Alaskan Off Airport Operations Guide
Training Syllabus

Foreword: This syllabus is designed to train pilots in best practices associated with airplane operations discussed in the Alaskan Off Airport Operations Guide. Pilots new to off airport operations will not likely achieve maximum airplane performance. That takes hours of practice. Successful completion of this syllabus will result in documented and consistent individual performance in short and obstructed field operations.

The time required to complete each stage is dependent on achieving performance equal to or better than the completion standards. Suggested completion times are predicated on proficient and current pilots with several years of flying experience. Other pilots may require more time to achieve proficiency.

Instructors and their students who train according to this syllabus must assess the risk associated with each training evolution described herein and be certain they are equal to the challenges those evolutions present. All the operations discussed in this syllabus should be taught and practiced at an airport runway - preferably one with a grass or gravel runway - before attempting those operations at off-airport sites.

Stage 1

Operational Risk Analysis and Pilot/Aircraft Performance Documentation

Lesson 1 Objectives

Pilots will assess the capabilities of their aircraft and themselves by completing an Operational Risk Analysis that will serve as a baseline for Safety Risk Management during the course of instruction. The Operational Risk Analysis will asses:

- Pilot Capabilities & Experience
- Aircraft Capabilities
- Operational Environment
- Survival and Emergency Communications Equipment

1.5 Hours Ground

- Pilot History
- Aircraft performance charts
- Takeoff, climb, and landing performance calculations
  - Wind, density altitude, aircraft weight, obstacle clearance, runway composition, condition & slope compensations
- Operations area discussion
- Survival and Emergency Communications Equipment
- Flight Plan

Once the baseline Operational Analysis is complete, student and instructor will validate that analysis by documenting performance at an unpaved runway.

Note: The flight operations for this lesson will utilize an unpaved runway of documented dimensions. Ideally the runway will be marked at 100 foot intervals for at least the first 1500 feet. Performance should be measured at maximum anticipated operating weight. This includes mission fuel, survival equipment, cargo and, additional passengers or equivalent weight; for aircraft capable of carrying more than one passenger.

1.5 - 2 Hours Flight

Short Field Takeoff and Landing Practice
- Light load
- Heavy load

Performance Documentation
- Light load
- Heavy load

.5 Hour Post Flight

Pilot and Instructor will compare validation flight results with predicted performance.

Completion Standards:

Private Pilot PTS Standards for Short Field Takeoff and Landing performance.

Takeoff
- Configuration per manufacturer's recommendation
- Apply and maintain crosswind correction
- Vx +5 -5 until obstacle cleared
- Vy +5 -5 until safe maneuvering altitude achieved

Landing
- Configuration per manufacturer's recommendation (full flaps)
- Apply and maintain crosswind correction
- Approach speed per calculations +5 -0
  - not more than 1.3 Vso
- Smooth touchdown at minimum controllable airspeed
- Touchdown at or within 100 feet from selected point

This lesson will be complete when pilots can accurately predict takeoff, climb, and landing performance while operating their aircraft at typical mission weights & configurations.

Note: It is important to document performance with typical loads and aircraft configurations. If possible, assess performance at light weight and at or near maximum gross weight. If only one assessment is made it should be made at or near maximum

gross weight. Performance will be measured against predicted values and results will be documented on the forms provided.

Stage 2
Off-airport Site Selection

Lesson Objectives:

Pilots will learn how to evaluate potential off-airport landing sites while in the air and on the ground.

- GPS-based wind & runway length determinations
- Raw data time, speed, distance calculations
- Walking and marking takeoff area.

1.5 Hours Ground

- Landing site evaluation
  - Runway composition & condition
  - Approach & departure path (s)
  - Obstacle identification & evaluation
- Runway length evaluation
  - Time, speed, distance chart
  - GPS solution
- Runway wind evaluation
  - Crosswind chart
  - GPS solution
- Turbulence/Wind Shear prediction

1.5 - 2 Hours Flight

- Landing site evaluation
  - High level
    - Wind direction and speed
    - Landing area length
    - Approach and Departure Paths
    - Obstructions
  - Intermediate level
    - Landing area composition & condition
    - Obstructions on or immediately adjacent to landing area
    - Touchdown and roll out location & associated landmarks
    - Go-around decision point & associated landmarks
  - Low level
    - Obstructions, cuts, bumps on landing & rollout area
    - Touch & go for surface feel & departure path check
  - Landing
    - Approach at recommended approach speed & configuration
    - Roll to stop with minimum required breaking

Exit aircraft & assess area before taxiing
Takeoff area evaluation
Walk taxi & takeoff area
Establish and mark go/no-go decision point
Establish and mark calculated takeoff point
Position aircraft at takeoff point
Takeoff
Announce go/no-go decision point
Note lift off point & compare with pre calculated point

Completion Standards:

Commercial Pilot PTS Standards for Short Field Takeoff and Landing performance.
Takeoff
Configuration per manufacturer's recommendation
Apply and maintain crosswind correction
Vx +5 -5 until obstacle cleared
Vy +5 -5 until safe maneuvering altitude achieved
Landing
Configuration per manufacturer's recommendation (full flaps)
Apply and maintain crosswind correction
Approach speed per calculations +0 -0 and,
not more than 1.3 Vso
Smooth touchdown at minimum controllable airspeed
Touchdown at or within 50 feet from selected point

.5 Hour Post Flight
Compare performance with previous flight. Discuss training area to be used for Stage 3 Off Airport Operations

Stage 3
Off Airport Operations

Lesson Objectives:

Pilots will identify and evaluate 3 off-airport landing sites from the air. With instructor concurrence, pilots will land and conduct a ground evaluation, marking go/no-go decision points and predicted takeoff points.

1 Hour Ground
Review of landing site evaluation techniques and procedures.
Discussion of operations area.
Flight plan

2.0 Hours Flight

For each of 3 off-airport landing sites
- Overfly and evaluate site
- Land and document landing performance
- Conduct ground reconnaissance
- Position aircraft for takeoff
- Takeoff and document takeoff performance

1 Hour Post Flight

Review Course & answer questions

Complete Operational Risk Analysis work sheet and compare with baseline work sheet. This will become the new baseline for operational risk assessment and performance prediction.

Completion Standards:

This lesson will be complete when the pilot is able to identify viable off-airport landing sites and safely conduct operations to and from those sites. If acceptable off-airport sites are unavailable, the instructor may choose unimproved airports in the training area. Aerial evaluation of known sites is useful even if landings are not attempted; but the training will be most valuable when landing and takeoff operations are conducted. Likewise training in the Medallion Foundation PA-18 simulator is efficacious but it must be supplemented with airplane operations at off-airport or unimproved airport sites.

My Short Field Performance

Aircraft _____ Gross Weight _____ Test Weight _____

Airfield _____ Elevation _____ Density Altitude _____

Wind Direction _____ Wind Speed _____ X Wind Component _____

Runway Composition & Condition _____ Slope _____

Indicated Approach Speed _____ Flap Setting _____

Landing Distance _____

Takeoff Flap Setting _____ Rotation Speed _____

Rotation Speed x .70 _____ Vx _____ Vy _____

Distance to Rotation _____ Distance to 50 feet AGL _____