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Flight Operations Manual

Procedures in this publication are derived from procedures in the Federal Aviation Administration (FAA) Approved Airplane Flight Manual (AFM) Revision A7. Cirrus Design and Scanlon Aviation have attempted to ensure that the data contained agrees with the data in the AFM. If there is any disagreement,
the Airplane Flight Manual is the final authority.

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Introduction

General

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Single Pilot Resource Management

Single Pilot Resource Management (SRM) is the art and science of managing all the resources available to a single-pilot to ensure that the successful outcome of the flight is never in doubt. The majority of Cirrus aircraft operations are conducted single-pilot. The workload associated with flying the aircraft, configuring and monitoring avionics, communicating with air traffic control (ATC), and decision making can be overwhelming at times. The following SRM procedures have been adapted from cockpit procedures common to dual pilot transport category aircraft. General aviation pilots have a great deal of latitude on how to manage and operate aircraft. To ensure the highest levels of safety it is strongly recommended that these single pilot operating procedures be incorporated into the operation of the aircraft.

Priority of Tasks

The following is a list of priorities that apply to any situation encountered in flight. Pilots must adhere to these priorities during every flight.

1. Maintain Aircraft Control

The number one priority of the pilot is to maintain aircraft control. Pilots should maintain a high level of vigilance during periods of high and low workload to ensure aircraft control is always maintained.

2. Navigation

Once aircraft control is assured, pilots should set and verify the avionics are correctly configured for navigation. This task includes programming Global Positioning System (GPS) units and the Primary Flight Display (PFD). Use of the autopilot may assist the pilot with accomplishing these tasks. Pilots should closely monitor flight parameters while programming various avionics equipment.

3. Communication

Communication is an important task in the aircraft but follows aircraft control and navigation as a priority. Communicate intentions and relay instructions clearly to ATC and the Common Traffic Advisory Frequency (CTAF) while maintaining aircraft control.

• Note •

Using Standard Operating Procedures will aid the pilot in timely completion of required tasks and allow the pilot to maintain high levels of situational awareness.

Checklist Philosophy

When used properly, checklists enhance safety of flight by confirming the aircraft is appropriately configured for the flight condition. At the same time, checklists expedite the completion of procedures that are necessary to transition to subsequent phases of flight. The electronic checklist in the Multi Function Display (MFD) should be used anytime the MFD is running. Use of electronic checklists will help keep the cockpit organized and functional. Use a paper checklist whenever the MFD electronic checklists are not available.

Reference Materials

The following references supplement the content of this publication:

• Federal Aviation Regulations (FARs) or governing regulations, as applicable,
• Aeronautical Information Manual (AIM),
• FAA Approved Airplane Flight Manual and Pilot Operating Handbook (POH),
• Advisory Circulars,
• Cirrus Design Training Guide,
• Cirrus Design Envelope of Safety,
• Avionics Pilot Guides and Manuals.

Normal: Procedures used during normal flight operations. Normal checklists can be found in the Normal Procedures section of the POH.

Abnormal: Procedures used in response to system failures and malfunctions that, while not immediately threatening, may affect safety of flight if not addressed. Abnormal checklists can be found in the Abnormal Procedures section in the POH.

Emergency: Procedures used in response to system failures and malfunctions that are an immediate threat to the safety of flight. Emergencies require immediate action by the flight crew to ensure a safe outcome. Emergency checklists can be found in the Emergency Procedures section of the POH.

Terms and Abbreviations

The following terms and abbreviations will be referenced in this manual.

AFM Airplane Flight Manual
AGL Above Ground Level
AIM Aeronautical Information Manual
AOE Airport of Entry
ATC Air Traffic Control
CAPS Cirrus Airframe Parachute System
CDM Critical Decision Making
COPA Cirrus Owners and Pilots Association
CPPP Cirrus Pilot Proficiency Program
CSTC Cirrus Standardized Training Center
CSI Cirrus Standardized Instructor (at CSTC)
CSIP Cirrus Standardized Instructor Program
CTAF Common Traffic Advisory Frequency
DUATS Direct User Access Terminal Service
ETA Estimated Time of Arrival
FAA Federal Aviation Administration
FAF Final Approach Fix
FAR Federal Aviation Regulation
FSS Flight Service Station
GPS Global Positioning System
IFR Instrument Flight Rules
ILS Instrument Landing System
IMC Instrument Meteorological Conditions
IPC Instrument Proficiency Check
MEA Minimum Enroute Altitude
MFD Multi Function Display
MSL Mean Sea Level
NOTAM Notice to Airmen
NTSB National Transportation Safety Board
PFD Primary Flight Display
PIC Partner-in-Command
PIC Pilot-in-Command
POH Pilot Operating Handbook
SRM Single Pilot Resource Management
STC Supplemental Type Certificate
TFR Temporary Flight Restriction

VFR Visual Flight Rules

Contact Information

Scanlon Aviation …….. 415-717-1189
Air Safety Hotline.....218-788-3400
CIRRUS Standardized Instructor Program.....218-788-3845
csip@cirrusdesign.com
Flight Standards and Operations.....866-733-6273
pilotsworld@cirrusdesign.com
Maintenance Hotline.....800-279-4322
fieldservice@cirrusdesign.com
Sales Department 888-750-9927
info@cirrusdesign.com
Factory Transition Training/Cirrus Concierge.....218-788-3352
concierge@cirrusdesign.com

Limitations

General

The Limitations Section of the Pilot Operating Handbook (POH) is the official document approved by the Federal Aviation Administration. It provides operating limitations, instrument markings, basic placards required by regulation, and standard systems and equipment required for safe operation. For amended operating limitations for airplanes equipped with optional equipment, refer to Section 9 - Supplements of the Pilot Operating Handbook. Compliance with the operating limitations in Pilot Operating Handbook is required by Federal Aviation Regulations.

Standard Operating Procedures

General

The Standard Operating Procedures section describes the recommended procedures when operating a Cirrus aircraft during visual and instrument conditions. This information should serve as a framework for aircraft and avionics management. These standard operating procedures were developed and are used by pilots at Cirrus Design. The procedures outlined are considered the best operating practices while flying Cirrus aircraft; however, these procedures may not be inclusive to all variables encountered in the national airspace system. Cirrus pilots are encouraged to follow the procedures outlined in this manual and use their best judgment when handling non standard situations.
Utilizing these standard operating procedures will enhance the situational awareness of the pilot in both single pilot and crew situations and allow for timely completion of tasks in the aircraft. Adhering to these procedures will help the pilot take full advantage of the aircraft's capabilities while maintaining a high level of safety.

• Note •

Procedures in this publication are derived from procedures in the FAA Approved Airplane Flight Manual (AFM). Cirrus Design has attempted to ensure that the data contained agrees with the data in the AFM. If there is any disagreement, ***the Airplane Flight Manual is the final authority***.

Checklist Completion for Normal Procedures

Normal procedure checklists can be completed as a flow pattern or a do-list. The appropriate method for checklist completion for each normal procedure is indicated in the procedures section for each phase of flight.
Do-List: A do-list checklist is executed by reading the checklist item and selecting the appropriate condition of the item. Do-lists are used when procedure sequence and/or item condition is critical to completion of the procedure and when ample time exists for completion of the checklist.
Flow Pattern: The term “flow pattern” refers to a logical path through the cockpit that the pilot will move along during the execution of the checklist. Flow patterns use a “do and verify” approach to checklist completion. The items and their conditions are memorized and executed without immediate reference to the written checklist. Following completion of the flow pattern, the checklist is referenced as soon as time and workload permit to ensure procedure completion.
When used properly, flow patterns allow timely configuration of the aircraft for the appropriate flight condition. Flow patterns are used when procedure sequence and aircraft condition is not critical and there is an operational advantage to executing the checklist items in a timely manner.

Preflight

The preflight inspection should be completed as a flow pattern when the pilot is familiar with the aircraft preflight inspection checklist. Always refer to the aircraft checklist after the flow to verify all items have been completed.

Documentation

The following documents must be in the aircraft for the flight:
- Certificate of Airworthiness,
- Registration,
- FAA Approved Airplane Flight Manual and Pilot Operating Handbook, including weight and balance,
- Appropriate avionics publications.

Equipment

The following equipment should be carried in the aircraft when appropriate:
- Survival kit (appropriate to the climate and conditions),
- Approved flotation devices for flights outside glide distance to land,
- Supplemental oxygen system for high altitude operations,
- Chocks, tie downs, extra oil, tow bar, engine and airplane covers.

Before Engine Start

Complete the Before Starting Engine checklist as a Do-List to start the aircraft engine. Before starting the engine verify all preflight items are complete and all emergency equipment is on board and stored in the proper location. Remove the Cirrus Airframe Parachute System (CAPS) pin after all occupants have boarded the aircraft and are seated with seat belts fastened. Ensure seats are locked into position by verifying the control handle is in the full down position.

During engine start the aircraft should be positioned so that the propeller blast is not directed toward any aircraft, hangar, property or person.

Passenger Flight Briefing

The pilot should provide a safety briefing, referencing the Passenger Briefing Card, to all passengers prior to each flight. The briefing shall provide instructions in the event of a pilot incapacitation including the use of the CAPS, seat belts, exits, and any other safety equipment on the aircraft. The pilot should also discuss sterile cabin procedures and other information as necessary.

At a minimum, passengers should be briefed on the following items;

- CAPS,
- Smoking,
- Seatbelts,
- Doors,
- Emergency Exits/Egress Hammer,
- Use of Oxygen.

Local Ramp Procedures

The aircraft shall be operated in compliance with FAA regulations and local airport rules at all times. If aircraft is moved manually the factory supplied or Scanlon Aviation tow bar must be used. When at an airport other than Gnoss field, the pilot-in-command must insure any person repositioning the aircraft is familiar with the Cirrus towing requirements and that no damage occurs to the nose faring or wheel pant.

Engine Start

The Engine Start checklist should be accomplished as a do-list. Select the proper engine start procedure based on outside air temperature and internal engine temperature. If engine has been exposed to temperatures at or below 20ºF (7ºC) for a period of two hours or more, the use of an external pre-heater and external power is recommended. Failure to properly pre-heat a cold soaked engine may result in congealing within the engine, oil hoses, and oil cooler with subsequent loss of oil flow, possibly internal damage to the engine, and subsequent engine failure.

If the engine does not start during the first few attempts, or if the engine firing diminishes in strength, the spark plugs have probably frosted over. Preheat must be used before another start is attempted.

Fire Precautions and Procedures

- No smoking in or around Scanlon Aviation aircraft.
- No cell phone use in or around aircraft while fueling operations.
- During fueling operations, no one may be on or in the aircraft.

Before Taxi

Complete the Before Taxi checklist as a flow and reference the aircraft checklist to verify all items are complete. It is recommended to set up the required navigation equipment and communication frequencies for the intended flight at this time. Primary navigation should be set into GPS 1 and secondary or auxiliary navigation set into GPS 2 if needed. Set primary airborne frequencies into COM 1 and necessary ground frequencies into COM 2.

Taxi-Out

A cause of brake failure is the creation of excessive heat through improper braking practices. Riding the brakes while taxiing causes a continuous build up of energy which may lead to excessive heat. Excessive heat causes warped brake rotors, damaged or glazed linings, damaged o-rings, and vaporized brake fluid. To avoid brake failure, observe the following operating and maintenance practices:

- Directional control should be maintained with rudder deflection supplemented with brake pressure as required,
- Use only as much power (throttle) as is necessary to achieve forward movement. 1000 RPM is enough to maintain forward movement under normal conditions,
- Avoid unnecessary high speed taxiing. High speed taxiing will result in excessive demands on the brakes, increased brake wear and the possibility of brake failure,
- Use the minimum necessary brake application to achieve directional control,

- Do not ride the brakes. Pilots should consciously remove pressure from the brakes while taxiing. Failure to do so results in excessive heat, premature brake wear, and increased possibility of brake failure,
- Refer to the Handling, Service and Maintenance section of the POH or the Maintenance manual for recommended maintenance and inspection intervals for brakes.

Maintain high levels of situational awareness during all movement on the airport surface to avoid a runway incursion accident. Minimize tasks such as reading checklists or folding maps while taxiing. Utilize the CMax airport diagram to aid in situational awareness.

• WARNING •

Maximum continuous engine speed for taxiing is 1000 RPM on flat, smooth, hard surfaces. Power settings slightly above 1000 RPM are permissible to start motion, for turf, soft surfaces, and on inclines. Use minimum power to maintain taxi speed.

Before Takeoff

Complete the Before Takeoff checklist as a do-list. Complete the checklist prior to taking the active runway or an appropriate run up area prior to departure. The Before Takeoff checklist will ensure the aircraft is properly configured for takeoff. Run-up items are included in this checklist. Verify engine oil temperature reaches a minimum of 100º F prior to applying run up power settings. Verify all engine and electrical indications are normal prior to departure. During cold weather operations, the engine should be properly warmed before takeoff. In most cases this is accomplished when the oil temperature has reached at least 100º F. In warm or hot weather, precautions should be taken to avoid overheating during prolonged ground engine operation. Additionally, long periods of idling may cause fouled spark plugs.

Take-Off

Reference the Takeoff checklist prior to departure. Complete a takeoff briefing to review the critical items prior to takeoff. A takeoff briefing allows the pilot to review the takeoff procedure and determine the actions necessary in the event of abnormal/emergency conditions during the takeoff roll and initial climb. At a minimum, a takeoff briefing should include the following items:

- Type of procedure used (normal, short, or soft),
- Takeoff distance required / runway distance available,
- V_R and initial climb speed,
- Abnormality / engine failure before V_R,
- Abnormality / engine failure after V_R.

Sample Takeoff Briefing

This will be a _____ (normal, short, soft) takeoff from RWY _____ with a takeoff distance of _____ feet and _____ feet of runway available. Rotation speed is _____ KIAS. Initial heading after takeoff is _____ degrees to an altitude of _____ feet. Abort the takeoff for any engine failures/abnormalities prior to rotation. If the engine fails after rotation I will _____.

En Route Climb

Complete the Climb checklist as a flow when time and workload permit. Once clear of obstacles and terrain, normal climbs are performed flaps UP (0%) and full power at speeds 5 to 10 knots higher than best rate-of-climb speeds. These higher speeds give the best combination of performance, visibility and engine cooling. When desired and clear of obstacles, transition to

cruise climb speed for increased engine cooling, visibility and passenger comfort. For maximum rate of climb, use the best rate-of-climb speeds shown in the rate-of-climb chart in Section 5 of the POH. If an obstruction dictates the use of a steep climb angle, the best angle of climb speed should be used. Climbs at speeds lower than the best of rate climb speed should be of short duration to avoid engine cooling problems.

• Caution •

Use caution when engaging the autopilot at low altitude due to the increased workload of programming the autopilot and potential for human errors. Pilots should hand fly the aircraft to a safe altitude and engage the autopilot if desired when time and workload permit. Consider setting the autopilot bugs prior to departure to reduce the amount of workload associated with setting up and engaging the autopilot.

Cruise

Complete the Cruise checklist as a flow when time and workload permit. Allow the aircraft to accelerate to cruise speeds before setting the desired cruise power setting. Ensure adequate fuel reserves remain for the intended destination. Normal cruise power settings are between 65% - 85% power with mixture setting for best power or best economy.
For engine break-in, cruise at a minimum of 75% power until the engine has been operated for at least 25 hours or until oil consumption stabilizes. Operation at higher power will ensure proper seating of the rings, is applicable to new engines, and engines in service following cylinder replacement or top overhaul of one or more cylinders.

Descent

Descents should be planned during cruise considering the amount of altitude to lose, distance and time to destination, ATC restrictions, obstacle/terrain clearance, desired rate of descent, and engine care. Use the vertical navigation function of the GPS to assist descent planning. To manage workload, complete the descent checklist at the top of descent or at least 20 minutes from the destination. Set appropriate frequencies and review weather to determine the active runway. Verify GPS units are programmed as desired for the arrival and approach into the airport. Power should be used during descent to manage airspeed and maintain engine temperatures as desired. Maintain airspeed within the green arc if turbulence is expected or encountered during the descent. Use caution and avoid excessive maneuvering when airspeed is within the yellow arc during the descent. Complete the Descent checklist as a flow when time and workload permit upon initial descent to land. Reference the checklist to verify all items are complete once the flow has been completed.

Before Landing / Traffic Pattern

Complete the Before Landing checklist as a flow prior to entering the traffic pattern when time and workload permit. Slow the aircraft early enough to allow for an easy transition into the traffic flow and enough time to ensure the aircraft is configured for landing. The following profile describes a normal traffic pattern. Pilots should use this profile as a guide when entering the traffic pattern on the downwind leg and modify as appropriate for base entry or straight in approaches.

Approach

To reduce workload during the descent and instrument approach procedure follow these recommendations.

- Obtain destination weather information as soon as possible to determine active runways and applicable approaches,
- Set up applicable COM and NAV frequencies prior to descent,
- Use the autopilot while briefing and preparing for the approach,
- Reduce unnecessary communications and distractions during the approach,

- Use the Descent and Before Landing flows outlined in this manual to complete checklist and avionics set up procedures,

Always reference the checklist after the flow is complete,

- Brief the approach using the guidelines listed in this section.

Stabilized Approach Criteria

A stabilized approach is critical to a safe, successful landing. A stabilized approach is characterized by a constant angle, constant rate of descent approach profile ending near the touchdown point. Stabilized approach criteria apply to all approaches including practice power off approaches.

VFR Stabilized Approach Definition

All briefings and appropriate checklists should be completed by 500' above ground level (AGL) in visual conditions. A Visual Flight Rules (VFR) approach is considered stabilized when all of the following criteria are achieved by 500' AGL:

- Proper airspeed,
- Correct flight path,
- Correct aircraft configuration for phase of flight,
- Appropriate power setting for aircraft configuration,
- Normal angle and rate of descent,
- Only minor corrections are required to correct deviations.

A go around must be executed if the above conditions are not met and the aircraft is not stabilized by 500' AGL.

IFR Stabilized Approach Definition

All briefings and appropriate checklists should be completed by 1000' AGL for instrument conditions. An Instrument Flight Rules (IFR) Approach is considered stabilized when all of the following criteria are met from 1000' AGL and continues to touchdown:

- Proper airspeed,
- Correct flight path,
- Correct aircraft configuration for phase of flight,
- Appropriate power setting for aircraft configuration,
- Normal angle and rate of descent,
- Only minor corrections with pitch and power are required to correct airspeed and glide path deviations,
- Normal bracketing (+/- 5º) is used to correct for lateral navigation deviations.

Do not change flap configuration after crossing the final approach fix (FAF) until the runway is in sight and landing is assured.

A missed approach must be executed if the above conditions are not maintained during an instrument approach.

Go-Around

A go around should be executed anytime an approach does not meet the stabilized approach criteria outlined in this manual for instrument or visual conditions. A go around should be completed from memory since it is a time critical maneuver. In addition to the stabilized approach criteria, execute a go around/ missed approach for these conditions:

- Excessive ballooning during round out or flare,
- Excessive bouncing or porpoising,
- Landing beyond 1st third of the runway,
- Any condition when a safe landing is in question.

The first priority of executing a go around is to stop the aircraft's descent. Smoothly and promptly apply full power while simultaneously leveling the wings and pitching the aircraft to stop the descent. Maintain coordination while adding power by applying rudder pressure. Retract the flaps to 50%. Do not fully retract the flaps at this point in the go around because it may lead to excessive altitude loss. Begin pitching for a climb attitude once the aircraft's descent rate has been stopped. Pitch for V_X if obstacle clearance is an issue. Pitch for V_Y for all other situations. Retract flaps to 0% once the aircraft is climbing, and clear of obstacles, and at 85kts (SR20), 80kts (SR22)

Landing

Normal Landing

Normal landings should be made with 100% flaps. Final approach speeds should be adjusted to account for gusts exceeding 10 KTS by adding half of the gust factor. Reduce power smoothly and begin slowing from the final approach speed at a time that allows an easy transition from final descent to round out and flare with minimum floating or ballooning. Touch downs should be made on the main wheels first at speeds slightly above stall. Gently lower the nose wheel after the mains are on the ground.

After Landing

Complete the After Landing checklist as a flow after clearing the active runway. Ensure the pitot heat is turned off. The mixture can be leaned if desired. Set the mixture by leaning for max RPM rise.

Arrival/Engine Shutdown

Complete the shutdown checklist as a flow pattern. Verify with the checklist to ensure all items have been accomplished when completed with the flow. The avionics switch may be left on during engine shutdown. Notify maintenance personal immediately and do not move the propeller if a hot magneto is found during the shutdown process. The aircraft should be parked on a ramp or in a hangar. If the aircraft is parked outside, it should be chocked and tied down if possible.

Aircraft Securing Procedures

At the completion of each flight:

- Ensure the master switch and magneto switches are off.
- The sunscreens, CAPS pin, pitot cover and nose inlet plugs will be installed.
- Secure the tie downs.
- Remove all papers, wrappers, and refuse.
- Lock the airplanes doors.

Operational and Training Information

General

This section should be used as a supplement for the planning and execution of all flights in Cirrus aircraft. Although an excellent resource, this information will not guarantee a safe flight. Minimizing flight risk requires sound judgment and sensible operating practices. Safety of flight ultimately depends upon the decisions made by you, the pilot. Safe flights should be conducted in accordance with regulations, ATC clearances, personal capabilities, and the aircraft operating limitations described in the FAA Approved Airplane Flight Manual and Pilot Operating Handbook (POH). Procedures in this publication are derived from procedures in the FAA Approved Airplane Flight Manual (AFM). Cirrus Design has attempted to ensure that the data contained agrees with the data in the AFM. If there is any disagreement, ***the Airplane Flight Manual is the final***

authority. For operations outside the United States, refer to the appropriate regulations for that country. This publication should be in the pilot's possession during all flight operations.

Pilot Qualification and Training

The pilot in command of any Cirrus aircraft is responsible for its safe operation. It is recommended that all pilots operate in accordance with the policies and procedures prescribed within this publication. In no case does this document relieve the pilot in command from the responsibility of making safe decisions regarding the operation of the aircraft.

Training

Initial Training

Cirrus pilots should satisfactorily complete the Cirrus Transition Training Course or the Cirrus Standardized Instructor Program (CSIP) course prior to acting as pilot in command of a Cirrus aircraft.

• Note •

Instrument rated pilots should complete an instrument proficiency check prior to flying in Instrument Meteorological Conditions (IMC).

Recurrent Training

Cirrus pilots should complete recurrent training at a Cirrus Standardized Training Center (CSTC) or with a Cirrus Standardized Instructor (CSI) under the guidance of the Cirrus Pilot Learning Plan. Recurrent training emphasizes aeronautical decision making, risk management, and airmanship, which leads to increased proficiency. The recurrent training program provides an opportunity to meet the requirements of a biennial flight review or instrument proficiency check.

• Note •

Instrument rated pilots should complete an instrument proficiency check every 6 months.

Additional Training Resources

Pilot's World Magazine

Pilot's World is a free online monthly proficiency program used to increase a pilot's knowledge, proficiency and safe utilization of a Cirrus aircraft. It is designed for pilots, with or without an instrument rating. Each month this program provides a Ground Segment and Flight Segment that address important topics of value to all Cirrus pilots. Pilot's World is accessible at http://www.cirrusdesign.com.

Jeppesen Learning Center

Jeppesen Learning Center is an online training resource used by Cirrus pilots before, during and after the initial transition training. The Jeppesen Learning Center includes approximately eight hours of online ground school and syllabi for six scenario-based flight workshops. A bookshelf containing publications specific to the aircraft and avionics along with additional information is included. Access to Jeppesen Internet Flight Planner is also provided. Cirrus and Jeppesen believe that this is the first time that such an integrated curriculum has been provided in a general aviation training program.

Cirrus Pilot Leaning Plan

The Cirrus Pilot Leaning Plan provides guidance on the recurrent training events recommended by Cirrus Design. Following the guidance provided in the learning plan will help Cirrus pilots develop and maintain a high level of proficiency. This training, coupled with exercising sound judgment, will help ensure the safe completion of flight.

Cirrus Owners and Pilots Association

Cirrus Owners and Pilots Association (COPA) is an organization that welcomes the membership of Cirrus owners, pilots and enthusiasts with an interest in aviation and particularly, Cirrus aircraft,

issues and events. Three main training and safety related events provided by COPA are the Cirrus Pilot Proficiency Program (CPPP), the Critical Decision Making (CDM) course and the Partner in Command (PIC) course. The CPPP course is designed to expose Cirrus pilots to issues they may encounter while operating their aircraft. Topics such as weather, accident review, advanced avionics, emergency procedures and engine management are discussed and applied during a CPPP course.

Critical Decision Making Course
The Critical Decision Making course is typically presented in conjunction with a Cirrus Mobile Showroom Event and may take place at any number of cities throughout North America. The CDM course addresses issues related to aeronautical decision making as it relates to Cirrus pilots. The PIC course has been designed to give frequent Cirrus passengers more knowledge regarding safety system operations in the unlikely event that the Pilot in Command should become incapacitated. Procedures include using basic radio communication and CAPS activation. The PIC course is provided by both Cirrus Design and COPA. PIC, CPPP and CDM schedules and information can be found on the COPA website; www.cirruspilots.org

Medical Certificates

In order to exercise the privileges of a private pilot certificate the pilot must hold a third class medical certificate, which is valid for 24 months from the date of issue (36 months if the person is under 40.) In order to exercise the privileges of a commercial pilot certificate a pilot must hold and maintain a second-class medical certificate valid for 12 calendar months from the date of issue.

Student Pilot Weather Minimums

Dual Flight
VFR operations if outside the traffic pattern; 4 miles visibility and 2,000 foot ceilings.

Solo Flight
As assigned by Scanlon Aviation flight instructor, but no lower than 7 miles visibility and 3,000 foot ceilings.

Takeoff and Landing Wind Proficiency

A Cirrus pilot should not attempt to takeoff or land when the wind speed and crosswind component exceed the individual's capabilities.

Non-Instrument Rated or Instrument Rated (Non-Proficient)
- Day: Maximum 25 knots sustained and 15 knots crosswind.
- Night: Maximum 25 knots sustained and 10 knots crosswind.

Instrument Rated (Proficient)
- Day: Maximum 30 knots sustained and 15 knots crosswind.
- Night: Maximum 25 knots sustained and 15 knots crosswind.

Instrument Rated (Proficient with Demonstrated Ability to Category I Minimums within 60 days)

- Maximum 35 knots sustained and 20 knots crosswind or maximum demonstrated crosswind component. When taking off or landing on ice-covered runways (braking action reported POOR), the crosswind component should not exceed 50% of the aircraft's demonstrated crosswind component. Takeoff and landing training should not to be conducted if the wind exceeds 25 knots or the gust factor exceeds 10 knots. During normal operations, land into the wind whenever possible. Where airport layout or the type of operation requires landing with a tailwind - for example, an Instrument Landing System (ILS) approach - up to a 10 knot tailwind component is allowed per the Performance Section of the Pilot Operating Handbook.

Takeoff, Enroute and Landing Minimums

Cirrus pilots should not operate below the following minimum ceiling and flight visibility limitations:

Non-Instrument Rated or Instrument Rated (Non-Proficient)
A pilot should only operate when the ceiling and visibility are at least 3000 feet and 5 miles, respectively, during the day. For night operations the minimum ceiling and visibility should be at least 5000 feet and 10 miles, respectively.

Instrument Rated (Proficient)
A pilot who has fewer than 100 hours in a Cirrus aircraft should only operate in that aircraft type when the ceiling and visibility are at least 1000 feet and 3 miles, respectively. For day operations, a pilot who has logged more than 100 hours in a Cirrus aircraft should only operate that aircraft type when the ceiling and visibility are at least 500 feet and 1 mile, respectively. For night operations, a pilot who has logged more than 100 hours in a Cirrus aircraft should only operate that aircraft type when the ceiling and visibility are at least 600 feet and 2 miles, respectively.
Instrument Rated (Proficient with Demonstrated Ability to Category I Minimums within 60 days)

• Note •

Initial Category I currency should be obtained with a CSTC instructor or a CSI.

A pilot who has logged fewer than 100 hours in a Cirrus aircraft should only operate when the ceiling and visibility are at least 500 feet and 1 mile, respectively. A pilot who has logged more than 100 hours in a Cirrus aircraft should only operate that aircraft type when the ceiling and visibility are at least 200 feet and 1/2 mile, respectively.

• Note •

Pilots should file an IFR flight plan any time the weather conditions are below 3000 feet and/or 5 miles visibility.

Currency Requirements

VFR
Cirrus pilots should maintain VFR currency by completing each of the following items in a Cirrus aircraft:

- The Cirrus Transition Training course,
- 3 takeoffs and 3 landings to a full stop within the previous 60 days,
- 10 hours as the Pilot-in-Command (PIC) within the previous 60 days,
- The training events outlined in the Cirrus Pilot Learning Plan.

Cirrus pilots should fly with a CSTC instructor or with a CSI to meet the flight currency requirement if currency lapses. Completion of training events outlined in the Cirrus Pilot Learning Plan will also restore flight currency.

IFR
Cirrus pilots should maintain IFR currency by completing each of the following items in a Cirrus aircraft:

- VFR currency requirements,

- An Instrument Proficiency Check (IPC) with CSTC instructor or a CSI within the previous 6 months,
- 3 instrument approaches in actual or simulated instrument conditions within the previous 60 days.
- For Category I currency, demonstrate the ability to execute an instrument approach to Category I minimums within the previous 60 days.

• Note •

Initial Category I currency should be obtained with a CSTC instructor or a CSI.

Collision Avoidance

Ground operations

- While taxiing the aircraft, full attention shall be given to the operation of the aircraft and surrounding buildings, aircraft and ground vehicles.
- Checklist, GPS programming and other tasks that may distract the pilot are to be performed only while the aircraft is not in motion.

Flight operations

- In VMC the pilot shall maintain proper visual scanning techniques with eyes outside the cockpit 75% of the time and inside 25% or less.
- The TAS system shall be active for all flights and the lower GNS 430 unit shall be on the traffic page for all normal operations.
- A standard 45° entry and pattern shall be made at uncontrolled airports unless local conditions and/or safety dictate otherwise.
- Standard radio communications shall be maintained at towered and non-towered airports as indicated in the Aeronautical Information Manual.

Practice Areas

San Pablo Bay

The San Pablo practice area may be used at altitudes permitting adequate gliding distance to the shoreline and time to maneuver for an appropriate off airport landing site. Minimum altitude should be in compliance with paragraph (I) of this manual. Flight below 1,500 feet not permitted over the Hamilton development or the homes SE of Gnoss Field.

West of Petaluma

This practice area starts west of the Petaluma residential areas and may extend out to the Pacific shoreline. Be aware of the wildlife sanctuaries and at no time shall flight operation be conducted in the charted sanctuaries.

Operating Altitudes

Cruise Flight
No Scanlon Aviation aircraft shall be operated at and altitude in cruise flight that violates the FAA regulations or creates an undue risk to the aircraft and its passengers.

Maneuvering Flight
During maneuvering flight including practice stall, slow flight and steep turns, Scanlon Aviation aircraft shall be operated at a minimum of 2,500 feet AGL.

Simulated Emergencies
During simulated emergencies, Scanlon Aviation aircraft shall be operated at an altitude that allows full recovery prior to 1,500 feet AGL. Engine failure simulation may take place over an uncontrolled airport with a power off landing at that airport traffic permitting. At no time shall the safety of the flight be compromised during simulated emergencies.

Pilot Considerations

Duty Time and Rest

Pilots should avoid a duty period greater than 14 hours including a maximum of 8 hours of flight instruction. A pilot should have a 10 hour rest period prior to flying the following day. Pilots should consider non-flight related working periods as duty time.

Physiological

Intoxicants
Alcohol: Pilots should not consume alcohol or other intoxicants within 12 hours prior to flying and should always consider the lasting effects of alcohol the following day.

Drugs: Prescription or over-the-counter – any medication used by pilots operating Scanlon Aviation, LLC aircraft shall be approved for use by the FAA. In addition when a pilot starts using a new medication he/she should monitor the effects of that medication before operating aircraft.

Drug testing: Although Scanlon Aviation, LLC has an Alcohol and Drug Testing program for part 135 operations; we will not be requiring testing for instructors and renter pilots.

Consequences if found under the influence: Any individual found under the influence of intoxicants of any kind will lose all flight privileges.

Alcohol and Drug Awareness Assistance
Should a pilot find him or herself in need of assistance with drug or alcohol abuse, please visit Novato Drug Rehab at this website: http://www.drug-rehabs.org/California-Novato-drug-rehab-treatment.htm or by Phone: 1 877-437-8422.

Blood Donations
A pilot should not operate an aircraft within 72 hours after a blood donation or transfusion due to temporary lowering of oxygen carrying capacity of blood following a blood donation or transfusion.

Scuba Diving
A pilot or passenger who intends to fly after scuba diving should allow the body sufficient time to rid itself of excess nitrogen absorbed during the dive. The recommended wait times are as follows:

- Wait 12 hours - if flight will be below 8,000 feet pressure altitude and dive did not require a controlled ascent.
- Wait 24 hours - if flight will be above 8,000 feet pressure altitude or dive required a controlled ascent.

Aircraft Considerations

Aircraft Maintenance

All Maintenance of Scanlon Aviation, LLC aircraft shall be under the direction of Scanlon Aviation, LLC management. No Maintenance or repairs are to be made to any Scanlon Aviation, LLC aircraft unless specifically authorized by a Scanlon Aviation, LLC manager.

Scanlon Aviation, LLC will maintain their aircraft in accordance with the Instructions for Continued Airworthiness found in the Airplane Maintenance Manual. Aircraft maintenance will be completed at a Cirrus Authorized Service Center.

There is a worldwide network of Cirrus authorized professionals that are trained to maintain Cirrus aircraft. Cirrus Authorized Service Centers are available for regularly scheduled aircraft maintenance or needed repairs. A complete listing of service centers is available at http://www.cirrusdesign.com.

If a Cirrus aircraft is damaged or encounters mechanical difficulty that is hazardous to flight or ground operations away from home base, the pilot should land as soon as practical and not attempt to take off. The pilot should secure the aircraft and contact a Cirrus Authorized Service Center or call the Cirrus Hotline 800-279-4322. The purpose of this call is to assist the pilot in analyzing the problem and determining the best solution.

Grounding of Aircraft

A Cirrus pilot or mechanic has the authority to ground an aircraft anytime it is determined to be not airworthy.

Aircraft Discrepancy and Deferral Procedures

- Any aircraft discrepancies shall immediately be brought to the attention of the Scanlon Aviation maintenance manager.

- All aircraft discrepancies are to be noted in the aircraft flight log book located in the center console under the arm rest. Include the “Flight Timer” reading, the date, a clear concise description of the discrepancy, and the reporting pilot’s name.

- Prior to an aircraft returning to service, the Scanlon Aviation, LLC maintenance manager shall see that the discrepancy is repaired and note so in the aircraft flight log book, or if deferred, ensure the proper placards are in place and the deferred maintenance item is properly noted in the aircraft flight log book.

Flight Planning

Pilots are encouraged to file VFR or IFR flight plans for all cross-country flights. Pilots should always plan an alternate, whether operating VFR or IFR.
The pilot should complete the following flight planning responsibilities:

- Determine the best route and altitude considering; winds aloft, freezing levels, cloud bases and tops, turbulence, terrain, airspace and Temporary Flight Restrictions (TFRs).
- Determine alternate airport.
- Calculate fuel requirements.
- Verify aircraft is within weight and balance limitations.
- Calculate takeoff and landing distances. Verify runway lengths for intended airports.
- File flight plan.

Weather Assessment

Pilots should determine if the weather conditions exceed their qualifications and capabilities. A decision should be made to postpone the flight if the weather is not acceptable. Flight planning should continue if the weather is acceptable.

• Note •

To facilitate flight planning, the U.S. Government provides a free Direct User Access Terminal Service (DUATS) for all licensed pilots at http://www.duats.com.

IFR Alternate Airport Weather Requirements

If from 1 hour before to 1 hour after the estimated time of arrival at the destination airport, the weather is forecast to be at least 2,000 foot ceilings and 3 mile visibilities, no alternate is required, though it is important to be familiar with the area if a diversion is required. If forecasted weather conditions are less than 2,000 feet and 3 miles, an alternate must be filed.

A pilot may only include an alternate airport in an IFR flight plan when appropriate weather reports or forecasts, or a combination of them, indicate that, at the estimated time of arrival at the alternate airport, the ceiling and visibility at that airport will be at or above the following weather minima:

- For a precision approach procedure: Ceiling of 600 feet and visibility 2 statute miles.
- For a Non-precision approach procedure: Ceiling of 800 feet and visibility 2 statute miles.

If no instrument approach procedure has been published, the ceiling and visibility minima are those allowing descent from the minimum enroute altitude (MEA), approach and landing under basic VFR.

Fuel Requirements

No person may operate an aircraft in IFR conditions unless there is enough fuel (considering weather reports, forecasts, and weather conditions) to:

- Complete the flight to the first airport of intended landing,
- Fly from that airport to the alternate airport,
- Fly after that for 45 minutes at normal cruising speed.

No person may begin a flight in an aircraft under VFR conditions unless (considering wind and forecast weather conditions) there is enough fuel to fly to the first point of intended landing and assuming normal cruising speed and at least an additional 45 minutes beyond that point in either day or night conditions.

Minimum Runway Length

Cirrus pilots are encouraged to operate off a minimum runway length of 2,500 feet or twice the expected takeoff and /or landing distance, whichever is higher. Cirrus pilots should receive short field takeoff and landing instruction prior to operating at fields shorter then 2,500 ft.

Noise Abatement

When operating out of noise sensitive airports pilots are encouraged to follow local noise abatement procedures and consider a power reduction during the climb if necessary and safe.

Weather

A critical factor in a successful flight is the pilot's evaluation of weather conditions. Many weather related accidents could have been prevented during preflight if the pilot had thoroughly evaluated the weather conditions. The following weather resources will be useful for evaluating the weather:

Flight Service Station: 800-WX-BRIEF
Aviation Weather Center ..... http://www.aviationweather.gov
Direct User Access Terminal Service (DUATS) ... http://www.duats.com
National Weather Service..... http://www.nws.noaa.gov

The go/no-go decision and the route to the intended destination greatly depend on the weather at the departure airport, along the route and destination. The pilot's ability to interpret and understand aviation weather is critical to the safety of flight. Follow the steps below when assessing the weather for every flight.

Overview

The first step to understanding the weather conditions along the intended route is to assess the big picture. The pilot should become familiar with pressure systems, frontal systems, precipitation, areas of marginal VFR and IFR conditions, and areas of icing and turbulence.
Weather products available include:

- Surface analysis chart,
- Weather radar,
- Satellite Imagery.

Hazards to Flight

The second step is to identify any potential hazards for the intended flight. The pilot should become familiar with areas of marginal VFR and IFR conditions, convective activity, and areas of icing and turbulence.
Weather products available include:

- Weather depiction chart,
- AIRMETs, SIGMETs and Convective SIGMETs,
- Weather radar,
- Pilot reports,
- Area forecast,
- Current and forecasted icing potential tools,
- http://www.aviationweather.gov

Current Observations

The third step is to become familiar with the current observations along the intended flight. Current weather observations within 50 miles of the departure, intended route and destination airport should be analyzed.
Weather products available include:

- METARs,
- Pilot reports.

• Note •

Go to http://adds.aviationweather.gov/java/ for an interactive weather tool.

Forecasted Weather

The fourth step is to understand what the weather is expected to do during your flight. Evaluate the weather +/- 2 hours from your estimated time of arrival at the destination or planned alternate. Weather products available include:

- TAFs,
- Area forecast,
- Prognostic charts,
- Winds and temperature aloft,
- AIRMETs, SIGMETs and Convective SIGMETs.

NOTAMS

The fifth step is to become aware of any Notices to Airmen (NOTAMs) that may affect the flight. Pay close attention to any TFRs that may interfere with your routing.

Thunderstorm Flying

Never regard a thunderstorm lightly - even when radar observers report the echoes are of light intensity. Avoiding thunderstorms is the best policy. The following are some Do's and Don'ts of thunderstorm avoidance:

- Don't land or takeoff in the face of an approaching thunderstorm. A sudden gust front or low level turbulence could cause loss of control.
- Don't attempt to fly under a thunderstorm even if you can see through to the other side. Turbulence and wind shear under the storm could be disastrous.
- Don't trust the visual appearance to be a reliable indicator of the turbulence inside a thunderstorm.
- Avoid by at least 20 miles any thunderstorm identified as severe or giving an intense radar echo. This is especially true under the anvil of a large cumulonimbus.
- Circumnavigate the entire area if the area has 6/10 thunderstorm coverage.
- Remember that vivid and frequent lightning indicates the existence of a strong thunderstorm.
- Regard as extremely hazardous any thunderstorm with tops 35,000 feet or higher, whether the top is visually sighted or determined by radar.

Temperature Minimums

Flight training operations should not be undertaken when the outside air temperature falls below --20 Fahrenheit. Cirrus aircraft should be preheated if exposed to ground temperatures below 20 Fahrenheit for more than two hours. Do not operate the engine at speeds above 1700 RPM unless oil temperature is 75 Fahrenheit or higher and oil pressure is within specified limits of 30-60 PSI. When oil temperature has reached 100 Fahrenheit and oil pressure does not exceed 60 PSI at 2500 RPM, the engine has been warmed sufficiently to accept full rated power.

Operations in Icing Conditions

• WARNING •

Flight into known icing is prohibited.

A pilot should not take off in an aircraft that has frost, snow, or ice adhering to any external surface.

A pilot can expect icing when flying in visible moisture, such as rain, snow or clouds, and the temperature of the aircraft is below freezing. If icing is detected a pilot should turn on all available anti-icing equipment and do one of two things to exit the icing conditions; get out of the area of visible moisture or go to an altitude where the temperature is above freezing. The warmer altitude

may not always be a lower altitude. Proper preflight action includes obtaining information on the freezing level. Report icing to ATC, and if operating IFR, request new routing or altitude if icing is encountered.

In-Flight Considerations

Turns after Takeoff

The recommended turn altitude after takeoff is 400’ AGL, unless obstacle departure procedures or ATC instructions dictate otherwise. When cleared to “Fly Runway Heading”, pilots should maintain the heading that corresponds with the extended centerline of the departure runway until otherwise directed by ATC. Drift correction should not be applied; i.e., if the pilot is departing runway 04, with an actual magnetic heading of the runway centerline being 044 degrees, s/he should fly a heading of 044 degrees.

Weather Status

Pilots should monitor the weather along the route and destination airport for deteriorating conditions using onboard weather resources and ground based weather resources. Enroute Flight Advisory Service, Flight Watch, is generally available on 122.0 anywhere in the contiguous United States. A diversion may be necessary if the weather deteriorates beyond the pilot's qualifications and/or capabilities.

Aircraft Systems Status

Pilots should monitor the flight, engine and system parameters throughout the flight. Verify adequate fuel remains to reach the intended destination and switch fuel tanks as required to maintain an equal balance.

Pilot Status

Pilots should monitor fatigue and stress levels during the flight. A diversion may be necessary if the pilot has any reason to believe the flight can not be safely completed.

Situational Awareness

Pilots should maintain situational awareness throughout the entire flight using all available equipment and resources.

Supplemental Oxygen

According to Title 14 CFR Part 91.211 no person may operate an aircraft-

1. At cabin pressure altitudes above 12,500 feet mean sea level (MSL) up to and including 14,000 feet (MSL) unless the required minimum flight crew is provided with and uses supplemental oxygen for that part of the flight at those altitudes that is of more than 30 minutes duration;
2. At cabin pressure altitudes above 14,000 feet (MSL) unless the required minimum flight crew is provided with and uses supplemental oxygen during the entire flight time at those altitudes; and

3. At cabin pressure altitudes above 15,000 feet (MSL) unless each occupant of the aircraft is provided with supplemental oxygen.

• Note •

For optimal protection pilots are encouraged to use supplemental oxygen above 10,000 feet during the day and above 5,000 feet during the night.

Flight Safety

In addition to the operating limitations specific to each aircraft type, the following actions are not recommended:

- Parachuting activities,
- Hand propped engine starts,
- Flight below 500' AGL except for takeoff and landing,
- Flight beyond the safe gliding distance of land.

• Note •

The pilot should ensure that adequate survival gear is readily accessible if flight beyond the safe gliding distance is required.

Sterile Cabin

During sterile cabin operations all distractions such as XM radio, non-flight related materials and unnecessary communication with passengers should be minimized. A sterile cabin should be observed during departure, arrival and abnormal/emergency operations.

Smoking

Smoking is prohibited inside or near aircraft and hangars. It is the responsibility of the pilot to ensure that their passengers comply with these restrictions.

International Border Operations

Preflight

- Appropriate charts and flight supplements

Personal Documentation

- Pilot certificate,
- Medical certificate,
- Notarized letter authorizing children to fly (only if accompanied by one parent),
- Proof of citizenship,
- Passport,
- Birth certificate (original or certified true copy),
- Photo ID (required with birth certificate),
- Resident alien ID card,
- Other Visa documentation as required,
- Restricted Radiotelephone Operator Permit.

Aircraft Documentation

- Airworthiness certificate,
- Registration certificate (not temporary registration certificate),
- Operating limitations,
- Weight and balance information,
- Experimental Aircraft - Standardized Validation (for operations in Canada) or Special Flight Authorization (for operations in U.S.),

- Proof of liability insurance for the specific country,
- FAA Form 337 (U.S. aircraft only) or Supplemental Type Certificate (STC) documentation if fuel tanks have been added compartments,
- Aircraft Radio Station License,
- Customs Form 339A: Annual User Fee Decal Request - Aircraft.

Crossing the United States and Canadian Border

No Scanlon Aviation, LLC aircraft may be operated outside the contiguous United States.

Incident and Accident Procedures

The pilot shall immediately notify the nearest National Transportation Safety Board (NTSB) field office if an aircraft incident or accident occurs as defined in NTSB Part 830. The proper law enforcement agency and/or search and rescue shall be notified if necessary. The pilot should complete the Aircraft Accident and Incident Report, found in this section, after any accident or incident. The pilot should not discuss the circumstances with anyone not involved with the investigation.

Emergency Landing

If a Cirrus aircraft makes an emergency landing at a site not designated as an airport, the pilot should not attempt to take off, but should immediately contact the proper authorities.

In the event of an off field landing please contact Scanlon Aviation, LLC at 415-717-1189

Aircraft Incident and Accident Notification

An Aircraft Incident and Accident Report should be completed by the pilot any time a Cirrus aircraft sustains any damage or is involved in an accident or incident. The information may be useful in a future investigation. The report form is found in this manual.

NTSB Field Office

Southeast - Atlanta..... 404-562-1666
Southeast - Miami..... 305-597-4610
North Central 630-377-8177
Northeast - Parsippany..... 973-334-6420
Northeast - Ashburn 571-223-3930
Central Mountain 303-373-3500
South Central..... 817-652-7800
Northwest 206-870-2200
Southwest..... 310-380-5660
Alaska..... 907-271-5001

Aircraft Incident and Accident Report

Date of accident: _____ Time: _____
Pilot's Name: _____ Phone No:_____
Owner and/or Operator: _____
Aircraft Type: _____ N-No: _____
Type of Event (circle one): Accident Incident Damage
Last point of departure: _____
Point of intended landing: _____
Position of aircraft in reference to an easily defined geographical point:
_____
_____
Number of persons aboard:_____ Fatalities:_____ Injured:_____
Description of injuries: (if applicable): _____
_____
_____
Names of passengers: _____
_____
_____
Weather conditions (attach weather print-off if available):
Wind Direction: _____ Wind Velocity: _____
Visibility: _____ Sky Condition:_____
Temp/Dewpoint:_____ Altimeter Setting:_____
Other _____
Eye Witnesses:
Name Phone Number
1. _____ _____
2. _____ _____
3. _____ _____
Damage to Aircraft/Property (If yes,
explain):_____
_____
Description of any dangerous cargo:
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Detailed explanation of incident, accident, or damage:
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