COLORADO SOARING FOUNDATION
STUDENT PILOT PRE-SOLO WRITTEN EXAM 14 CFR 61.87
(JULY 19, 2023)
Written by Bill Corbin

DATE_____

STUDENT NAME_____

REVIEWED BY _____

GLIDER INFORMATION

1. ANNUAL DUE DATE
2. EMPTY WEIGHT
3. GROSS WEIGHT
4. MINIMUM COCKPIT WEIGHT FOR SOLO
5. MAXIMUM COCKPIT WEIGHT FOR SOLO
6. TYPES OF BALLAST AVAILABLE
7. LOCATION AND TYPE OF TOW RELEASE
8. WHAT WEAK LINK IS REQUIRED
9. DESCRIBE THE OXYGEN EQUIPMENT (IF INSTALLED)
10. MAIN TIRE PRESSURE
11. NOSE/TAIL WHEEL TIRE PRESSURE
12. HOW DO YOU ADJUST THE RUDDER PEDALS
13. HOW DO YOU LOCK THE CANOPY CLOSED

PERFORMANCE

1. MAXIMUM AERO TOW SPEED
2. MAXIMUM SPEED TO EXTEND SPOILERS
3. MANEUVERING SPEED
4. MINIMUM SINK SPEED
5. BEST LIFT TO DRAG SPEED
6. FINAL APPROACH SPEED (CALM WIND)
7. FINAL APPROACH SPEED (15 mph WIND)

INSTRUMENTS

1. WHAT INSTRUMENTS ARE CONNECTED TO THE PITOT STATIC SYSTEM
2. WHAT INSTRUMENTS ARE CONNECTED TO THE STATIC SYSTEM ONLY
3. DESCRIBE THE FOLLOW AIRSPEEDS
    a. GREEN ARC
    b. YELLOW ARC
    c. RED LINE
    d. YELLOW TRIANGLE

4. WHAT TYPE OF VARIOMETER(S) ARE INSTALLED
5. WHERE IS THE G-METER
6. WHY IS THERE A YAW STRING
7. WHAT IS OWL CANYON'S RADIO FREQUENCY
8. HOW DO YOU ADJUST THE RADIO'S VOLUME

OPERATIONS

1) WHAT IS THE PROCEDURE FOR A TOW ROPE INSPECTION
2) WHAT IS REQUIRED FOR A TOW PILOT BRIEFING
3) WHEN DO YOU COMPLETE THE TOW PILOT BRIEFING
4) EXPLAIN WHAT TO DO FOR THE FOLLOWING DIFFERENT POSITIONS DURING AERO TOW AND YOU HAVE A ROPE BREAK
    a) AT THE START OF THE TAKEOFF ROLL (ON THE GROUND)
    b) AFTER LIFT OFF (MID FIELD)
    c) PAST THE END OF THE RUNWAY (100 FEET a.g.l.)
    d) AFTER COMPLETING THE TURN DOWNWIND (300 FEET a.g.l.)
    e) REACHING 500 FEET ON DOWNWIND
5) WHAT IS THE FIRST ACTION ITEM IMMEDIATELY AFTER A ROPE BREAK
6) EXPLAIN WHAT TO DO IF THE CANOPY OPENS DURING TAKEOFF AND TOW
7) EXPLAIN HOW TO DO A POSITIVE CONTROL CHECK
8) WHO MUST BE ON THE FIELD FOR A STUDENT PILOT SOLO
9) WHAT DOCUMENTS ARE REQUIRED FOR THE GLIDER
10) WHAT DOCUMENTS ARE FOR THE STUDENT PILOT WHILE SOLOING
11) WHAT RUNWAYS ARE AVAILABLE FOR SOLO TAKEOFFS/LANDINGS
12) EXPLAIN THE TRAFFIC PATTERN FOR EACH RUNWAY
13) EXPLAIN "AVIATE-NAVIGATE-COMMUNICATE"

AERODYNAMICS

1. EXPLAIN THE FOLLOWING
    a. WING SPAN
    b. WIND CORD
    c. DIHEDRAL
    d. LONGITUDINAL AXIS
    e. LATERAL AXIS
    f. VERTICAL AXIS
    g. CENTER OF GRAVITY
    h. RELATIVE WIND
    i. ANGLE OF ATTACK
    j. CRITICAL ANGLE OF ATTACK
    k. STALL
        i. INDICATIONS
        ii. RECOVERY PROCEDURE
            1. WINGS LEVEL
            2. WHILE TURNING
    l. FORWARD SLIP
        i. HOW TO ACCOMPLISH

   ii. WHEN DO YOU USE THIS PROCEDURE
   iii. WHEN DO YOU RECOVER
m. SIDE SLIP
   i. HOW TO ACCOMPLISH
   ii. WHEN DO YOU USE THIS PROCEDURE
   iii. WHEN DO YOU RECOVER
n. HOW AND WHY DO YOU FLY A DIFFERENT APPROACH SPEED FOR WINDY CONDITIONS DURING LANDING
o. WHAT CHANGES DO YOU MAKE TO THE TRAFFIC PATTERN FOR WINDY CONDITIONS
p. AFTER LANDING IN STRONG AND/OR GUSTY WIND CONDITIONS, WHAT IS THE CORRECT PROCEDURE TO DO AS THE PILOT

2. WHY IS THERE A FORWARD AND AFT LIMIT TO THE CENTER OF GRAVITY FOR THE GLIDER
3. WHAT COULD HAPPEN IF YOU EXCEED THE AFT LIMIT AND INADVERTENTLY STALL THE GLIDER

RULES/REGULATIONS AND PROCEDURES

1. WHO IS RESPONSIBLE FOR THE AIRWORTHINESS INSPECTION OF THE GLIDER
2. WHERE IS THE MAINTENANCE LOGBOOK FOR THE GLIDER LOCATED
3. IF YOU FIND A PROBLEM WITH THE GLIDER, FOR EXAMPLE A FLAT TIRE, WHAT WILL YOU DO
4. WHAT IS THE MAXIMUM WIND SPEEDS FOR SOLO
   a. HEADWIND
   b. CROSSWIND
   c. TAILWIND
5. THE SOLO AUTHORIZATION IS VALID FOR A MAXIMUM OF _____ DAYS
6. WHEN ARE YOU REQUIRED TO USE THE SEATBELT / SHOULD HARNESS
7. WHEN APPROACHING TO LAND YOU SEE ANOTHER GLIDER IN THE PATTERN; WHO HAS THE RIGHT-OF-WAY
8. WHILE ON TOW THE TOWPLANE “FANS” THE RUDDER, WHAT DOES THIS MEAN
9. WHEN ARE YOU REQUIRED TO RELEASE THE TOW ROPE
10. EXPLAIN HOW TO CORRECT FOR A SLACKLINE
11. JUST BEFORE STARTING THE TOW YOU SEE A CAR OR PERSON WALKING TOWARDS THE RUNWAY. WHAT SHOULD YOU DO
12. EXPLAIN THE FOLLOWING
    a. I.M.S.A.F.E.
    b. P.A.V.E.
    c. SIGNS OF DEHYDRATION
    d. SIGNS OF HYPOXIA
13. WHEN RETURNING TO LAND, WHEN DO YOU COMPLETE THE BEFORE LANDING CHECKLIST
14. WHEN RETURNING THE WIND IS FROM THE WEST AT A SPEED OF 20 mph, WHAT DO YOU DO FOR LANDING
15. WHAT TYPE OF AIRSPACE IS DIRECTLY ABOVE THE AIRPORT