CADET ORIENTATION FLIGHT SYLLABUS

GLIDER 1 SYLLABUS 1

Themes: Ground handling, preflight, takeoff & landing
Estimated Time: 1 sortie
Cadet Textbook Reference: *Aerospace Dimensions*, Module 1

1. Ground Handling

a. Show how to ground handle the glider.
b. Emphasize surface areas not to be touched.

2. Preflight Inspection

a. Show how to preflight launch equipment & glider.
b. Show & explain the towrope's or cable's function.
c. Mention documents required to be aboard (AROW).
d. Show main parts of glider & explain their function.

3. Launch Procedures **Cadets are never to handle the controls during take-off, landing, or when below 1000 ft AGL.**

Aero Tow:

a. Explain the duties & purpose of ground launch personnel.
b. Discuss aero tow launch signals.

Ground Launch:

a. Explain the duties & purpose of the ground launch personnel.
b. Discuss ground launch signals.

4. Before Takeoff

a. Show & tell about the routine cockpit checks.
b. Explain the sequence of events prior to takeoff . (Example: Tow hook connection & checks, taking up tow line slack, *etc.*)

5. Takeoff

a. Show & tell about the glider's position behind the tow plane at takeoff & when airborne.
b. Describe the glider's position during takeoff roll & initial climb.
c. Describe emergency actions to be taken at different altitudes .

GLIDER 1 SYLLABUS 1

6. Climb Out

Discuss glider's position in relation to tow plane or launch vehicle:

a. Describe the high tow position during aero tow.
b. Discuss glider pitch attitude and position during ground launch.

7. Release

a. Show & tell about the release to include clearing, release confirmation, & release procedures.

8. In Flight

a. Show & tell about the use of flight controls in gliding flight, to include drag devices.
b. Point out the glider's attitude in relation to the horizon & at different airspeeds.
c. Show & tell about performance airspeeds: lift-over drag & minimum sink airspeeds.
d. Identify familiar landmarks, ground features, and the position of the airport with respect to glider altitude and position.

9. Approach to Landing

Cadets are never to handle the controls during take-off, landing, or when below 1000 ft AGL.

a. Show & tell about the traffic pattern. Discuss the reasons for a standardized entry procedure.
b. Show & tell about the pre-landing checklist.
c. Explain the use of a crab to maintain position (if needed).
d. Identify the base turn and leg of the pattern.
e. Show & tell about the final approach; discuss aim point, touch. down point, & stop point, and discuss use of drag devices.

10. Landing & Rollout

a. Show & tell about the landing attitude.
b. Point out the correct procedure for landing rollout.

11. Post Flight: Questions & Answers

CADET ORIENTATION FLIGHT SYLLABUS

GLIDER 2 SYLLABUS 2

Theme: Normal glider flight maneuvers
Estimated Time: 1 sortie
Cadet Textbook Reference: *Aerospace Dimensions*, Module 1

1. **Preflight**
   a. Discuss previously completed flights, as appropriate.
   b. Discuss principles for staying safe during this flight.

2. **In Flight** (minimum altitude of 1500' AGL)
Cadets are never to handle the controls during take-off, landing, or when below 1000 ft AGL.
   a. Trim for level flight; show & tell how the glider remains stable in hands-off flight.
   b. Emphasize attitude flying.
   c. Emphasize the importance of clearing.
   d. Discuss the effects of lift, drag, and gravity, and how gravity propels the glider.
   e. Discuss the relationship of lift, angle of attack, and relative wind.
   f. Show & tell straight and turning glides at various speeds (minimum sink, best lift over drag, and pattern speed).
   g. Show & tell shallow banked turn; discuss the horizontal component of lift, adverse yaw, turn coordination, slipping and skidding.
   h. Explain load factor during turns.

3. **Post Flight:** Questions & Answers

CADET ORIENTATION FLIGHT SYLLABUS

GLIDER 3 SYLLABUS 3

Theme: Advanced glider flight maneuvers
Estimated Time: 1 sortie
Cadet Textbook Reference: *Aerospace Dimensions*, Module 1

1. **Preflight**
   a. Discuss previously completed flights, as appropriate.
   b. Discuss principles for staying safe during this flight.

2. **In Flight** (minimum altitude of 1500' AGL)
Cadets are never to handle the controls during take-off, landing, or when below 1000 ft AGL.
   a. Perform clearing turns emphasizing collision avoidance.
   b. Demonstrate slow flight during straight & turning descents.
   c. Demonstrate straight ahead and turning stalls as appropriate, emphasizing stall recognition and recovery.
   d. Demonstrate medium and steep bank turns as appropriate.
      (1) Discuss over-banking tendency.
      (2) Discuss proper rudder coordination.
      (3) Discuss aft control stick requirements to keep the nose up.
   e. Explain load factor during turns.
   f. Discuss steep spirals and spins; emphasize the difference and the dangers of excessive load factors in steep spirals.
   g. Demonstrate forward and side slips and discuss their purpose.

3. **Post Flight:** Questions & Answers

CADET ORIENTATION FLIGHT SYLLABUS

GLIDER 4 SYLLABUS 4

Theme: Use of instruments in soaring flight
Estimated Time: 1 sortie
Cadet Textbook Reference: *Aerospace Dimensions*, Module 2

1. Preflight

a. Discuss previously completed flights, as appropriate.

b. Discuss principles for staying safe during this flight.

c. Explain the pitot/static system and its relationship to the airspeed indicator, altimeter, and variometer.

d. Explain the magnetic compass and its inherent errors.

2. In Flight

Cadets are never to handle the controls during take-off, landing, or when below 1000 ft AGL.

a. Explain the difference between absolute altitude (AGL), true altitude (MSL), and pressure altitude (PA).

b. Demonstrate how to read the altimeter.

c. Demonstrate how to read the airspeed indicator and discuss the difference between indicated airspeed, true airspeed, and ground speed.

d. Identify how altitude and airspeed are related.

e. Demonstrate how to read the variometer and discuss the indications of rising and/or falling thermal activity (air currents).

f. Demonstrate turns using the magnetic compass; discuss compass turning errors (variation, deviation, magnetic dip, and oscillation error).

3. Post Flight: Questions & Answers

CADET ORIENTATION FLIGHT SYLLABUS

GLIDER 5 SYLLABUS 5

Themes: Weather
Estimated Time: 1 sortie
Cadet Textbook Reference: *Aerospace Dimensions*, Module 3

1. Preflight

a. Discuss previously completed flights, as appropriate.

b. Discuss principles for staying safe during this flight.

c. Discuss thermal soaring: the effect of heating, thermal structure, locating thermals (cumulus clouds, dust devils, surface dust & smoke, soaring birds, other sailplanes, etc.).

d. Discuss methods of soaring, as appropriate:

(1) Ridge and slope soaring

(2) Wind effects and requirements, soaring in upslope lift, leeside turbulence, slope and ridge requirements

(3) Sea breeze soaring

(4) Mountain wave soaring; formation, visual indications, associated turbulence

2. In Flight (cover those topics appropriate to local conditions)

Cadets are never to handle the controls during take-off, landing, or when below 1000 ft AGL.

a. Demonstrate thermal soaring; discuss thermal entry and when & how to turn into the thermal; discuss thermalling with other sailplanes, best airspeed, and flying between thermals.

b. Demonstrate sea breeze or shear line soaring.

c. Demonstrate ridge or slope soaring; emphasize best speed to fly, general rules for turning on the ridge, approaching other sailplanes, and other "rules of the road."

d. Demonstrate wave soaring; explain wave structure, wave crests, and rotor; identify lenticular clouds, if present.

3. Post Flight: Questions & Answers