Training Schedule

The ∞ symbol indicates that the GND training is tied to the associated FLT. These GND lessons should be completed prior to/with the associated FLT.

STAGE 1		
GND 1: Flight Basics		FLT 1: Intro to Flight
GND 2: Systems & Instruments		FLT 2: Build on the Basics
GND 3: Local Procedures		FLT 3: Slow Flight
GND 4: Scanning & Collision Avoidance		FLT 4: Stalls
GND 5: Aerodynamics		FLT 5: Basic Instrument Flight*
GND 6: Performance		FLT 6: Maneuvers
GND 7: FARs, Pubs & Airworthiness		FLT 7: More Maneuvers
		FLT 8: Emergency Procedures*
		FLT 9: Solo Prep
		FLT 10: A Little More Solo Prep
GND 8: Pre-Solo Test & Review	∞	FLT 11: Solo!
GND 9: Stage 1 Knowledge Review	∞	FLT 12: Stage Check
STAGE 2A & 2B		
		FLT 13: Solo – Maneuvers & Landings
GND 10: Airspace & ATC		FLT 14: Short-Fields
GND 11: Weather & Weather Services		FLT 15: Soft-Fields
		FLT 16: Solo – Maneuvers & Landings
GND 12: Navigation	∞	FLT 17: Basic Navigation
		FLT 18: Solo – Maneuvers & Landings
GND 13: XC Flight Planning & ADM	∞	FLT 19: Dual Cross Country
GND 14: Aeromedical Factors & Night	∞	FLT 20: Night
		FLT 21: Dual Night Cross Country
		FLT 22: Solo Cross-Country
		FLT 23: Maneuvers Review
		FLT 24: Long Solo Cross Country
GND 16: Stage 2 Knowledge Review	∞	FLT 25: Stage Check
STAGE 3		
		FLT 26: Practical Test Prep
		FLT 27: Solo Prep
		FLT 28: A Little More Practical Test Prep
GND 17: Stage 3 Knowledge Review	∞	FLT 29: Stage Check

PART 61 TRAINING HOURS

Below are the hour breakdowns that meet the FAR Part 61 minimums. A more detailed flight by flight breakdown can be found (and edited) in the Excel document. Ground time includes estimated time for the preflight and postflight briefings. The 35 Aeronautical Knowledge hours cover the topics required in FAR 61.105 and the Part 141 Appendix B 3(b).

DUAL	SOLO	TOTAL	DUAL XC	SOLO XC	NIGHT	INSTR	FTD	GROUND	AERO KNOWLEDGE
30	10	40	3.2	5	3	3	2.6	21.7	35

- Part 141 requires 35 hours of training on the Aeronautical Knowledge areas. There are no minimum training hours required under Part 61. Adjust as necessary.

Stage 1: Basics through Solo

OVERVIEW
In stage 1, the learner progresses through basic airplane control, maneuvers, and takeoffs and landings, as well as ground instruction in preparation for their first solo.

NOTES
Other than GND 8 & 9, which are tied to the solo flight and stage check, all other GND training can be moved as desired. All GND lessons should be completed prior to GND 8.

TRAINING SCHEDULE		
GND 1: Flight Controls & Aerodynamics		FLT 1: Intro to Flight
GND 2: Systems & Instruments		FLT 2: Build on the Basics
GND 3: Local Procedures		FLT 3: Slow Flight
GND 4: Scanning & Collision Avoidance		FLT 4: Stalls
GND 5: Weight & Balance		FLT 5: Basic Instrument Flight
GND 6: Performance		FLT 6: Maneuvers
GND 7: FARs, Pubs & Airworthiness		FLT 7: More Maneuvers
		FLT 8: Emergency Procedures
		FLT 9: Solo Prep
		FLT 10: A Little More Solo Prep
GND 8: Pre-Solo Test & Review	∞	FLT 11: Solo!
GND 9: Stage 1 Knowledge Review	∞	FLT 12: Stage Check

LESSON	DUAL	SOLO	XC	NIGHT	INST	TOTAL
FLT 1: Intro to Flight	1.0					1.0
FLT 2: Build on the Basics	1.0					1.0
FLT 3: Slow Flight	1.2					1.2
FLT 4: Stalls	1.2					1.2
FLT 5: Basic Instrument Flight	1.3				0.3	1.3
FLT 6: Maneuvers	1.3					1.3
FLT 7: More Maneuvers	1.3					1.3
FLT 8: Emergency Procedures	1.3				0.2	1.3
FLT 9: Solo Prep	1.3					1.3
FLT 10: More Solo Prep	1.3				0.3	1.3
FLT 11: Solo!	0.8	0.6				1.4
FLT 12: Stage Check	1.3				0.3	1.3
TOTALS	14.3	0.6	-	-	1.1	14.9

FAR REQUIREMENTS:
- 61.87(b) – Aeronautical Knowledge / Pre-solo knowledge test
- 61.87(d) – Pre-Solo Flight Training Maneuvers & Procedures
- 61.109(a)(3) – 3 hours flight training by reference to instruments
- 61.109(a)(5)(iii) – 3 solo, full stop takeoffs & landings

COMPLETION STANDARDS
All training is completed. The learner completes and passes the pre-solo test and the stage 1 knowledge test. The learner progresses to maintain ± 200', 20°, and 20 knots.

GND 5: Aerodynamics

TIME: 2.0 hours

INSTRUCTOR REFERENCES

- CFI Lesson Plans
  - II.D. Principles of Flight
  - II.D. Forces of Flight & Maneuvers

LEARNER REFERENCES

- Pilot's Handbook of Aeronautical Knowledge
  - Ch. 4: Principles of Flight
  - Ch. 5: Aerodynamics of Flight (pgs. 8-44)
- Basic Aerodynamics (thebackseatpilot.com)
- Private Pilot ACS Review
  - I.F. Perf & Limitations
    - K4. Aerodynamics

OVERVIEW

This lesson builds off the basic forces of flight information described in GND 1 and provides the learner with a more in-depth understanding of the principles and forces of flight.

NOTES

Planned to be completed with FLT 5: Basic Instrument Flight

There are two lessons titled II.D. in the CFI lesson plans. Principles of Flight is required by the CFI PTS, while Forces of Flight and Maneuvers is supplemental (although particularly important) information. Both lessons are used here.

PLAN OF ACTION

1. Principles of Flight (II.D.)
   A. Forces of Flight (review as necessary)
   B. Airfoil Design
   C. Stability and Controllability
   D. Left Turning Tendencies
   E. Load Factors in Airplane Design
   F. Wingtip Vortices
2. Forces of Flight and Maneuvers (II.D.)
   A. Ground Effect
   B. Climbs, Descents, Turns
   C. AOA and Stalls
3. Design Characteristics
   A. Ties the above information together

OBJECTIVE / COMPLETION STANDARDS

The learner gains an understanding of how an airplane flies and the forces associated with flight, in addition to aircraft design factors and considerations, and can answer review questions on the topics discussed.

FLT 4: Stalls

DUAL	SOLO	XC	NIGHT	INSTR	GND
1.2	-	-	-	-	1.2

REFERENCES

- VII.N. Go Around/Rejected Landing
- X.C. Power-Off Stalls
- X.D. Power-On Stalls
- X.I. Spin Awareness & Spins

OVERVIEW

The learner handles all normal operations, including basic/scripted radio communication. Continue practicing slow flight and then demo/do power-on stalls, and power-off stalls. Returning to the pattern, demo/do a pattern to a go-around, ending with a normal landing by the instructor (learner follows on controls).

NOTES

Planned to be completed with GND 4: Scanning & Collision Avoidance

PLAN OF ACTION

Ground Discussion

- Power-on & off stalls (X.C. & D)
- Spin awareness, entry, and recovery (X.I.)
- Go-around procedures (VII.N.)
- Review local radio communication
- Flight overview
  - Airport diagram, sectional, maneuvers
- Expectations & responsibilities (learner & instructor)
- Risk Management – PAVE Checklist

Pre-Flight

- Weather briefing, NOTAMs, TFRs, etc.
- Performance / Weight & balance (completed by CFI)
- Required documents / inspections
- Pre-flight inspection
- Engine start
- Taxi / Runup
- Before takeoff checklist

Flight

- Normal / Crosswind takeoff
- Climb procedures & checklists
- Scanning, Clearing turns
- Review maneuvers, as required
- Slow flight
  - Straight & level
  - Climbs, descents, turns
- Power-off stalls
- Power-on stalls
- Pattern
  - Go-around (demo/do)
  - Normal approach and landing (observe)

Post-Flight

- After landing checklist
- Taxi
- Parking & Engine shutdown
- Post flight / Securing

Debrief

- Review the flight
- What went well?
- What can be improved?
- What's next

OBJECTIVE / COMPLETION STANDARDS

The learner shows progress in procedures and basic airplane control and becomes more proficient in flight procedures (pre-flight, checklists, radios, takeoffs, etc.), and slow flight while obtaining a foundation for stall recoveries. Aim for ± 200', 20° heading, 20 knots.

FLT 14: Short-Fields

DUAL	SOLO	XC	NIGHT	INSTR	GND
1.3	-	-	-	-	1.0

REFERENCES

- VII.E. Short-Field Takeoff and Maximum Performance Climb
- VII.F. Short-Field Approach and Landing

OVERVIEW

Review and discuss short-field procedures. In the airplane, demo a short-field takeoff, climb, and landing in the pattern. Have the learner perform a short-field takeoff and climb enroute to the practice area. Review maneuvers as required and return to the pattern for a short-field landing, followed by additional patterns.

NOTES

Planned to be completed with GND 10: Airspace & ATC
If desired, you could also start with a couple short-field patterns for the learner prior to the practice area

PLAN OF ACTION

Ground Discussion

- Short-field takeoff & landing procedures (VII.E. & VII.F.)
- Flight overview
  - Airport diagram, sectional, maneuvers
- Expectations & responsibilities (learner & instructor)
- Risk Management – PAVE Checklist

Pre-Flight

- Weather briefing, NOTAMs, TFRs, etc.
- Performance / Weight & balance
- Required documents / inspections
- Pre-flight inspection
- Engine start
- Taxi / Runup

Flight

- Short-field pattern (CFI demo)
- Short-field takeoff
- Short-field climb procedures
- Scanning, Clearing turns
- Slow flight
- Power-on or power-off stalls (switch next flight)
- Steep turns
- Engine failure / Emergency procedures
- S-Turns
- Traffic Patterns
  - Short-field takeoffs & landings
  - Go-arounds

Post-Flight

- After landing checklist
- Taxi
- Parking & Engine shutdown
- Post flight / Securing

Debrief

- Review the flight
- What went well?
- What can be improved?
- What's next

OBJECTIVE / COMPLETION STANDARDS

The learner can competently perform the short-field procedures with instructor guidance. Confidence and abilities continue to increase in prior maneuvers and procedures. Aim for ± 150', 15° heading, 15 knots (Emergency approach/Pattern: +10/-5 knots). If learner abilities allow it, challenge the learner, and require above these standards.

APPENDIX

Sample Pre-Solo Test

FARs

1. FAR 91.3 – When flying solo, who is directly responsible for, and the final authority as to, the operation of the aircraft?

2. FAR 91.103 – Each PIC shall, before beginning a flight, become familiar with all available information concerning that flight. For any flight, this includes runway lengths as well as what performance data?

3. FAR 91.113 – Who has the right-of-way over all other air traffic?

4. FAR 91.113 – Who has the right-of-way when two or more aircraft are approaching an airport for landing?
   A. The aircraft closest to the airport
   B. The lower aircraft
   C. The faster aircraft
   D. The slower aircraft

5. FAR 91.3 – True or False?
   In an in-flight emergency requiring immediate action, the PIC may deviate from any rule of this part to the extent required to meet that emergency.

6. FAR 61.89 – What are the visibility requirements for a student pilot?
   Day: _____ statute miles
   Night: _____ statute miles

7. FAR 61.89 – True or False?
   As long as the above visibility requirements are met, a student may pilot fly solo without visual reference to the ground (i.e., above a cloud deck).

8. FAR 61.89 – Do the FARs allow a student pilot acting as PIC to carry passengers?

9. FAR 91.151 – What are the fuel requirements for day VFR conditions?

10. FAR 91.125 – ATC Light Signals

Color & Type of Signal	On the Ground	In Flight
Steady Green		
Flashing Green		
Steady Red		
Flashing Red		
Flashing White		
Alternating Red & Green		

11. List the required aircraft inspections.
    A:
    V:
    1:
    A:
    T:
    E:

12. List the required aircraft documents.
    A:
    R:
    R:
    O:
    W:

13. FAR 91.205 – List the day VFR required flight instruments (TOMATOFFLAAMES)

T:	F:
O:	F:
M:	L:
A:	A:
T:	A:
O:	M:
	E:
	S:

14. FAR 61.3 – What documents must you have in your possession to fly solo?

AIRSPACE RULES & PROCEDURES

15. Solo Airport – List the following information:

Runway(s)	_____	_____	_____	_____
Pattern Direction	_____	_____	_____	_____
Pattern Altitude	_____	_____	_____	_____
Pattern Entry Procedure	_____	_____	_____	_____

    Frequencies:

ATIS	_____
Ground	_____
Tower	_____
Approach/Departure	_____

16. What class of airspace is the solo airport, and what are the basic VFR weather minimums?
    Class of Airspace _____
    Visibility _____ statute miles
    Cloud Clearances: _____ ft. Above _____ ft. Below _____ft. Horizontal

17. Numeric runway designators (i.e., runway 14 or 32) are in relation to:
    A. Magnetic North
    B. True North

18. AIM 4-3-18 – True or False?
    A clearance must be obtained prior to crossing any *active* runway. Closed or inactive runways do not require an ATC clearance to cross.

19. What do the following transponder codes mean?
    1200: _____
    7500: _____
    7600: _____
    7700: _____

20. Briefly describe the procedures to enter the pattern and land at the solo airport in the case of radio failure/lost communications.

FLIGHT CHARACTERISTICS & LIMITATIONS

21. Aircraft performance is maximized when takeoffs and landings are performed:
    A. With the wind
    B. Into the wind
    C. Without wind
    D. Wind has no effect on performance

22.

	Airspeed	Definition
V_{SO}	_____	_____
V_S	_____	_____
V_R	_____	_____
V_X	_____	_____
V_Y	_____	_____
V_{LE}	_____	_____
V_{LO}	_____	_____
V_{FE}	_____	_____
V_A	_____	_____
V_{NO}	_____	_____
V_{NE}	_____	_____

23. Weights
    Max Ramp Weight: _____
    Max Takeoff Weight: _____
    Max Landing Weight: _____
    Max Zero Fuel Weight: _____
    Max Baggage Weight: _____

24. Fuel
    Approved Type(s): _____
    Color: _____
    Total Capacity: _____

Usable Capacity: _____

25. Oil
    Capacity: _____
    Minimum Capacity: _____

26. Briefly describe the go-around procedures.

27. Describe the engine failure procedures.
    Takeoff Roll:
    Takeoff Climb:
    Cruise:
    Best Glide Airspeed: _____

28. Calculate the CG for the planned solo flight.

29. Calculate performance for the solo flight based on the current conditions.
    Takeoff Distance: _____
    Landing Distance: _____

30. As published in the ACS, slow flight and stalls should be completed no lower than _____ ft AGL (ASEL).

Sample Pre-Solo Test Answers

FARs

1. FAR 91.3 – When flying solo, who is directly responsible for, and the final authority as to, the operation of the aircraft?
   The solo pilot, PIC

2. FAR 91.103 – Each PIC shall, before beginning a flight, become familiar with all available information concerning that flight. For any flight, this includes runway lengths as well as what performance data?
   Takeoff and landing distance information

3. FAR 91.113(c) – Who has the right-of-way over all other air traffic?
   An aircraft in distress

4. FAR 91.113(g) – Who has the right-of-way when two or more aircraft are approaching an airport for landing?
   B. The lower aircraft
   When two or more aircraft are approaching an airport for the purpose of landing, the aircraft at the lower altitude has the right-of-way, but it shall not take advantage of this rule to cut in front of another which is on final approach to land or to overtake that aircraft.

5. FAR 91.3 – TRUE
   In an in-flight emergency requiring immediate action, the pilot in command may deviate from any rule of this part to the extent required to meet that emergency.

6. FAR 61.89(a)(6) – What are the visibility requirements for a student pilot?
   Day: 3 statute miles
   Night: 5 statute miles

7. FAR 61.89(a)(7) – FALSE
   As long as the above visibility requirements are met, a student pilot may fly solo without visual reference to the ground (i.e., above a cloud deck)?
   FAR 61.89(a)(7): A student pilot may not act as PIC of an aircraft when the flight cannot be made with visual reference to the surface.

8. FAR 61.89(a)(1) – Do the FARs allow a student pilot acting as PIC to carry passengers?
   No

9. FAR 91.151 – What are the fuel requirements for day VFR conditions?
   Fly to the first point of intended landing and, assuming normal cruising speed, fly after that for at least 30 mins

10. FAR 91.125 – ATC Light Signals

Color & Type of Signal	On the Ground	In Flight
Steady Green	Cleared for takeoff	Cleared to land
Flashing Green	Cleared to taxi	Return for landing
Steady Red	Stop	Give way and continue circling
Flashing Red	Taxi clear of runway in use	Airport unsafe – do not land
Flashing White	Return to starting point on airport	N/A
Alternating Red & Green	Exercise extreme caution	Exercise extreme caution

11. List the required aircraft inspections.
    Annual
    VOR
    100 hour
    Altimeter/Pitot Static
    Transponder
    ELT

12. List the required aircraft documents.
    Airworthiness
    Registration
    Radio operator's license (if international)
    Operating limitations
    Weight and balance

13. FAR 91.205 – List the day VFR required flight instruments (TOMATOFFLAAMES)

Tachometer	Fuel gauge
Oil pressure gauge	Flotation gear
Manifold pressure gauge	Landing gear position indicator
Airspeed Indicator	Altimeter
Temperature gauge	Anti-Collision Lights
Oil temperature gauge	Magnetic Compass
	ELT
	Safety belts/shoulder harnesses

14. FAR 61.3 – As PIC, what documents must you have in your possession to fly solo?
    Student Pilot Certificate
    Medical Certificate (or driver's license, if applicable)
    Photo ID
    Logbook with solo endorsements

AIRSPACE RULES & PROCEDURES

15. Solo Airport – List the following information:

Runway(s)	_____	_____	_____	_____
Pattern Direction	_____	_____	_____	_____
Pattern Altitude	_____	_____	_____	_____
Pattern Entry Procedure	_____	_____	_____	_____

    Frequencies:

ATIS	_____
Ground	_____
Tower	_____
Approach/Departure	_____

16. What class of airspace is the solo airport, and what are the basic VFR weather minimums?
    Class of Airspace: C or D

Visibility: 3 statute miles
Cloud Clearances: 1,000 ft. Above 500 ft. Below 2,000' Horizontal

17. Numeric runway designators (i.e., runway 14 or 32) are in relation to:
    A. Magnetic North

18. AIM 4-3-18(a)(5) – FALSE
    A clearance must be obtained prior to crossing any *active* runway. Closed or inactive runways do not require an ATC clearance.
    AIM 4-3-18: A clearance must be obtained prior to crossing any runway. ATC will issue an explicit clearance for all runway crossings.

19. What do the following transponder codes mean?
    1200: VFR
    7500: Hijack
    7600: Lost Comm
    7700: Emergency

20. Briefly describe the procedures to land at the solo airport in the case of radio failure/lost communications.
    Squawk 7600
    Remain outside of the airspace until the direction and flow of traffic is determined
    Enter the pattern, clearing aggressively
    Watch for and acknowledge light signals

FLIGHT CHARACTERISTICS & LIMITATIONS

21. Aircraft performance is maximized when takeoffs and landings are performed:
    B. Into the wind

22.

	Airspeed	Definition
V_{SO}	_____	_____
V_S	_____	_____
V_R	_____	_____
V_X	_____	_____
V_Y	_____	_____
V_{LE}	_____	_____
V_{LO}	_____	_____
V_{FE}	_____	_____
V_A	_____	_____
V_{NO}	_____	_____
V_{NE}	_____	_____

23. Weights
    Max Ramp Weight: _____
    Max Takeoff Weight: _____
    Max Landing Weight: _____
    Max Zero Fuel Weight: _____
    Max Baggage Weight: _____

24. Fuel
    Approved Type: _____
    Color: _____

Total Capacity: _____
Usable Capacity: _____

25. Oil
    Capacity: _____
    Minimum Capacity: _____

26. Describe the go-around procedures.
    Generic Procedures: Max power
    Pitch for climb speed
    Clean up flaps on schedule

27. Describe the engine failure procedures.
    Takeoff Roll: Maintain directional control, stop straight ahead
    Takeoff Climb: Pitch for best glide speed, land straight ahead
    Cruise: Aviate/Airspeed, Best Landing Spot, Checklists (restart/troubleshoot), Emergency landing
    Best Glide Airspeed:

28. Calculate the CG for the planned solo flight.

29. Calculate performance for the solo flight based on the current conditions.
    Takeoff Distance: _____
    Landing Distance: _____

30. As published in the ACS, slow flight, and stalls should be completed no lower than _____ ft AGL (ASEL).
    1,500’ AGL

Solo Requirements

FAR 61.87

KNOWLEDGE TEST

- Parts 61 & 91
- Airspace rules & procedures
- Flight characteristics & limitations
- Administered by the CFI (Review all incorrect answers before authorizing solo flight)

FLIGHT TRAINING

- Flight preparation procedures
- Taxiing/surface operations
- Takeoffs and landings
- Straight-and-level flight & turns
- Climbs/climbing turns
- Descents/descending turns (high & low drag configurations)
- Traffic patterns
- Collision avoidance, wind shear, wake turbulence avoidance
- Flight at various speeds (cruise to slow flight)
- Stalls and stall recoveries (various attitudes & power combinations)
- Emergency procedures & equipment malfunctions
- Ground reference maneuvers
- Approach to landing with simulated engine malfunctions
- Slips to a landing
- Go-arounds

Private Pilot Eligibility Requirements

FAR 61.103

APPLICANT

- At least 17 years of age
- Read, speak, write, and understand the English language
- Hold a U.S. student pilot, sport pilot, or recreational pilot certificate

KNOWLEDGE

- Knowledge training (home or with instructor)
- Instructor endorsement
- Pass the Knowledge Test

FLIGHT

- FAR 61.107 Training requirements
- Aeronautical experience requirements
- Instructor endorsement

Aeronautical Experience & Training Requirements

FAR 61.109(a) **40 HOURS TOTAL TIME**

- 20 hours flight training
- 10 hours solo

20 HOURS FLIGHT TRAINING

- 3 hours cross-country
- 3 hours night
  - Cross-country > 100 nm
  - 10 full stop takeoffs and landings
- 3 hours instrument
- 3 hours in preparation for the practical test

10 HOURS SOLO

- 3 takeoffs and landings to a full stop at a controlled airport
- 5 hours cross-country
  - Cross-country > 150 nm, 3 full stop landings at 3 points, and one segment > 50 nm

FAR 61.107(b) **Ground & Flight Training Requirements**

- Preflight preparation
- Preflight procedures
- Airport base operations
- Takeoffs, landings, and go-arounds
- Performance maneuvers
- Ground reference maneuvers
- Navigation
- Slow flight and stalls
- Basic instrument maneuvers
- Emergency operations
- Night operations (exception: FAR 61.110)
- Postflight procedures

Aeronautical Knowledge

REQUIRED KNOWLEDGE AREAS (FAR 61.105)	**LESSON**
FARs relating to private privileges, limitations, and flight operations	GND 7: FARS & Publications
Accident reporting requirements of the NTSB	GND 7: FARS & Publications
Use of the applicable portions of the AIM and FAA advisory circulars	GND 7: FARS & Publications
Use of charts for pilotage, dead reckoning, and navigation systems	GND 12: Navigation GND 13: Cross Country Flight Planning
Radio communication procedures	GND 3: Local Procedures GND 10: Airspace & ATC
Recognition of critical weather situations from the ground and in flight, windshear avoidance, and the procurement and use of aeronautical weather reports and forecasts	GND 3: Local Procedures GND 10: Airspace & ATC GND 11: Weather & Weather Services
Safe and efficient operation of aircraft, including collision avoidance, and recognition and avoidance of wake turbulence	GND 3: Local Procedures GND 4: Scanning & Collision Avoidance GND 10: Airspace & ATC
Effects of density altitude on takeoff and climb performance	GND 6: Performance
Weight and balance computations	GND 5: Weight and Balance
Principles of aerodynamics, powerplants, and aircraft systems	GND 1: Flt Controls & Aerodynamics GND 2: Systems & Instruments
Stall awareness, spin entry, spins, and spin recovery techniques	FLT 4: Stalls
Aeronautical decision making and judgment	GND 15: Aeronautical Decision Making
How to obtain information on runway lengths at airports of intended use, data on takeoff and landing distances, weather reports and forecasts, and fuel requirements	GND 6: Performance GND 11: Weather & Weather Services GND 13: Cross Country Flight Planning
How to plan for alternatives if the planned flight cannot be completed or delays are encountered	GND 13: Cross Country Flight Planning