discussion	Perform							
	Effectively managed all resources available related to the flight lesson	Manage/Decide							

	Discussed and demonstrated the proper use of automation management in all phases of flight	Manage/Decide																	
	Identified and discussed areas of risk and made proper decisions in managing those situation	Manage/Decide																	
	Discussed and demonstrated proper task management throughout the flight lesson	Manage/Decide																	
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Manage/Decide																	
	Discussed and demonstrated the avoidance of controlled flight into terrain	Manage/Decide																	
	Effectively managed the flight as an PT	Manage/Decide																	
Review	Checklist usage – flow patterns	Perform																	
	Steep turns	Perform																	
	Chandelles	Perform																	
	Lazy eights	Perform																	
	Steep spirals	Perform																	
	Normal and crosswind takeoffs	Perform																	
	Normal and crosswind landings with various flap settings	Perform																	
	Ground reference maneuvers	Perform																	
	Complex airplane operations	Perform																	
	Complex airplane systems	Perform																	
	Retractable landing gear	Perform																	
	Variable-pitch propellers	Perform																	
Turbo-changing	Perform																		
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Manage/Decide																	
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Manage/Decide																	
	Discussed and is able to explain assessing the risk of a student and flight lesson	Manage/Decide																	
	Discussed and is able to explain factors that affect decision making	Manage/Decide																	
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Manage/Decide																	
Postflight Discussion	Critique student performance, preview next lesson, and make study assignment	Perform																	

Debriefing:

The PT will conduct the debriefing using LCG techniques and incorporating critical thinking practice.

Assignment for Lesson 33

Lesson plans and review of areas outlined in the CFI-PTS that the instructor feels are necessary to prepare the PT for the progress check and FAA Practical Test.

Notes to the Instructor:

The PT should be incorporating effective aeronautical decision-making training in each presentation.

Review the PTS tasks and discuss each task to assess the PT's knowledge of the topic.

Practice Instruction – Lesson 33  
Learn to Conduct a Ground Training Lesson – Mission  
GND Lesson 33 (Approximate lesson time 1.5 hours)

Scenario:

You are a CFI instructing with a student pilot getting ready of the Private Pilot Certificate. The student has only completed two lessons in the private pilot course you are following.

Lesson Objective:

During this flight lesson, the student will review National Airspace System, logbook entries and certificate endorsements, and areas outlined in the CFI-PTS and lesson plans that the instructor feels necessary in preparation for the progress check.

Pre Briefing:

The PT will lead all briefings.

Completion Standards:

The PT will demonstrate a knowledge and skill level that meets or exceeds the criteria for the Flight Instructor Single-engine rating or as set forth in the current Private and Commercial Practical Test Standards. The PT will also demonstrate the ability to safely manage the flight lesson through an acceptable use of aeronautical decision making, risk management, and single pilot resource management.

Desire Outcome Grade Sheet:

Lesson 33 Desired Outcome Grade Sheet			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Demonstration of SRM	Effectively managed all resources available related to the ground lesson	Manage/Decide							
	Discussed and demonstrated the proper use of automation management in all phases of ground	Manage/Decide							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Manage/Decide							
	Discussed and demonstrated proper task management throughout the ground lesson	Manage/Decide							

	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Manage/Decide												
	Discussed and demonstrated the avoidance of controlled flight into terrain	Manage/Decide												
	Effectively managed the flight as an PT	Manage/Decide												
Introduction	National Airspace System as outlined in Flight Instructor PTS	Practice												
	Logbook entries and certificate endorsements as outlined in Flight Instructor PTS	Practice												
Review	Lesson plans and Areas of Operation outlined in the CFI-PTS that the instructor feels are necessary to prepare the PT for the progress check and FAA Practical Test	Practice												
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Manage/Decide												
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Manage/Decide												
	Discussed and is able to explain assessing the risk of a student and flight lesson	Manage/Decide												
	Discussed and is able to explain factors that affect decision making	Manage/Decide												
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Manage/Decide												

Debriefing:

The PT will lead the debriefing.

Assignment for Lesson 34

Review as required.

Notes to the Instructor:

Make assignment as necessary. This will be accomplished as a corporate effort between the PT and instructor. Use the Private Pilot PTS as a guide.

Analyze the Performance – Lesson 34  
Practice Flight – Mission  
FLT Lesson 34 (Approximate lesson time 1.3 hours)

Scenario:

You are a CFI instructing with a private pilot working on a Commercial Certificate. The student is preparing for his Commercial Practical Test.

Lesson Objective:

During the lesson, the PT will effectively teach and demonstrate the previously learned maneuvers and procedures and will be able to identify common student errors and suggest effective corrective action. The PT should be ready to demonstrate and teach all maneuvers listed in the Private, commercial and CFI PTS.

Pre Briefing:

All briefings will be lead by the PT. The instructor should also cover others area he/she feels are appropriate from earlier lessons.

Completion Standards:

At the completion of this lesson, the PT will demonstrate that he/she is a competent flight instructor. He/she will possess the knowledge and skills required to satisfactorily complete the progress check. The performance level must meet or exceed the appropriate PTS as outlined by the FAA.

Desire Outcome Grade Sheet:

Lesson 34 <b>Desired Outcome Grade Sheet</b>			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Demonstration of SRM	Preflight Discussion	Perform							
	Effectively managed all resources available related to the flight lesson	Manage/Decide							
	Discussed and demonstrated the proper use of automation management in all phases of flight	Manage/Decide							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Manage/Decide							
	Discussed and demonstrated proper task management throughout the flight lesson	Manage/Decide							

	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Manage/ Decide																		
	Discussed and demonstrated the avoidance of controlled flight into terrain	Manage/ Decide																		
	Effectively managed the flight as an PT	Manage/ Decide																		
Review	Checklist usage – flow patterns	Perform																		
	Short-field takeoffs and maximum performance climb	Perform																		
	Short-field approaches and landings	Perform																		
	Soft-field takeoffs and climbs	Perform																		
	Soft-field approaches and landings	Perform																		
	Power-off 180° accuracy approach and landing	Perform																		
	Review of Areas of Operation outlined in the CFI-PTS that the instructor feels are necessary to prepare the PT for the progress check	Perform																		
	Complex airplane operations	Perform																		
	Complex airplane systems	Perform																		
	Retractable landing gear	Perform																		
	Variable-pitch propellers	Perform																		
Turbo-changing	Perform																			
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Manage/ Decide																		
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Manage/ Decide																		
	Discussed and is able to explain assessing the risk of a student and flight lesson	Manage/ Decide																		
	Discussed and is able to explain factors that affect decision making	Manage/ Decide																		
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Manage/ Decide																		
Postflight Discussion	Critique student performance, preview next lesson, and make study assignment	Perform																		

### Debriefing:

The PT should lead the debriefing. The PT should be able to demonstrate effective techniques in engaging the simulated pilot into meaningful discussions and be able to offer good options for possible solutions to problems.

### Assignment for Lesson 35

1. As necessary to prepare for the Progress Check

### Notes to the Instructor:

The PT should be incorporating effective aeronautical decision-making training in each presentation.

The PT should be able to create effective scenarios to address most Private and Commercial tasks. Within these scenarios, the PT should be able to provide effective instruction and incorporate critical thinking skills training.



Practice Practical Test – Lesson 35  
Local Evaluation Flight – Mission  
FLT Lesson 35 (Approximate lesson time - Oral 2.0 hours – Flight 1.3 hours)

PROGRESS CHECK – AIRPLANE/COMPLEX

Scenario:

The scenario will be assigned by the check pilot.

Lesson Objective:

The Chief Flight Instructor or designee shall evaluate that the student has the ability to perform the tasks in the Flight Instructor Single-engine Airplane Practical Test Standards. The PT will perform as the instructor and the stage check pilot will serve as the student in training.

The PT is responsible for creating the flight portion scenario and plan of action. This scenario and plan of action should be reviewed and discussed prior to the flight. The check pilot has final authority as to the actual scenario and plan of action that will be used.

The PT will manage all phases of the flight lesson. During the flight portion, the stage check pilot may deviate from the original scenario for the PT to teach, manage, and perform. The PT will make proper decisions in managing the flight and safety of flight.

Pre Briefing:

The PT will lead all briefings for this lesson.

Completion Standards:

The PT will demonstrate an instructional knowledge and skill level that meets or exceeds the criteria for the flight instructor airplane single-engine rating, as set forth in the current Private, Commercial, and Flight Instructor Practical Test Standards. The PT will also demonstrate the ability to safely manage the flight lesson through an acceptable use of aeronautical decision making, risk management, and single pilot resource management.

Evaluation – Oral Portion

The student must be able to manage, teach, and perform the tasks required by the Flight Instructor Practical Test Standards. See a current version of the Flight Instructor Practical Test Standards for specific oral tasks that must be covered on a practical test.

Desire Outcome Grade Sheet:

Lesson 35 <b>Desired Outcome Grade Sheet</b>			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Oral Examination	Discuss Areas of Operation outlined in the Instructor PTS	Perform							
Demonstration of SRM	Effectively managed all resources available related to the ground lesson	Manage/Decide							
	Discussed and demonstrated the proper use of automation management in all phases of ground	Manage/Decide							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Manage/Decide							
	Discussed and demonstrated proper task management throughout the ground lesson	Manage/Decide							
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Manage/Decide							
	Discussed and demonstrated the avoidance of controlled flight into terrain	Manage/Decide							
	Effectively managed the flight as an PT	Manage/Decide							
Review	Maneuvers and procedures listed in the pilot operations of the Private, Commercial, and Flight Instructor Practical Test Standards. The PT will show competence in describing, recognizing, analyzing and correcting common errors simulated by the Check Pilot	Perform							
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Manage/Decide							
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Manage/Decide							
	Discussed and is able to explain assessing the risk of a student and flight lesson	Manage/Decide							

	Discussed and is able to explain factors that affect decision making	Manage/Decide								
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Manage/Decide								

### Evaluation – Flight Portion

The student must be able to explain, manage, teach, and perform the tasks required by the Private Pilot, Commercial, and Flight Instructor Practical Test Standards. See a current version of the Private Pilot, Commercial, and Flight Instructor Practical Test Standards for specific flight tasks that must be covered on a practical test.

It is not intended that the student be tested on every procedure or maneuver within each pilot operation, but only those considered necessary by the Chief Instructor or their designee to determine competency in each pilot operation.

#### Desire Outcome Grade Sheet:

			Task Grades					SRM Grades		
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice	Manage/Decide
<b>Lesson 35</b>										
<b>Desired Outcome Grade Sheet</b>										
Scenario Activities	Task	Desired Performance								
Demonstration of SRM	Preflight discussion	Perform								
	Effectively managed all resources available related to the flight lesson	Manage/Decide								
	Discussed and demonstrated the proper use of automation management in all phases of flight	Manage/Decide								
	Identified and discussed areas of risk and made proper decisions in managing those situation	Manage/Decide								
	Discussed and demonstrated proper task management throughout the flight lesson	Manage/Decide								
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Manage/Decide								
	Discussed and demonstrated the avoidance of controlled flight into terrain	Manage/Decide								
	Effectively managed the flight as an PT	Manage/Decide								
Evaluation flight	Perform Areas of Operations listed in the Flight Instructor single-engine PTS	Perform								

	The PT explanation during the demonstrations must be clear, concise, technically accurate, and complete	Perform											
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Manage/Decide											
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Manage/Decide											
	Discussed and is able to explain assessing the risk of a student and flight lesson	Manage/Decide											
	Discussed and is able to explain factors that affect decision making	Manage/Decide											
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Manage/Decide											
Postflight Discussion	Critique student performance, preview next lesson, and make study assignment	Perform											

Debriefing:

Discuss and correct any areas of weakness and direct specific areas of review as required.

Notes to the Instructor:

Review the Applicant's Practical Test Checklist outlined in the Flight Instructor Practical Test Standards and review all paperwork for the FAA Practical Test.

Analyze the Performance – Lesson 36  
Practice Flight – Mission  
FLT Lesson 36 (Approximate lesson time 1.5 hours)

Scenario:

You are a CFI instructing with a private pilot working on a Commercial Certificate. The student is preparing for the Practical Test.

Lesson Objective:

During the lesson the PT will effectively teach and demonstrate the previously learned maneuvers and procedures, and will be able to identify common student errors and suggest effective corrective actions.

Pre Briefing:

All briefings will be lead by the PT. The instructor should also cover others area he/she feels are appropriate from earlier lessons.

Completion Standards:

At the completion of this lesson, the PT will demonstrate that he/she is a competent flight instructor. He/she will possess the knowledge and skills required to satisfactorily complete the FAA practical test. The performance level must meet or exceed the appropriate PTS as outlined by the FAA. The PT will also demonstrate the ability to safely manage the flight lesson through an acceptable use of aeronautical decision making, risk management, and single pilot resource management.

Desire Outcome Grade Sheet:

Lesson 36 <b>Desired Outcome Grade Sheet</b>			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Demonstration of SRM	Preflight Discussion	Perform							
	Effectively managed all resources available related to the flight lesson	Manage/Decide							
	Discussed and demonstrated the proper use of automation management in all phases of flight	Manage/Decide							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Manage/Decide							
	Discussed and demonstrated proper task management throughout the flight lesson	Manage/Decide							
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Manage/Decide							
	Discussed and demonstrated the avoidance of controlled flight into terrain	Manage/Decide							
	Effectively managed the flight as an PT	Manage/Decide							
Review	Review Areas of Operations outlined in the CFI-PTS that the instructor feels are necessary to prepare the PT for the FAA Practical Test	Perform							
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Manage/Decide							
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Manage/Decide							
	Discussed and is able to explain assessing the risk of a student and flight lesson	Manage/Decide							
	Discussed and is able to explain factors that affect decision making	Manage/Decide							
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Manage/Decide							
Postflight Discussion	Critique student performance, preview next lesson, and make study assignment	Perform							

Debriefing:

Assignment for Lesson 37

1. As necessary to prepare for the FAA Practical Test

Notes to the Instructor:

The PT should be incorporating effective aeronautical decision-making training in each presentation.

This lesson is a polish up flight. The instructor should work with the PT to determine what Private, Commercial, and CFI practical test tasks should be reviewed or practices. The instructor should consider including a task or two that the PT does well as a confidence builder. Additionally, the instructor may want to include one demonstration and teaching assignment that is a surprise to the PT so see how the PT will handle a situation that he or she is not fully prepared to present. Use the surprise as a learning experience and re-enforce the idea that the PT must adequately prepare for each teaching encounter. It is recommended that the surprise tasking be given before the confidence maneuver to leave the PT with a positive attitude.

Practical Test Flight – Lesson 37  
Flight Instructor Practical Test – Mission  
FLT Lesson 37 (Approximate lesson time - Oral 2.0 hours – Flight 1.3 hours)

INSTRUCTOR PRACTICAL TEST – AIRPLANE/COMPLEX

Scenario:

Scenario assigned by check pilot.

Lesson Objective:

The PT will manage all phases of the flight lesson. During the flight portion, Designated Pilot Examiner or FAA Inspector may deviate from the original scenario during the flight portion for the PT to teach, manage, and perform. The PT will make proper decisions in managing the flight and safety of flight.

Pre Briefing:

Note: this is a guide to help prepare the applicant with the proper paperwork and necessary items for the FAA practical test: however, the applicant should always consult current PTS and Advisory Circulars when preparing for the practical test.

1. Personal records
  - a. Pilot Certificate
  - b. Medical Certificate
  - c. Picture ID
  - d. Completed 8710 Form
  - e. Log book showing appropriate flight training and a minimum pilot in command time.
  - f. Appropriate log book endorsement for the addition of an additional rating to a certificate.
  - g. If applicable
    - i. A letter of discontinuance
    - ii. A notice of disapproval
    - iii. Approved school graduation certificate
    - iv. Examiners fee



## 2. Equipment

- a. Current Private and Commercial PTS
  - b. Current Instrument PTS
  - c. Current Flight Instructor PTS
  - d. Current FAR/AIM
  - e. Current Checklist
  - f. Advisor Circular 61-65
  - g. Other reference materials such as
    - i. Airplane Flying Handbook
  - h. Current Aeronautical Charts
  - i. Flight Computer and Plotter
  - j. Flight Plan Form and Flight Log
  - k. Current Airport Facility Directory
  - l. View Limiting Device
3. Review the Applicant's Practical Test Checklist in the Flight Instructor PTS

### Completion Standards:

This Practical Test is complete when the PT is able to complete the tasks required in the Flight Instructor single-engine Practical Test Standards. The PT will demonstrate the ability to safely manage the flight lesson through an acceptable use of aeronautical decision making, risk management, and single pilot resource management.

### Evaluation – Oral Portion

The student must be able to manage, teach, and perform the tasks required by the Flight Instructor Practical Test Standards. See a current version of the Flight Instructor Practical Test Standards for specific oral tasks that must be covered on a practical test.

Desire Outcome Grade Sheet:

Lesson 37 <b>Desired Outcome Grade Sheet</b>			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Demonstration of SRM	Effectively managed all resources available related to the ground lesson	Manage/Decide							
	Discussed and demonstrated the proper use of automation management in all phases of ground	Manage/Decide							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Manage/Decide							
	Discussed and demonstrated proper task management throughout the ground lesson	Manage/Decide							
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Manage/Decide							
	Discussed and demonstrated the avoidance of controlled flight into terrain	Manage/Decide							
	Effectively managed the flight as an PT	Manage/Decide							
Review	Maneuvers and procedures listed in the pilot operations of the Private, Commercial, and Flight Instructor Practical Test Standards. The PT will show competence in describing, recognizing, analyzing and correcting common errors simulated by the Check Pilot	Perform							
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Manage/Decide							
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Manage/Decide							
	Discussed and is able to explain assessing the risk of a student and flight lesson	Manage/Decide							
	Discussed and is able to explain factors that affect decision making	Manage/Decide							
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Manage/Decide							

## Evaluation – Flight Portion

The student must be able to explain, manage, teach, and perform the tasks required by the Flight Instructor single-engine Practical Test Standards. See a current version of the Flight Instructor Practical Test Standards for specific flight tasks that must be covered on a practical test.

### Desire Outcome Grade Sheet:

Lesson 37 <b>Desired Outcome Grade Sheet</b>			Task Grades					SRM Grades	
			Not Observed	Describe	Explain	Practice	Perform	Explain	Practice
Scenario Activities	Task	Desired Performance							
Preflight briefing	Preflight briefing will be performed by the PT	Perform							
Demonstration of SRM	Effectively managed all resources available related to the flight	Manage/Decide							
	Discussed and demonstrated the proper use of automation management in all phases of flight	Manage/Decide							
	Identified and discussed areas of risk and made proper decisions in managing those situation	Manage/Decide							
	Discussed and demonstrated proper task management throughout the flight	Manage/Decide							
	Exercised proper aeronautical decision making and risk management while maintaining positional and situational awareness	Manage/Decide							
	Discussed and demonstrated the avoidance of controlled flight into terrain	Manage/Decide							
	Effectively managed the flight as an PT	Manage/Decide							
Evaluation flight	Perform the Areas of Operation outlined in the Instructor PTS	Perform							
	The PT's explanation during the demonstrations must be clear, concise, technically accurate, and complete	Perform							
Aeronautical Decision Making	Discussed and is able to explain aeronautical decision making at an instructor level as outlined in the Aviation Instructor's Handbook	Manage/Decide							
	Discussed and is able to explain the use of the PAVE and DECIDE model into flight training	Manage/Decide							
	Discussed and is able to explain assessing the risk of a student and flight lesson	Manage/Decide							

	Discussed and is able to explain factors that affect decision making	Manage/Decide								
	Discussed and is able to explain incorporating aeronautical decision making scenarios into each lesson to emphasize risk management and single pilot resource management	Manage/Decide								
Postflight Discussion	Critique student performance, preview next lesson, and make study assignment	Perform								

Debriefing:

Check pilot should debrief the PT as required.