Table of Contents **Page**

Cover photo courtesy of Justin Dillon

SR-22 Training Guide (Edition C4)

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Intentionally Left Blank

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Introduction

How to use this manual

This training manual is designed to serve as a companion to the Pilots Operating Handbook for your new SR22. It will be used before and during your new-owner transition training. It is a workbook designed to help you get the most from your training. Each section in the training manual corresponds to a section in the POH. In each section you will find, quiz questions, supplemental information, and operating tips.

> **This manual is designed to be a reference only, it does not constitute limitations. The official FAA approved POH is the only source for official aircraft information.**

This manual is divided into 13 sections; the first 10 sections correspond to a section in the POH. Each section is complete on its own and may be reviewed in any sequence. In each section you will find questions related to the topic of that section. The answers to the questions will be found in the POH. (unless otherwise noted) These questions should be completed prior to the beginning of your training. If you have problems with the quiz or would like clarification on a quiz question you may use the automated "ask the instructor" at the following address: www.aero.und.edu/cirrus.

Schedule of Training

The estimated/recommended training times listed on page 4 reflects the average time for a proficient and current pilot who comes prepared for training. We strongly encourage you to schedule as many days as recommended. You will only be charged for the days you use. The advanced avionics in the Cirrus SR22 are one of the largest challenges for transitioning owners. If you have little or no experience with the Garmin GNS430 you will want to schedule additional training. Weather can play a key role in the training schedule, please build some flexibility into your personal schedule. In the event of unforeseen delays such as weather

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

The amount of training needed is dependent on the experience level of the pilot. Please use the guidelines below to determine the amount of training you should schedule. Many factors, including weather, maintenance, and customer proficiency may extend the training schedule. You can reduce the training time by coming prepared. An excellent way of being prepared is to go through our online training program, and have the training guide completed prior to training.

<table>
<tr><th colspan="3">If your flying experience includes:</th><th>Plan for:</th></tr>
<tr><td colspan="3">500+ hours total time
(with at least 100 hours in last 12 months)
50+ high performance
Experience with advanced avionics and GPS
Instrument rated, instrument current and proficient</td><td>2 Days</td></tr>
<tr><td>200-500 hours total time
25-50 high performance
Instrument rated current and proficient</td><td>OR</td><td>200-500 hours total time
25-50 high performance
Experience with advanced avionics and GPS</td><td>3 Days</td></tr>
<tr><td colspan="3">Less than 200 hours total time
Less than 25 hours high performance
No instrument rating or
No experience with advanced avionics and GPS</td><td>4 Days</td></tr>
</table>

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Based on your experience you will complete the following lessons on the days indicated below.

2-Day Course

Lesson	Description	Day
1	Pre-Training Ground Evaluation	
2	Intro Flight	1
3	Power Point Scenarios	
4	Airport Operations & Landings *(Ground #5 Done Day 1)	
5	X-C Scenario #1	
6	X-C Scenario #2 (Lesson 5 & 6 Together)	2
7	Final Evaluation Flight	

3-Day Course

Lesson	Description	Day
1	Pre-Training Ground	
2	Intro Flight	1
3	Power Point System Scenarios	
4	Airport Operations &	2
5	X-C Scenario #1	
6	X-C Scenario #2	3
7	Final Evaluation Flight	

4-Day Course

Lesson	Description	Day
1	Pre-Training Ground Evaluation	
2	Intro Flight	1
3	Power Point System Scenarios	
4	Airport Operations & Landings	2
5	X-C Scenario #1	3
6	X-C Scenario #2	4
7	Final Evaluation Flight	

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Additional Services Available

In addition to regular transition training UND Aerospace Foundation offers the following additional services and training to Cirrus customers. Please contact Debbie Backlund at (218)-788-3217 to schedule additional service or see our web site for more information. www.aero.und.edu/cirrus

- Acceptance of your aircraft on your behalf (Power of Attorney)
- Delivery of your aircraft to your home airport
- Flight home accompaniment
- Biennial Flight Review (BFR)
- Instrument Proficiency Check (IPC)
- Recurrent Training
- Canadian Operations
- 14 day Instrument Course
- Custom Training
- Companion Course

Internet Hyperlinks

Pilot operating handbooks and supplements can be downloaded from the following web page or from the vendors web page listed below.
http://www.cirrusdesign.com/serviceandupgrades/pilotoperators/

www.aero.und.edu/cirrus	UNDAF Cirrus Training site
www.cirrusdesign.com	Cirrus Design Corporation
www.cirruspilots.org	COPA
www.avidyne.com	Avidyne Avionics
www.tcmlink.com	Teledyne Continental Motors
www.garmin.com	Garmin Avionics
www.goodrichavionics.com	Goodrich Avionics
www.s-tec.com	S-tec/Meggit
www.sandel.com	Sandel
www.flightice.com/tks.html	TKS
www.aopa.org	AOPA
www.faa.gov	Federal Aviation Administration

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Section 1 General

This section will cover Section 1 (General) of the SR22 Pilots Operating Handbook. Answers to all questions will be found in the appropriate section of the POH.

What is the wing span of the Cirrus SR22?
Tip: Keep this under consideration when hangering your aircraft.

What is the Max Gross weight of the aircraft?

What is the significance of this weight?

How much clearance is between the tip of the propeller and the ground?

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Intentionally Left Blank

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Section 2 Limitations

This section will cover Section 2 (Limitations) of the Cirrus SR22 Pilots Operating Handbook. Answers to all questions will be found in the appropriate section of the POH.

What it the max structural cruising speed of the SR22 ?

What is the significance of V_{no}, how does that differ from V_{ne}?

What is the significance of V_o?

What is the significance of the green arc?

What two speeds define the green arc?

During the engine break-in period what type of oil should be used?

What is the max takeoff altitude for the aircraft?

What is the max operating altitude of the aircraft?

Can you operate the aircraft at that altitude with out oxygen? (FAR 91.211)

Can you paint your airplane Navy Blue? Why?

Can you fly VFR with ALT 2 INOP?

Can you fly IFR with ALT 2 INOP?

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Can you fly VFR with one of the strobe lights out?

What is the significance of V_{pd} and why do you not see this in other Aircraft?

When would you use V_x? When would your use V_y?

Can you fly IFR with the NAV lights inoperative?

Can you fly with any of the engine instruments inoperative?

Is the aircraft approved for acrobatics/spins?

How many placards are on the SR-22?

Indicate the following Fuel Limits

Approved Fuel	_____
Total Fuel Capacity	_____
Total Fuel Each Tank	_____
Total Usable Fuel	_____
Unusable Fuel	_____

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

The following chart is a quick reference for airspeeds. Please feel free to reference this to aid in learning the appropriate V speeds

V_{so}	_____	V_o	_____
V_s	_____	V_{no}	_____
V_x	_____	V_{ne}	_____
V_y	_____	V_r	_____
V_{fe} 50%	_____	V_{pd}	_____
V_{fe} 100%	_____	V_g	_____

Max Crosswind _____

Fuel Limits		**Oil limits**	
Total usable fuel	_____	Max Oil	_____
Usable fuel tabs	_____	Min Oil	_____

Appropriate Speeds for traffic pattern operations (Found in Section 13)

Pattern Entry	_____	Base	_____
DownWind	_____	Final	_____

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Intentionally Left Blank

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Section 3 Emergency Procedures

This section will cover Section 3 (Emergency Procedures) from the SR22 Pilots Operating Handbook. Answers to all questions will be found in the appropriate section of the POH.

In any emergency situation, what is the most important thing to remember and perform?

What is the procedure for a fire on engine start?

What two ways are there to disconnect the trim?

What indications does the pilot receive if ALT 1 fails?

What equipment would you loose in the event you lost ALT 1, (See electrical power distribution schematic)

How long will Bat 1 last if everything is left on?

What equipment do you lose with an ALT 2 failure? (See electrical power distribution schematic)

What is your best glide distance if you were at 6,000' AGL?

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Where does the fuel light receive its indication from and under what condition does it illuminate?

When will the oil light illuminate?

What is the procedure for an emergency descent?

What is your procedure if your engine quits in flight?

What is your aircraft glide ratio?

What are the emergency landing speeds for your aircraft in these configurations:
Flaps Up? 50% Flaps? 100% Flaps?

If you entered turbulent air and were fully loaded, at what speed would you want to maneuver the aircraft?

In an engine failure situation with the prop wind milling, how can you gain additional glide distance?

What is the spin recovery procedure?

If only the airspeed indicator is giving erroneous information, what kind of malfunction can you expect?

Will the auxiliary fuel pump provide enough fuel to power the engine in the event of a engine driven fuel pump failure?

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

What two situations can you usually expect with a low oil pressure reading?

List the procedures in the event of a prop overspeed situation.

If you have smoke or fumes in the aircraft, do you want to shut off your electrical system? Why?

What would cause ALT 1 light to illuminate?

What procedure would you use to get Alt 1 back online? What would your next step be if you could not get the alternator back online?

What equipment do you lose with an ALT 1 failure?
(See electrical power distribution schematic)

What equipment do you keep with an ALT 1 failure?
(See electrical power distribution schematic)

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Intentionally Left Blank

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Section 4 Normal Procedures

This section will cover Section 4 (Normal Procedures) from the SR22 Pilots Operating Handbook. Answers to all questions will be found in the appropriate section of the POH.

Preflight
During the cabin preflight, what is the normal volt indication on the SR22?

What is the significance of checking the flap light with BAT 2 on, but BAT 1 off?
Tip: It is important to remember to check the annunciator panel each time. This item is not included in any other operational checklist.

What is the aerodynamic purpose of the aileron gap seal?

How many fuel drains are on the aircraft?

What purpose do the vortex generators serve?

What is the required main gear tire pressure?

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Before Start
What items would you brief your passengers on during a passenger briefing? (Assume this individual does not fly in small aircraft often.)

Normal Start
During start up, how soon should you see an oil pressure indication?

How does a cold weather start differ from a normal start procedure?

What considerations need to be made while performing a cold start?

What is the primary difference between a hot start and a normal start?

On start the aircraft backfires and a small puff of black smoke rises from under the aircraft. What is the probable cause and corrective action? Is this anything to be concerned about?

What is the max cranking intervals for the starter?

What is the indication that vapor is present in the fuel lines?

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Taxi
What indications are you looking for on the following instruments while taxing out to the active runway?

H.S.I.
Attitude Gyro
Turn Coordinator

Before Take off
What is being checked when the power lever is brought up to the detent?

ALT 2 Light is illuminated while the power is at 1700 RPM, what is the probable cause and corrective action?

What is the max drop on the magnetos? Difference between the two?

No drop in RPM is noted on the magneto check, what is the probable cause and corrective action? What can be done to confirm an abnormal condition exists?

Describe a normal takeoff to cruise in your SR22

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Describe the difference between a normal and a short field takeoff.

Describe a normal descent to landing in your SR22?

You have misjudged your approach to landing due to winds, and it appears you will land longer than you anticipated. What is your best course of action? Describe the procedure you would use in this case?

After exiting the active runway from a normal landing describe the appropriate after landing, shutdown and securing procedures.

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Section 5 Performance

This section will cover Section 4 (Performance) from the SR22 Pilots Operating Handbook. Answers to all questions will be found in the appropriate section of the POH.

Use the following information to answer the questions, for a flight from Duluth MN to Rapid City SD. Assume Max gross weight and 75% "best power" setting.
The distance is 487 NM with a Magnetic Course of 254 degrees

Weather Conditions
KDLH 101250Z 3320KT 010SCT 15/10 A29.82
KRAP 101250Z 2226KTG35 010FEW 020SCT 20/17 A29.75

FD	**3000**	**6000**	**9000**
DLH	2925	253415	253704
GFK	302610	263309	253708
FSD	2923	263214	272907
RAP		283417	303309

Airport Information

KDLH Elevation 1420ft.
RWY 27/09 10152ft.
RWY 03/21 5699ft.

KRAP Elevation 3202ft.
RWY 23/05 3600ft.
RWY 32/14 8701ft.

What will be your takeoff distance from Duluth (KDLH)?

What will you have for a crosswind component if runway 27 is in use?

What will be your average climb rate out of KDLH to your selected cruise altitude?

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

What altitude will you use and why?
Why is it recommended to fly below 8000ft on a new engine?

What will be your endurance for today's flight?

What will be your calculated KTAS and fuel flow for cruise flight?

Will you be able to make your destination non-stop? SAFELY? (Difference between FAR regulations vs. reality)

How much fuel will you have once you reach your destination?

What will you have for a landing distance at KRAP?

If you had to make a 50ft. obstacle landing what would be the required runway distance?

What is your KCAS at 100KIAS with 100% flaps?

What is your stall speed at your approximate takeoff weight with 50% flaps?

What is the difference between your takeoff rate of climb vs. your enroute rate of climb?

What is the difference between range and endurance?

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Section 6 Weight and Balance

This section will cover Section 6 (Weight and Balance) from the SR22 Pilots Operating Handbook. Answers to all questions will be found in the appropriate section of the POH.

Flight from Duluth, MN (KDLH) to Rapid City, SD (KRAP) in April
Aircraft is SR22, assume 75% power settings.

Conditions:
Aircraft

BEW 2340lbs.	Moment 326.563	
Hours on New Engine	15.2 hrs	
Payload		
	Pilot	160 lbs.
	Front P ax	160 lbs.
	Rear Pax	200 lbs.
	Baggage	145 lbs.
	Fuel	486 lbs.

Note You can not leave anyone or baggage behind. (Hint you may need to move baggage and/or passengers around. You may also need to take out fuel.) Use any of the following methods of calculation in the POH to come up with the appropriate answers.

What is your ramp weight?

What is your aircraft's zero fuel weight?

What will be your aircraft's gross takeoff weight?

How much fuel will you have on board in gallons and pounds before takeoff?

Is unusable fuel and oil included in Basic Empty Weight?

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Will your aircraft be within CG limitations?

Where is the aircraft Datum?

You may use the following table to aid in calculations.
For Moment/1000, refer to loading table.

Description	Weight	Moment/1000
1. Empty Weight Includes unusable fuel & full oil		
2. Front Seats Occupants **….**Pilot and Passenger		
3. Rear Seats Occupants		
4. Baggage 130 Lb maximum		
5. Zero Fuel Condition **….**Sub total items 1 thru 4		
6. Fuel Load **….**81 Gallon @6.0 lb/gal. maximum		
7. Ramp Weight Sub total items 5 and 6		
8. Fuel for Start, taxi, and runup Normally 9 lb at Mom/1000 of 1.394		
9. Takeoff Weight Subtract Item 8 for item 7		

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Section 7 Systems

This section will cover Section 7 (Systems) from the SR22 Pilots Operating Handbook. Answers to all questions will be found in the appropriate section of the POH.

What are the control surfaces made of?

The main wing spar is continuous from wingtip to wingtip? (True or False)

The horizontal stabilizer is a two piece unit attached at empennage. (True or False)

What is the flap travel for 100% and 50%? Why is important to know that the flaps are on the Non-essential bus?

Is it possible to have a asymmetrical flap deployment in a Cirrus aircraft? **(Yes or No)**
Hint: take a look at the Flap control diagram.

List three ways to disconnect the autopilot?

How many master brake cylinders are there?
Hint: look at the brake system diagram.

Engine
Below what temperature does the oil bypass the oil cooler? Why is this significant?

List the three ways the SR22 engine is cooled?

What is the recommended oil level for the engine?

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

What would be the probable cause of soft or spongy brakes?
What would be the corrective action?

Describe the process of setting the parking brake?

What indications would the pilot get if the induction system is blocked?

What is the purpose of having dual magnetos?
Hint: looking for two items?

The oil warning light on the annunciator panel is illuminated.
What is the probable cause and the required course of action?

In the unlikely event of a loss of oil pressure, will the prop go to a high rpm low pitch setting or a high pitch low rpm setting?
Why is this important?

Fuel System
What is the total usable fuel in gallons?

When should the electric fuel pump be in the boost position?
list all.

At tabs, how much fuel is usable in each tank?

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

When does the FUEL caution light in the annunciator panel come on to indicate a low fuel condition?

If one tank is at 10 gallons, and the other tank is at 17 gal will the FUEL caution light illuminate?

Electrical System
Alternator #1 is rated for how many amps? How many volts?

Alternator #2 is rated for how many amps? How many volts?

Output from Alternator #1 is connected to which bus?

Output from Alternator #2 is connected to which bus?

Do the alternators require battery voltage for field excitation in order to start?

Should the batteries be turned off in flight under normal situations?

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Battery #1 is rated to how many amps/volts? Battery #2 is rated to how many amps/volts?

Battery 1 # is charged from what Bus? Battery 2 # is charged from what Bus?

What protection does the MCU provide for the alternators?

When battery #1 is turned on, which buses are energized?

When battery #2 is turned on which buses are energized?

What indications do you have that the isolation diode is working properly?
Hint: Refer to preflight cockpit check.

A steady ALT 1/ AlLT2 light denotes?

A flashing alternator ALT 1/ ALT2 light denotes?

How do you go check the output of Batter #2 only?

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Environmental:
The back seat passengers are cold, how do you go about setting the heat and ventilation knobs to direct the maximum amount of warm air to your passengers?
Hint: Look at the heating & ventilation diagram.

What is the primary concern when operating your heating system?

Pitot Static System
What three instruments are connected to the static system?
Hint: look at the pitot static system diagram.

When would you see the “Pitot Heat” light on the annunciator panel? Is this a normal or abnormal condition?

When practicing power off stalls with full flaps, at what IAS would you expect to hear the stall horn?

Is the autopilot on the Essential or Main Bus? Why is this important to know?

You have a report of an ELT going off in your area, how could you verify it is yours?

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Intentionally Left Blank

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Section 8 Service and Handling

This section will cover Section 8 (Service and Handling) from the SR22 Pilots Operating Handbook. Answers to all questions will be found in the appropriate section of the POH.

What are the five documents required by the FAA to be onboard the aircraft at all times?
Hint: Your temporary registration restricts you to domestic flights only. Radio license is only required for international flights.

What are the two recommended procedures for you to verify if your airplane is compliant with all Airworthiness Directives?
Hint: It is also possible to get this information from www.faa.gov on the web. We found this site to be a little difficult to navigate.

If an annual inspection was done on your aircraft November 19, 2003 the next inspection will be due _____?

After completing any of the work described as Preventative Maintenance in the POH, what are the required logbook entries you must make?

Should you use external power to start the airplane if it has a "dead" battery? Why?
Tip: In most cases you can't even connect external power to the airplane unless there's enough volts and amps remaining in battery 1 to energize the relay in the MCU.

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

When taxiing a Cirrus at normal taxi speeds is it better to use ruder pedals or brake pedals to maintain directional control?

Tip: In the event of a brake failure it is possible to use rudder for directional control however this procedure will only work if you are carrying enough power on the engine to produce enough induced airflow over the rudder. This procedure should only be used in an emergency! When applying power you may gain directional control but you will also gain a considerable amount of groundspeed.

When moving your Cirrus around on the ground you should ALWAYS use a _____.

Tip:When flying into an unfamiliar FBO that wants to move your aircraft with a mechanical tow bars be sure to check if the tow hook fits your aircraft. Some tow bars appear to fit but once any pressure is applied they will slip on the inside and all pressure is now being applied to the nose wheel faring causing damage to the fairing.

Mechanical dollies that lift the nose wheel of the ground should also be avoided due to the clearance of the nose wheel faring. Also, the strap used to secure the aircraft on these types of systems wraps around the nose wheel strut faring and will crack or possibly destroy the faring.

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

The fuel filtration screen in the gascolator must be cleaned every _____-hours of operation.

Tip: In order to get the most accurate fuel readings, when flying a Cirrus with engine monitoring, make sure that the fuel tanks are “topped off”. Many times FBO’s will leave fuel levels an inch or two from the top and in the Cirrus that could equate to several gallons that may be used for reserve purposes.

Proper tire inflation can be the key to great landings. The proper tire inflation for the nose wheel is _____. The proper tire inflation on the main tires is _____.

The minimum recommended oil level in your Cirrus is _____ quarts. The max is _____.

Battery 1 is located aft of the baggage compartment. (True - False)

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Intentionally Left Blank

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Section 9 Supplements/Avionics

This section will cover Section 9 (Supplements) from the SR22 Pilots Operating Handbook.

Because of the diversity and complexity of the various avionics supplied on Cirrus aircraft we recommend that you download the specific information manual for each piece of equipment. Additional training information on specific avionics can be found on our web page at; www.aero.und.edu/cirrus.

Pilot operating handbooks and supplements can be downloaded from the following web page or from the vendors web page listed below.
http://www.cirrusdesign.com/serviceandupgrades/pilotoperators/

Avidyne Avionics	www.avidyne.com
PFD	Primary Flight Display
MFD	Multi-Function Display
Teledyne Continental Motors	www.tcmlink.com
Garmin Avionics	www.garmin.com
GMA 340	Audio panel
GXT 327	Transponder
GNS 430	GPS/ Com/Nav
GNC 420	GPS/ Com
Goodrich Avionics	www.goodrichavionics.com
WX500	Stormscope Sensor
SKY497	Traffic Advisory System
S-tec/Meggit	www.s-tec.com
55X	Autopilot
System 30	Autopilot
Sandel	www.sandel.com
SN3308	Electronic Horizontal Situation Indicator.

Garmin GMA 340 Audio System

Before conducting your training you will need to know how to accomplish the following basic functions.

- Volume and squelch adjustments
- Com/Nav selectivity transmit and receive functions
- Crew isolation features
- Operation of Marker Beacon Annunciator

Garmin GTX 327 Transponder

Before conducting your training you will need to know how to accomplish the following basic functions.

- Entering squak codes
- Power on, off, and mode C operations
- Ident function
- Sub functions; Pressure Alt, flight time, count up timer, count down timer, contrast

At what airspeed does the transponder automatically cycle into "ALT" mode?

What has to happen for the transponder to cycle into standby mode after landing?

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Garmin GNS 430 Global Positioning System (GPS)

Before conducting your training you will need to know how to accomplish the following basic functions. Please note this is the most difficult piece of avionics to operate please take the time to learn the basic functions listed below. We also recommend purchasing a tutorial to aid in learning this system, such as V-flight, a free demo disk will be sent to you upon request. www.vflite.com

- Turn ON and OFF the Garmin unit.
- Tune in communications frequencies (manually with knob and frequency standby switch button) and adjust the volume.
- Direct–To Function (D → button) and input the airport name and/or identifier.
- Select nearest airport and navigate GPS direct-to the desired airport.
- Emergency frequency 121.5 MHz (communications standby switch held).
- Clear (CLR) Button – Default to Nav 1 page.
- Should know how to create, save and activate a flight plan. (not required)

Instrument Rated Pilots

- VOR/Localizer frequencies and how to identify them (manually with knob and the standby frequency switch) and adjust the volume.
- How to load and activate an approach
- How to create and edit a flight plan
- Understand when and where to use the cursor and enter buttons.
- Change the CDI between GPS and V/LOC mode and understand when it is appropriate to do so.
- Understand and know what the function of the OBS button.

Garmin GNS 420 GPS

Same basic functions as the GNS 430
Note: this unit is not approved for IFR.

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Sandel Avionics SN3308 Navigation Display

Before conducting your training you will need to know how to accomplish the following basic functions and indications. A basic knowledge of how a H.S.I. works is also required.

- Knowledge of information displayed along the top of unit.
- How to switch between 360 view and 120 arc view
- Default to standard 360 view
- Auto slew functions (on/off)
- Limitations of the System

S-Tec System 55X Autopilot with Altitude selector / Alerter

Before conducting your training you will need to know how to accomplish the following basic functions.

- Knowledge of aircraft response after engaging; HDG, NAV, APR, ALT, and VS functions.
- How to engage GPSS (GPS Steer mode)
- Three ways to disengage autopilot.
- Limitations to the autopilot system.
- Knowledge of annunciator indications and appropriate corrective action.
- Knowledge of altitude pre-select and how to set for climbs and decent.

IFR Pilots

- How to set auto pilot for a coupled ILS approach

Approved Oxygen Systems

Training on Oxygen systems is not covered in the standard training. Questions regarding Oxygen systems should be directed to Cirrus design or the supplier indicated in the Pilots Operating Handbook.

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

BF Goodrich Aerospace WX500 Stormscope Sensor

Before conducting training you will need to be familiar with the following:

- How and where information is displayed for the stormscope
- Limitations of the system

Goodrich SkyWatch SKY497 Traffic Advisory System

Before conducting training you will need to be familiar with the following:

- How and where information is displayed for the SkyWatch system
- Limitations of the system

Avidyne FlightMax Ex-Series Multifunction Flight Display

Before conducting training you will need to be familiar with the following:

- Limitations of the system

Avidyne FlightMax Ex-Series Primary Flight Display

Before conducting training you will need to be familiar with the following:

- Limitations of the system

Ice Protection System

Before conducting training you will need to be familiar with the following:

- Limitations of the system

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Intentionally Left Blank

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Section 10 Safety Information

This section will cover Section 10 (Safety Information) from the SR22 Pilots Operating Handbook. Answers to all questions will be found in the appropriate section of the POH.

The following section covers the intricacies of the (CAPS) Cirrus Airframe Parachute System.

What is the significance of the Vpd or max parachute deployment speed and what is the numerical value?

What factors do you need to take into account if the parachute is to be deployed?

List scenarios when activation of the CAPS might be appropriate?

Tip: There is no minimum deployment altitude. This is because the actual altitude loss during a particular deployment depends upon the airplane's speed, altitude and attitude at deployment as well as other environmental factors. As a guideline, the demonstrated altitude loss from entry into a one-turn spin until under a stabilized parachute is 920ft. Altitude loss from level flight deployments has been demonstrated at less than 400ft.

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Intentionally Left Blank

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Section 11 Cirrus Transition Course

The Cirrus transition training course is developed with the help of the FAA sponsored FITS program. The course is comprised of 7 lessons and an optional biannual flight review and/or instrument proficiency check lesson after the transition training has been completed.

The amount of time it takes to complete the course is dependent of several factors:

- Experience level of the pilot.
  - Total time
  - High performance time
- Experience with the Garmin GNS-430

Lesson 1: This lesson will cover the course briefing, detailing what will be covered during the next few days of training. During this lesson the operator must either correctly answer 70% of the training guide questions or complete a written quiz covering materials from the POH achieving at lease a 70% score.

If operator has satisfactory completed the training guide or quiz they may continue with the flight training.

Lesson 2: This lesson will be the first introduction to SR22 covering normal operating procedures, introduction to avionics, steep turns, and stalls

Lesson 3: Operator will be asked to identify and correct systems and system malfunctions in a scenario based format. These scenarios will be based on the certificate and ratings held by the pilot.

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Lesson 4:	Operator will review items learned on lesson 2 and develop increased proficiency in airport operations. Takeoff, landings, go around and stabilized approach procedures will be the major emphasis.
Lesson 5:	Pilot will be introduced to abnormal and emergency procedures in flight. He will also demonstrate automation competency in a cirrus aircraft while conducting a cross country scenario. Avionics interface, autopilot operation and Garmin GNS 430 will be the major emphasis.
Lesson 6:	Pilot will review abnormal and emergency procedures and demonstrate an increased proficiency in conducting a cross country based scenario.
Lesson 7:	This lesson is the final evaluation flight that will take into account previously learned material. Conducted on a planned cross country scenario.
Note:	Biannual flight review and/or instrument proficiency check training can only be conducted after satisfactorily completing the transition course
Lesson 8	Optional biennial flight review in which an additional half day of training will be required to cover the required ground material.
Lesson 9	Optional instrument proficiency check in which an additional day of training will be needed to cover the required ground and flight lessons.

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Section 12 Standard Operating Procedures

Introduction

This section describes the Standard Operating Procedures (SOP's) recommended when operating the Cirrus SR22. These procedures serve as a framework for aircraft management and pilot decision making. The utilization of a standard set of procedures works to enhance the situational awareness of the flight crew, in both single pilot and crew situations. Adhering to these procedures allows the pilot to take full advantage of all of the aircrafts capabilities while maintaining a high level of safety.

Checklists

SOP's are heavily dependent on the effective use of checklists. When used properly, checklists serve several functions. 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.

Classification of Checklists

All checklist procedures can be assigned one of three classifications:

Normal Procedures:	These procedures used during normal flight operations.
Abnormal Procedures:	Procedures used in response to system failures and malfunctions that while not immediately threatening may effect safety of flight if not addressed

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

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

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Checklist Completion

Normal Procedures

Normal procedure checklists can be appropriately completed by using one of the following two methods. The appropriate method of checklist completion for each normal procedure is indicated in this section.

Do-List:	A do-list is a checklist which is executed in a conventional manner of 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.
Flow Pattern:	A flow pattern takes a do and verify approach to checklist completion. The term “flow pattern” refers to the path through the cockpit the pilot moves along during the execution of the checklist. The items and their condition are memorized and executed without reference to the written checklist. Following completion of the flow pattern the checklist is immediately referenced to ensure procedure completion. **UNDER NO CIRCUMSTANCE SHOULD A NORMAL PROCEDURE BE COMPLETED SOLELY FROM MEMORY!!!** When used properly, flow patterns allow timely configuration of the aircraft for the appropriate flight condition. Flow patterns are used when procedure sequence and condition is not critical and there is an operational advantage to executing the checklist items and verifying with the written checklist when cockpit workload permits.

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Abnormal Procedures

Checklists which do not contain memory items are abnormal procedures. Completion of abnormal procedures should be done using the do-list method. The checklist should be directly referred to and each item should be completed in the order prescribed.

Emergency Procedures

Checklists which contain memory items are emergency procedures. Execution of these procedures are considered time critical and are done without reference to a checklist. The checklist should only be referenced during an emergency if time permits.

Single Pilot Operations

The majority of Cirrus aircraft operations are conducted single pilot. The workload associated with configuring and monitoring avionics, communicating with air traffic control, and decision making can be overwhelming at times. The following procedures have been adapted from cockpit procedures common to dual pilot transport category aircraft for use when operating as the sole crew member.

The procedures used aboard more advanced aircraft are typically required by regulation to be complied with. As a Part 91 operator a great deal of latitude exists for how you manage your cockpit and operate your aircraft. To ensure the highest levels of safety it is strongly recommended that these single pilot operating procedures be incorporated into how you operate your aircraft.

Cockpit Organization

The task of cockpit organization is a task which is constantly recurring in all phases of flight, from the preflight to the postflight. The following are guidelines to create an organized and efficient cockpit.

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Aeronautical Charts

The appropriate flight data should be organized in a way that will allow immediate access to the chart pertaining to the current flight condition, and also to any charts that may be needed should the need arise to proceed via alternate routing or to an alternate destination.

Users of electronic flight data systems should ensure that the chart data is current for the flight to be conducted and that the appropriate charts can be called from the database. Users of such systems should ensure that power will be available to the device for the duration of the flight. Battery power should only be used in the event of an onboard system malfunction.

Radio Tuning and Communication

To avoid confusion in flight with regard to radio frequencies the following frequency configuration should be used:

Comm 1: Airborne air traffic control frequencies (Tower, Approach/Departure, Center)

VLOC 1: Primary ground based navigation (ILS, Approach Final Course)

Comm 2: Ground air traffic control frequencies and supplemental communications (Clearance Delivery, Ground, Flight Service, Air to Air)

VLOC 2: Secondary ground based navigation (Missed Approach, Intersection Cross-radial)

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Autopilot

The use of any automatic flight control system should not be substituted for pilot proficiency and currency. It is, however, a tool available to manage the workload associated with normal flight operations. When using the autopilot it is important to monitor the aircraft for any abnormal conditions which may develop and to ensure that the limitations associated with the operation of the automatic flight control system are observed.

Briefings

Briefings are a conscious situational review of the operation which is about to be conducted and are also a planning tool for abnormalities and emergencies which may occur during high workload and time critical periods in the cockpit.

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Flight Profile

Before Start ***Do List***

Engine Start ***Do List***

- Select the starting procedure appropriate to the current conditions (normal, hot, flooded)

Before Taxi ***Flow Pattern***

- Before Taxi Checklist complete
- Obtain appropriate ATC clearance
- Airport diagram visible

Taxi ***Flow Pattern***

- Instrument check
- Taxi checklist complete

Before Takeoff ***Flow Pattern***

- Before Takeoff Checklist complete (activation of Transponder and Landing Light should be delayed until cleared for takeoff. Strobe Light activation should also be delayed until cleared for takeoff if operating at night.)
- Takeoff Briefing: The takeoff briefing should include some of the following elements:
    - Runway length
    - Runway conditions
    - Takeoff distance
    - Initial heading
    - Initial altitude
    - Departure procedures
        - Instrument DP's
        - Noise Abatement
    - Emergency procedures

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Sample Takeoff Briefing: "We're holding short of runway ___ for takeoff. The available takeoff distance for this runway is _____ and we have a takeoff distance of _____. Initial heading and altitude as assigned by ATC. In the event of a loss of directional control, annunciator illumination, engine failure or system malfunction prior to V_R I will abort the takeoff. If an engine failure occurs after V_R we will land the airplane straight ahead, maneuvering around obstacles as necessary. Any other malfunction after V_R we will plan to return to runway ___ for a visual / instrument approach."

The potential for an aborted takeoff should be considered before every takeoff, and the actions taken decided prior to beginning the takeoff roll.

Takeoff ***Flow Pattern***

- Verify
  - Final is clear
  - Standby items from Before Takeoff Checklist are completed
  - Runway is clear
- Align airplane with centerline
- Apply power for takeoff
- 40 knots – Airspeed crosscheck
- Accelerate to V_R
- Rotate
- Pitch for V_Y
- Continue V_Y climb to 1000 ft agl. (or other altitude as conditions dictate)

Climb ***Flow Pattern***

- 1000 ft agl – Complete Climb checklist
- Transition to cruise climb (120 knots) if desired

Cruise ***Flow Pattern***

- Top of climb – Complete cruise checklist

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Descent ***Flow Pattern***

Descent Planning: Planning for the descent should be completed prior to the top of descent.

- Approach Briefing: The approach briefing should include some of the following elements:
    - Standard Terminal Arrival Procedure (STAR)
    - Approach procedure
        - Type of procedure
        - Transition to final course (IAF or vectors)
        - Inbound course
        - Target airspeed
        - Flap setting
        - Stepdown fixes
        - Final approach fix
        - Missed Approach Point
        - DH/MDA Altitude
        - Missed approach procedure
    - Configuration of avionics
        - Nav source (ILS/VOR/GPS)
        - Display configuration
        - Autopilot usage during procedure
- Top of descent – Complete descent checklist
- Airspeed: as appropriate
- Power: Adjust MP as necessary to maintain appropriate airspeed.

Before Landing ***Flow Pattern***

- Visual approach: final descent to landing
    - Power set
    - Flaps set
    - Before Landing Checklist - complete
- Precision instrument approach (Glideslope Intercept)
    - Power – Set for approach speed
    - Flaps – Set for touchdown
    - Before Landing Checklist – complete

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

- Non-precision instrument approach – 2 NM from Final Approach Fix
    - Power – Set
    - Flaps – Set
    - Before Landing Checklist – complete

After Landing ***Flow Pattern***

- Clear of active runway – After Landing Checklist complete (no items on the after landing checklist should be attempted until the aircraft is clear of the runway)

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Maneuver Profiles – Normal Operations

Precision Instrument Approach (Full Procedure)

- Approaching Initial Approach Fix (approx. 5 NM)
    - Descent Checklist Complete
    - Airspeed: 110 knots
    - Power: 17” MP (approximately)
    - Autopilot
        - Lateral Mode: NAV or HDG, as appropriate
        - Vertical Mode: ALT, stepdown altitude preselected
- Crossing Initial Approach Fix (IAF)
    - Airspeed: 100 knots
    - Power: 15” MP (approximately)
    - Autopilot
        - Lateral Mode: NAV or HDG, as appropriate
        - Vertical Mode: ALT VS
- Procedure Turn Outbound
    - Airspeed: 100 knots
    - Power: 15” MP (approximately)
    - Autopilot
        - Lateral Mode: HDG, bug to outbound heading
        - Vertical Mode: ALT (ALT VS if continued descent required)
- Procedure Turn Inbound
    - Airspeed:100 knots
    - Power 15” MP (approximately)
    - Autopilot
        - Lateral Mode: HDG, but to inbound heading. NAV APPR armed
        - Vertical Mode: ALT, DH preselected

Glideslope Intercept (One dot high)

- Airspeed: 100 knots
- Power:10-12” MP (approximately)
- Flaps: 50%
- Autopilot
    - Lateral Mode: NAV APPR
    - Vertical Mode: ALT (monitor GS capture)

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Decision Height
    - If visual contact is established, continue to landing
        - Autopilot: Disconnect
        - Flaps: 100%
        - Airspeed: transition to 80 knots
    - If visual contact is not established, missed approach
        - Apply full power
        - Pitch for V_Y
        - Establish positive rate of climb
        - Flaps 0%
        - Balked Landing / Missed Approach Checklist complete

Precision Instrument Approach (Vectors)

- At start of vectors
    - Descent Checklist complete
    - Airspeed: 110 knots
    - Power: 17" MP (approximately)
    - Autopilot
        - Lateral Mode: HDG
        - Vertical Mode: ALT (ALT VS if altitude change is required)
- Base Vector
    - Airspeed: 100 knots
    - Power: 15" MP (approximately)
    - Autopilot
        - Lateral Mode: HDG
        - Vertical Mode: ALT, DH preselected
- Intercept Vector
    - Airspeed: 100 knots
    - Power: 15" MP (approximately)
    - Autopilot
        - Lateral Mode: HDG, NAV APPR armed
        - Vertical Mode: ALT

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Glideslope Intercept (One dot high)
    - Airspeed: 100 knots
    - Power 10-12” MP (approximately)
    - Flaps: 50%
    - Autopilot
        - Lateral Mode: NAV APPR
        - Vertical Mode: GS (monitor transition from GS to ALT)
- Decision Height
    - If visual contact is established, continue to landing
        - Autopilot: Disconnect
        - Flaps: 100%
        - Airspeed: Transition to 80 knots
    - If visual contact is not established, missed approach
        - Apply full power
        - Pitch for V_Y
        - Establish positive rate of climb
        - Flaps: 0%
        - Balked Landing / Missed Approach Checklist complete

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Non-precision Instrument Approach (Full Procedure)

- Approaching Initial Approach Fix (approx. 5 NM)
    - Decent Checklist complete
    - Airspeed: 110 knots
    - Power: 17" MP (approximately)
    - Autopilot
        - Lateral Mode: NAV or HDG, as appropriate
        - Vertical Mode: ALT, stepdown altitude preselected
- At Initial Approach Fix (IAF)
    - Airspeed: 110 knots
    - Power: 15" MP (approximately)
    - Autopilot
        - Lateral Mode: NAV (Set HDG bug to outbound procedure turn heading)
        - Vertical Mode: ALT VS
- Beginning Procedure Turn Outbound
    - Airspeed: 110 knots
    - Power: 15" MP (approximately)
    - Autopilot
        - Lateral Mode: HDG

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Vertical Mode: ALT (ALT VS if continued descent is necessary)

- Beginning Procedure Turn Inbound
  - Airspeed: 110 knots
  - Power: 15” MP (approximately)
  - Autopilot
    - Lateral Mode: HDG, set bug to inbound course. NAV APPR armed
    - Vertical Mode: ALT
      - MDA preselected
- Approaching Final Approach Fix (approx. 2NM)
  - Airspeed: 100 knots
  - Power: 10-12” MP (approximately)
  - Flaps: 50%
  - Autopilot
    - Lateral Mode: NAV APPR
    - Vertical Mode: ALT
  - Before Landing Checklist
- Final Approach Fix
  - Airspeed: 100 knots
  - Power: 10-12” MP (approximately)
  - Flaps: 50%
  - Autopilot
    - Lateral Mode: NAV APPR
    - Vertical Mode: ALT VS (Set VS bug as appropriate)
- Approaching MDA
  - Airspeed: 100 knots
  - Power: 17” MP (approximately)
  - Autopilot
    - Lateral Mode: NAV APPR
    - Vertical Mode: ALT

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

- Missed Approach Point
    - If visual contact is established, continue to landing
        - Autopilot: Disconnect
        - Flaps: 100%
        - Airspeed: Transition to 80 knots
    - If visual contact is not established, execute missed approach
        - Apply full power
        - Pitch for V_Y
        - Establish positive rate of climb
        - Flaps: 0%
        - Balked Landing / Missed Approach Checklist complete

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Non-precision Instrument Approach (Vectors)

- At start of vectors
    - Descent Checklist complete
    - Airspeed: 120 knots
    - Power: 17” MP (approximately)
    - Autopilot
        - Lateral Mode: HDG
        - Vertical Mode: ALT (ALT VS if altitude change is required)
- Base Vector
    - Airspeed: 110 knots
    - Power: 15” MP (approximately)
    - Autopilot
        - Lateral Mode: HDG
        - Vertical Mode: ALT (ALT VS is altitude change is required)
- Intercept Vector
    - Airspeed: 110 knots
    - Power: 15” MP (approximately)
    - Autopilot
        - Lateral Mode: HDG, NAV APPR armed
        - Vertical Mode: ALT
            - MDA preselected
- Approaching Final Approach Fix (Approx. 2 NM)
    - Airspeed: 110 knots
    - Power: 15” MP (approximately)
    - Flaps: 50%
    - Autopilot
        - Lateral Mode: NAV APPR
        - Vertical Mode: ALT
- Final Approach Fix
    - Airspeed: 110 knots
    - Power: 11” MP (approximately)
    - Flaps: 50%
    - Autopilot
        - Lateral Mode: NAV APPR
        - Vertical Mode: ALT VS

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Approaching MDA
    - Airspeed: 110 knots
    - Power: 15” MP (approximately)
    - Autopilot
        - Lateral Mode: NAV APPR
        - Vertical Mode: ALT
- Missed Approach Point
    - If visual contact is established, continue to landing
        - Autopilot: Disconnect
        - Flaps: 100%
        - Airspeed: Transition to 80 knots
    - If visual contact is not established, execute missed approach
        - Apply full power
        - Pitch for V_Y
        - Establish positive rate of climb
        - Flaps: 0%
        - Balked Landing / Missed Approach Checklist complete

Circling Approach

- From Missed Approach Point
    - If visual contact is established, begin circle to landing
        - Airspeed: 100 knots
        - Power: 17” MP (approximately)
        - Autopilot
            - Lateral Mode: HDG, bug as desired to maneuver
            - Vertical Mode: ALT
    - If visual contact is lost during maneuver, execute missed approach
        - Autopilot: Disconnect

- At final descent to landing
    - Autopilot: Disconnect
    - Airspeed: Transition to 80 knots

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Holding

- 5 Miles from Holding Fix
    - Airspeed: 120 knots
    - Power: 17” (approximately)

VFR Traffic Pattern

- Prior to midfield downwind – Before Landing Checklist complete
- Downwind
    - Airspeed: 100 knots
    - Power: 15” MP (approximately)
- Abeam Touchdown Zone
    - Airspeed: 100 knots
    - Power: 11’ MP (approximately)
    - Flaps: 50%
- Base
    - Airspeed: 90 knots
    - Power: 11” MP (approximately)
    - Flaps: 100%
- Final
    - Airspeed: 80 knots
    - Power: 11” MP (approximately)

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Maneuver Profiles – Certification Maneuvers

Power On Stalls

Minimum Altitude: 1,500 AGL

- Execute clearing turns
- Power: 11" MP (approximately)
- Flaps: 0% or 50%, as desired
- Airspeed: Slow to V_R
- Bank Angle: 20° maximum, as desired
- Apply takeoff power
- Increase pitch angle to induce stall (approximately 25° pitch attitude)
- At first indication of the stall, simultaneously
    - Pitch nose to the horizon
    - Verify full power
    - Accelerate to V_Y
    - At positive rate of climb – Flaps 0%
- Resume cruise flight

Power Off Stalls

Minimum Altitude: 1,500 AGL

- Execute clearing turns
- Power: 11" MP (approximately)
- Flaps: 100%
- Airspeed: Slow to final approach speed (80 knots)
- Bank Angle: 20° maximum, as desired
- Establish descent at 500 fpm
- Power: Idle
- Increase pitch angle to induce stall
- At first indication of the stall, simultaneously
    - Pitch nose to the horizon
    - Apply full power
    - Flaps: 50%
    - Accelerate to V
    - At positive rate of climb – Flaps 0%
- Resume cruise flight

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Minimum Control Airspeed

Minimum Altitude: 1,500 AGL

- Execute clearing turns
- Flaps: As desired
- Airspeed: Such that any increase in angle of attack will result in a stall

Steep Turns

Minimum Altitude: 1,500 AGL

- Execute clearing turns
- Airspeed: 130 knots
- Power: 20” MP (approximately)
- Maneuver entry
    - Add 1-2” MP to maintain altitude
- Maneuver execution
    - Target pitch attitude: 2.5°
    - Maximum pitch up correction: 5°
    - Maximum pitch down correction: 0°
- Maneuver exit
    - Power: 20” MP (approximately)
- Resume cruise flight

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Intentionally Left Blank

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Section 13 Operational Guidelines

Introduction

This section contains recommended minimum flight conditions and conditional considerations for Cirrus operators. These numbers are derived from the policies and procedures used by both Cirrus Flight Operations and UND Aerospace – Duluth Flight Training Center. These guidelines are advisory only; pilot in command is the final authority to the operation of the aircraft.

Pilot Minimums

Level 1 – Category A Conditions

- Professional pilot, commercial with instrument or ATP
- More than 100 hours in make and model
- Minimum 20 hours actual instrument experience and Current

Level 2 – Category B Conditions

- Professional pilot, commercial with instrument or ATP
- Less than 100 hours in make and model
- Private Pilot, Instrument rated and Current : more than 100 hours in make and model Minimum 10 hours actual instrument experience

Level 3 – Category C Conditions

- Private Pilot, Instrument rated and Current
- less than 100 hours in make and model

Level 4 – Category D Conditions

- Private Pilot

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Operating Categories

Category A:

- Ceilings: Published procedure minimums
- Visibility: Published procedure minimums
- Winds
    - Maximum winds: 35 knots
    - Maximum crosswind: Maximum demonstrated crosswind component
- Runway Length: 2.5 times computed takeoff or landing distance

Category B:

- Ceilings: No less than 500 feet or FAR minimums
- Visibility: No less than 1 miles
- Winds
    - Maximum winds: 25 knots
    - Maximum crosswind: 75% of demonstrated crosswind component
- Runway Length: 2.5 times computed takeoff or landing distance

Category C:

- Ceilings: No less than 1000 ft
- Visibility: No less than 3 miles
- Winds
    - Maximum winds: 20 knots
    - Maximum crosswind: 50% of demonstrated crosswind component
    - Runway Length: 2.5 times computed takeoff or landing distance

Category D:

- Ceilings: Better than 3000 feet
- Visibility: Better than 5 miles
- Winds
    - Maximum winds: 20 knots
    - Maximum crosswind: 50% of demonstrated crosswind component
- Runway Length: 2.5 times the computed takeoff or landing distance

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Minimums Worksheet

Using the above guidelines, the following worksheet should be used to formulate a comfortable set of personal minimums. These minimums should be numerical values that can be practically applied to flight operations.

	Day VFR	Night VFR	Day IFR	Night IFR
Ceiling				
Visibility				
Wind Condition				
Runway Length /Width				
Runway Condition				
Rest Period				
Fuel Reserves				
Other				

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740

Intentionally Left Blank

The UND Aerospace Foundation, Grand Forks, ND 58202
701-777-4740