The Diamond Badge

1. A gain of 5000 meters after release from tow (16,404 feet)
2. A distance flight of 500 km. (310.69 sm)
3. A Goal flight of 300 km. (186.41 sm) over an out and return course or a Triangular course.

February 24, 2012
The Diamond Badge: The N stands for the USA. Gulls represent the three tasks of the Badge.

For each task: You will need an Official Observer and a flight recorder.

Who is an Official Observer? An Official Observer is a member of SSA, Hold at least an SSA B Badge, and has a working knowledge of the FAI Sporting Code as it pertains to gliders.

Release from tow at or below the maximum altitude permitted for the task (See each task below)…Mark the release from tow with a tight turn using a flight recorder, then complete the task.

After the flight, you and your Official Observer will fill out the SSA Application form and worksheet. Send the Application and worksheets, plus the .igc file from your flight recorder to the SSA. After SSA approval you will receive a letter of congratulations and your Diamond Badge when all three tasks are completed.

ALTITUDE: The objective is to gain at least 16,404 feet after release from tow.

Release from tow at any height and location that will allow you to find life. Mark the release from on a flight recorder (as described above). Establish a low point, then climb at least 16,404 feet.

DURATION: The objective is to make a cross country flight of at least 500 km (310.69 miles)

See documentation included on SSA Badge and Records Guide (extracts)

Included

DISTANCE: The objective is to make a Goal flight of at least 300 km (186.41 miles) on an out and return or triangular course

Goal flights require you to cross the declared start and finish points. Start at a Release point is not allowed.

February 24, 2012
SSA Award Application

For any flight documented by barograph or approved data recorder, please attach both pages of a completed SSA Badge & Record Worksheet

I. PILOT INFORMATION: non-members please enclose $20 fee for processing FAI badge claims
(a) Pilot: ___________________________ Date of Birth: _______________ SSA Member #: _______________
(b) Address: ___________________________ City: ___________________________ State: ______ Zip: ___________
(c) E-mail: ___________________________ NAC e-mail, if not SSA: ___________________________

II. PILOT CERTIFICATION: I hereby certify this flight was conducted in accordance with the FAI Sporting Code, in compliance with all the glider manufacturer's and national operating limitations, and in accordance with national flight regulations respecting airspace use, night flight, etc. I apply for the award(s) circled below.

Pilot Signature: ___________________________ Date: ___________________________

Altitude Claim(s): Silver Gold Diamond Symons Wave ($40 fee applies)
Duration Claim: Silver/Gold
Distance Claim(s): Silver Gold Diamond Goal Diamond Distance
Diplome Claim: 750 km 1000 km 1250 km Other Diplome: _________ km
Other Awards Barringer Trophy Century Award (Pilot age 20 or younger)
*See program rules *State Record(s) *SSA Distance Award ($10 fee applies)

III. FLIGHT DATA SUMMARY
(a) Flight Date: _________________ Is the aircraft a motor glider? Circle one: YES NO
(b) Aircraft Make & Model: ___________________________ N#: ______________
(c) Take Off Site: ___________________________ State: ____________ Elevation: ____________ MSL
(d) Time of release (or last motor glider Means of Propulsion use), Local time: ___________________________
(e) Landing Site: ___________________________ State: ____________ Elevation: ____________ MSL
(f) Landing time (end of the ground roll), Local time: ___________________________

IV. OBSERVER CERTIFICATION: Check ONE and complete:

☐ Barograph and/or GPS data supports this application; I provided supervision of this flight as required by Sporting Code Section 3, and have attached the SSA Badge & Record Worksheet I completed.

☐ This application is for Silver Duration only and I provided the continual attention required to confirm 5 hours were flown, with Loss of Height less than 3280’ from release to landing.

OBSERVER’S NAME (please print) ____________________________________________ SSA MEMBER #: __________________________

SIGNATURE: ___________________________ E-MAIL: __________________________

Submit by mail to:
SSA, PO Box 2100
Hobbs, NM 88241
Attn: Badge Claims

Office Use Only

Hold Date Approval Date By Letter Date Soaring Pub Denial Date SC3 Reason

SSA Form B-1 6/1/10
SSA BADGE & RECORD WORKSHEET

COMPLETE ALL ITEMS use N/A for “No applicable.”
The written declaration below is valid for all but World Records, if completed and signed before takeoff and, if using an IGC Approved Flight Recorder, after (1) turning the FR on; (2) entering an electronic task if desired - then leave the FR on!

SC3 4.2.1,4.5.5a,4.5.6a; FR Approval

<table>
<thead>
<tr>
<th>PRE-FLIGHT DECLARATION &amp; EQUIPMENT CHECK</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLIGHT DATE: __________________________</td>
</tr>
<tr>
<td>OO NAME: ______________________________</td>
</tr>
<tr>
<td>PILOT NAME: ___________________________</td>
</tr>
<tr>
<td>AIRCRAFT Make/Model: ____________________</td>
</tr>
<tr>
<td>IN-FLIGHT CREW: _________________________</td>
</tr>
<tr>
<td>AIRCRAFT Registration #: ________________</td>
</tr>
<tr>
<td>BAROGRAPH / FR MAKE: ____________________</td>
</tr>
<tr>
<td>BAROGRAPH / FR SERIAL #: ________________</td>
</tr>
</tbody>
</table>

OO: Complete for Barograph Claim

1. Barograph serial # checked; pre-flight ID mark added to barogram
2. Barograph wound & sealed, installed in the glider, inaccessible to the pilot

AND

OO: Complete for GPS Claim

1a. Recorder serial # & installation checked; recorder sealed to the glider

OR

1b. Recorder serial # & installation checked and aircraft continuously observed until takeoff

TASK required for all distance flights except (1) Straight Distance from release to landing or Finish Fix; or (2) Free records

<table>
<thead>
<tr>
<th>Way Point</th>
<th>Location Name</th>
<th>Latitude (DD:MM.mmm)</th>
<th>Longitude (DD:MM.mmm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Start Point: __________________________</td>
<td>__________________</td>
<td>___________________</td>
<td></td>
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<tr>
<td>2. Turn Point: ___________________________</td>
<td>___________________</td>
<td>____________________</td>
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<tr>
<td>3. Turn Point: ___________________________</td>
<td>___________________</td>
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<td></td>
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<tr>
<td>4. Turn Point: ___________________________</td>
<td>___________________</td>
<td>____________________</td>
<td></td>
</tr>
<tr>
<td>5. Finish Point: _________________________</td>
<td>___________________</td>
<td>____________________</td>
<td></td>
</tr>
</tbody>
</table>

PRE-FLIGHT SIGNATURES ARE REQUIRED, WITH DATE & TIME CERTIFIED BY THE OO

Pilot Signature: _____________________________

Date & time of

OO Signature: ___________________________ OO’s Signature: _____________________________

POST-FLIGHT EQUIPMENT CHECK

OO: Complete for Barograph Claim

The pilot may remove the barograph from the glider prior to a ground retrieve. The OO must verify both:

1. Seal & pre-flight ID mark intact, serial # checked
2. Barogram prepared for evaluation, with the following added to it:
   - Flight date
   - Pilot name
   - Aircraft make, model & registration
   - Baro make, serial # & range
   - Altitude of release
   - OO post-flight signature
   - for Altitude records, pre-flight ground level pressure QFE at take off site

OO: Complete for GPS Claim

1. If Recorder/aircraft seal applied pre-flight, the seal was intact post-flight

OR

1b. If no pre-flight Recorder check was done, continuous observation was provided from landing until the post-flight installation check

Each of the following is required:

2. Performed or supervised download & retained the original data file(s)
3. File security checked using proper software
4. Take off & landing time(s) & location(s) confirmed (Provide details on page 2)

6/1/10 Page 1 of 2
OFF-FIELD LANDING: Certification by 1 Observer or 2 other witnesses (as needed)

I hereby certify I witnessed the above pilot and aircraft at the date, time and location shown below:

Date:  
Local Time:  
Location:  

Signature:  
Signature:  
Name:  
Name:  
Address:  
Address:  

OO CONFIRMATION OF TAKE OFF & LANDING TIMES & LOCATIONS (or flight recorder)

Take off Time (Local):  
Take off Site:  
Take off Site Elevation MSL:  Nearest City:  State:  
Confirmed by:  

Landing Time (Local):  
Landing Site:  
Landing Site Elevation MSL:  Nearest City:  State:  
Confirmed by:  

CONFIRMATION OF RELEASE LOCATION (as needed)

Required if: (1) no release “notch” is evident in barograph-recorded data; or (2) the time & location of release are not evident in FR-recorded data. List the location as accurately as possible; if overhead at an airport, list published airport coordinates.

I hereby certify the following as the release location for the flight listed at the top of this page:

Latitude (DD:MM.mmm):  
Longitude (DD:MM.mmm):  
Tow Pilot / Launch Supervisor Name:  
Tow Pilot / Launch Supervisor Signature:  

ALTITUDE EVALUATION

Refer to the SSA Badge & Record Guide to find altitudes MSL, corrected for both instrument error and non-standard pressure

ALL CLAIMS:  Release:  ALTIMETRY CLAIMS:  Low Point:  High Point:  
DISTANCE CLAIMS:  Start Altitude:  Finish Altitude:  

Claim Submission Checklist

1. Barograph or Flight Recorder calibration is current
2. Recorded data proves soaring performance consistent with the Badge leg(s) and/or Record(s) sought
3. Materials submitted to SSA:
   • BOTH pages of this worksheet
   • SSA Award Application and, if applicable: record form(s), SSA Distance Award Application
   • Data recorded in flight (eg: original foil or paper barogram; CD, memory stick or memory card)
   • A copy of FR calibration data or, if altitude gain or Loss of Height is within 300 feet of an FAI limit and the flight was recorded by mechanical barograph, its ORIGINAL calibration graph.
   • The OO’s written explanation for any unusual aspect of the flight or its documentation
It’s true... rules and procedures are the last thing anybody wants to worry about on a great soaring day. Your most memorable flight or a personal best awaits - and it’s all about the proverbial joy of soaring!

Even so, there’s a difference between having an undeniably great soaring flight and earning an FAI Badge or Record achievement: the latter is done to Sporting Code Standards. The next 9 pages can take “worry” out of the equation, helping you meet the challenge and reap the rewards in Badge soaring.

Pilots, Official Observers and State Record Keepers alike can use this guide to...

• Plan a flight for one or more Badge and/or Record claims
• Check out the wide variety of cross country task options
• Evaluate altitude, distance and speed claims accurately
• Maximize credited soaring performance
• Be aware of appeal procedures if a badge, record or award application is submitted and any claim is denied

TERMS USED IN THIS GUIDE

FAI, IGC The Federation Aeronautique Internationale and its International Gliding Committee -- the governing bodies overseeing Badge and World Record pursuits worldwide

SC3 FAI Sporting Code Section 3 for gliders, often followed by a paragraph cite

Declaration / Declared The pre-flight list of flight-specific information required by SC3. When planned Start, Turn or Finish locations are included by name or coordinates, the task and those locations are often referred to as “declared”

MoP A motorglider’s Means of Propulsion

Duration The elapsed time between the Start and Finish

Start The beginning of the flight performance, not before the later of release or MoP stop

Turn Point[s] One or up to three Way Points achieved after the Start and before the Finish.

Finish The end of the flight performance, not later than the earlier of landing or MoP start

Task Type A distance or speed performance defined in SC3 1.4.3 – 1.4.8.

Task Distance The distance measured along course line, from Start to Finish, via Turn Points if any

Official Distance The distance credited for a badge or record and the distance to be divided by duration to yield speed for a record performance.
I. PRELIMINARIES
A dry read, but important to success!

PERSONNEL & EQUIPMENT

Online Resources

SSA.org
Soaring Achievement and Info & Resources links access SSA's -
- FAQ
- Badge & Record Worksheet
- FAI Sporting Code ("SC3")
- SC3 Summary for Badges
- Rules for SSA awards

FAI.org/gliding
Documents, Technology and/or Gliding Sport links access -
- World Record applications
- Flight Recorder information & Approval Documents
- Current and historical lists of World Records

Official Observer ("OO") Qualifications:

For FAI Badges, State and US National Records, the OO must be an SSA member and (1) hold at least an SSA “B” badge; or be (2) the airport manager at the airport of takeoff or landing; or (3) an SSA appointee.

In all cases, the OO must be familiar with SC3, pre- and post-flight procedures for the data recording equipment used and accurate analysis of flight documentation

Data Recording & Basic Procedures

An approved Flight Recorder ("FR") is required for Diamond flights

An FR is an electronic instrument approved by FAI’s International Gliding Commission to record time, pressure data, GPS position, and - in the case of motor gliders - engine noise level. Check the FR's IGC Approval Document to make sure it’s approved at the appropriate badge or record level and running the approved “firmware” version.

- Before flight, the Pilot and OO complete the pre-flight portion of an SSA Badge & Record Worksheet.
- In flight, the FR records data at regular intervals; as soon as possible after landing, an OO completes the post-flight portion of the SSA Badge & Record Worksheet, performs or supervises data file download, checks data file security and evaluates flight data.
- Independent evidence is required to verify take off and landing times and locations. This may take the form of soaring site flight logs or witness statements.

SC3 provides for individual countries to approve off-the-shelf GPS Position Recorders for recording Silver or Gold Badge flights. As of 15 May 2010, no such recorders have been approved for use in the US.
A pre-flight declaration is required for all Diamond flights using an IGC approved FR.

For any Diamond flight the pilot may use either a one-page written declaration or an electronic declaration entered in FR memory.

In either format, only the last declaration made before takeoff is valid for a given flight and per SC3 4.2.1 it must include –

a. Date of flight
b. Pilot name (and passenger name for multiplace records)
c. *Glider Type (make/model) and its registration or serial number
d. Make, model & serial # for each data recording device used
e. For a distance or speed claim: intended Start, Turn and Finish Points (This does not apply to straight distance badge task from release to landing or ‘Free’ records)

Written declaration forms are included with this document as part of the application.

When using a written declaration, the Observer must certify declaration date & time, so the following are required in addition to the above –

f. Pilot in command signature
g. OO signature, with date & time

By default, an IGC-approved FR includes declaration date & time in the data file, but FR models vary widely in how the time is assigned.

The best procedure for a new FR user, a case where one FR is used in multiple aircraft or when pilot, aircraft or task data entered in an FR can't be checked for accuracy and changed if necessary before takeoff:

- Prepare a written declaration ready for an OO’s signature
- On the intended flight date, the OO performs a pre-flight FR installation check and the FR is turned on; a task may be entered if desired
- The OO waits a few minutes, then adds his/her signature, date & time to the written declaration
- No further tinkering with FR task entry, and make sure the FR remains ON until after landing

Do you transfer declarations to an FR using a PDA or after-market software? These may over-write data in FR memory and/or limit the number of characters transferred to any FR data field. Prior to attempting any badge or record flight, test to make sure all required data is correctly transferred to the FR; contact software vendor(s) for guidance if needed.
II. TASK OPTIONS

Who knew there were so many?!  

DISTANCE TASKS WITHOUT TURN POINTS

**SC3 1.4.3 Straight Distance** (Badge Distance only)

No Turn Points are declared or no declared Turn Point is achieved. When documented by GPS, Task Distance at left is \( \text{Rff} \) - the longest of \( \text{RY, XY, RL, XL, Rff and Xff} \), where...

- \( R \) = release or MoP stop
- \( X \) = the declared Start Point, if achieved
- \( Y \) = the declared Finish Point, if achieved
- \( ff \) = a Finish Fix selected post-flight and recorded before “L”
- \( L \) = the earlier of landing or MoP start

**SC3 1.4.4 Straight Distance to a Goal**

No Turn Points are declared. Task distance is \( XY \), where...

- \( X \) = declared Start Point achieved by some combination of 1000-meter OZ Sector(s) and Start and Finish Line(s)
- \( Y \) = declared Finish Point

DISTANCE TASKS WITH ONE OR MORE TURN POINTS

**SC3 1.4.5 Distance Using Up to 3 Turn Points** (Badge Distance)

Same Start & Finish options as Straight Distance, but at least 1 of up to 3 declared Turn Points must be achieved; Turn Points are at least 10 km apart and may be used in any order. A declared Start and/or Finish Point may be used as a Turn Point if also declared as a Turn Point. Here...

- \( R \) = release or MoP stop
- \( X \) = the declared Start or Start/Finish Point, if achieved
- \( 1 \ 2 \ 3 \) = declared Turn Points, in the order achieved
- \( ff \) = a Finish Fix recorded before “L” and selected post-flight
- \( L \) = the earlier of landing or MoP start

With three Turn Points declared & achieved, task distance at left is \( \text{R 1 2 3 ff} \)

**Variant 1:** Start/Finish Point declared as one of three Turn Points

Essentially, this variant consists of back-to-back out & return legs. As shown, task Distance Using Up to 3 Turn Points is \( \text{R 1 2 3 ff} \). A finish at \( X \) would yield the best last leg if 1 was the last Turn Point achieved.

**Note:** Concurrent tasks are also possible. See SC3 1.4.7b, 1.4.6 & 1.4.8
SC3 1.4.5 Distance Using Up to 3 Turn Points (Continued)

**Variant 2:** One or more Turn Points isn't properly achieved, where...

- **R** = release or MoP stop
- **X** = declared Start/Finish Point
- **1 2** = 2 of 3 declared Turn Points, in the order used
- **ff** = a Finish Fix recorded before “L” and selected post-flight
- **L** = the earlier of landing or MoP start

As shown at left, one skipped Turn Point and lack of an advantageous Finish Fix in this case mean task Distance Using Up to 3 Turn Points is \( R \cdot 1 \cdot 2 \cdot L \).

**Note 1:** If only one declared Turn Point were achieved, the task Distance Using Up to 3 Turn Points is \( R \cdot \text{TP} \cdot L \).

**Note 2:** Though X may have been declared and achieved as a goal flight Start/Finish Point, a skipped or improperly achieved Turn Point means the flight cannot be credited as Diamond Goal or a closed course record.

**Note 3:** Concurrent tasks are also possible; see SC3 1.4.7b, 1.4.6 & 1.4.8

**Variant 3:** a Start/Finish Point and fewer than 3 Turn Points are declared and achieved in declared order, where...

- **R** = release or MoP stop
- **X** = declared Start/Finish Point
- **1 2** = declared Turn Points, used in declared order
- **ff** = a Finish Fix recorded before “L” and selected post-flight
- **L** = the earlier of landing or MoP start

At left, given the release location and lack of a more advantageous Finish Fix, task Distance Using Up to 3 Turn Points is \( R \cdot 1 \cdot 2 \cdot L \).

**Note 1:** If only one Turn Point were declared and achieved at left, the task Distance Using Up to 3 Turn Points would be \( R \cdot \text{TP} \cdot L \).

**Note 2:** Concurrent tasks are also possible; see SC3 1.4.7b, 1.4.6 & 1.4.8

---

Distance to Goal over an Out and Return course requires you to cross declared start and finish points, and cross one declared turn-point.
III. PROCEDURAL ISSUES
Details that can make or break a badge or record claim!

ACHIEVING WAY POINTS

- inbound course
- outbound course
- OZ boundary
- Start/Finish Line

START & FINISH OPTIONS

A Start at Release or a Finish at landing may be certified by an Observer based on witness statements consistent with data recorded by barograph or GPS. Elsewhere, GPS data must clearly prove Way Points were achieved:

✓ A Start other than release and/or a Finish other than landing may be achieved by crossing a line 1 km long, centered on the Way Point. The Start Line is perpendicular to the first leg, the Finish Line is perpendicular to the last leg.

✓ At any Start or Finish Point not achieved by line crossing and at each Turn Point -

(1) a Fix must be exactly on Way Point coordinates or within its Observation Zone; or

(2) a straight line drawn between two consecutive valid fixes must cross the Observation Zone boundary

SC3 1.2.5 OBSERVATION ZONE (OZ): The airspace a glider must enter to attain a Way Point. The OZ may be either a Cylinder or a Sector:

- SC3 1.3.6 CYLINDER OZ (Turn Points ONLY) The airspace within a vertical cylinder of 500 meter radius centered on the Turn Point.

  OZ CORRECTION Each time a course leg crosses a CYLINDER OZ boundary, 500 meters is subtracted from the length of that leg. This correction does not apply to Free Record Turn Points at GPS fixes.

- SC3 1.3.8 OZ SECTOR (Any Way Point) The airspace above a quadrant having its apex at the WAY POINT. Orientation and radius vary:

  - At a Turn Point, the OZ Sector is symmetrical to and remote from the bisector of the inbound & outbound LEGS at the TURN POINT. OZ Sector radius is unlimited

  - At a Start Point (other than Release), the OZ Sector is symmetrical to and remote from the outbound LEG. OZ Sector radius is 1000 meters for goal & all closed course flights; it is unlimited for Straight Distance & Distance Using Up to 3 Turn Points

  - At a Finish Point (other than Landing), the OZ Sector is symmetrical to and remote from the inbound LEG. OZ Sector radius is 1000 meters for goal & all closed course flights; it is unlimited for Straight Distance & Distance Using Up to 3 Turn Points
**LOSS OF HEIGHT LIMITS & PENALTIES**

**SC3 1.3.4 Loss of Height (LoH):** Start Altitude minus Finish Altitude, where...

<table>
<thead>
<tr>
<th>Start &amp; Start Altitude MSL may be at</th>
<th>Finish &amp; Finish Altitude MSL may be at</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Release or MoP stop, if claimed as the Start; or</td>
<td>- the highest Finish Line Crossing; or</td>
</tr>
<tr>
<td>- the lowest Fix in the Start OZ; or</td>
<td>- Finish OZ entry; or</td>
</tr>
<tr>
<td>- Start OZ exit; or</td>
<td>- the highest Fix in the Finish OZ; or</td>
</tr>
<tr>
<td>- the lowest Start Line crossing; or</td>
<td>- a Finish Fix selected post-flight as the Finish; or</td>
</tr>
<tr>
<td>- for a ‘Free’ record, a Start Fix</td>
<td>- pre-landing motorglider MoP Start; or</td>
</tr>
<tr>
<td></td>
<td>- landing site elevation, if landing is claimed as the Finish</td>
</tr>
</tbody>
</table>

**Concurrent Badge and/or Record claims for a single flight may each use different Start & Finish options**

As shown in side view at left, Plan A assumes a closed course using a Start/Finish Point at the home airport; in contingency Plan B, the glider lands out after achieving the Start and one or more Turn Points in the shaded area. In this case...

- \( R \) = release or motorglider MoP stop in both plans
- \( X^1 \) = Start/Finish Point achieved as a Start in both plans
- \( X^2 \) = Start/Finish Point achieved as a Finish in Plan A
- \( L \) = separate landing locations for each Plan

Finish Fixes for each plan can only be determined post-flight

**NOTE 1:** Plan B’s Finish by landing at \( L \) increases LoH relative to both release and the Start at \( X^1 \). A Finish Fix might come in handy...

**NOTE 2:** To avoid or minimize an LoH penalty...

... use Maximum LoH in the next section to plan Start Altitude, ideally -

\[ \text{(Max LoH)} + \text{MSL elevation of the lowest landing site in the task area} \]

... for Straight Distance or Distance Using Up to 3 Turn Points, increase task distance and Max LoH with a Release on the “non-task” side of the Start Point, at or below maximum Start Altitude.

**Duration:**

Maximum LoH = 1000 meters

\[ = 3280.8399' \]

Release to landing yields longest duration, but given instrument and lag errors in altimeters, \( R \) should be planned no higher than 3000 feet above landing site elevation.

**NOTE:** Tow a bit too high? Using GPS documentation, Silver Duration can be credited from Release to a Finish Fix recorded at least 5 hours later.

**Speed:** (Closed Course required)

Maximum LoH = 1000 meters

\[ = 3280.8399' \]

Last Start Line crossing to first Finish Line crossing yields best speed, but if this exceeds Max LoH, calculate all LoH possibilities using closed course Start & Finish OZ Sectors. Use the same pair of Start & Finish alternatives to calculate both Loss of Height and time on course.
Distance ≤ 100 km (62.14 sm)
Max LoH = 1% of task distance
= 52.80 x task distance in sm

Distance > 100 km:
A distance penalty applies if LoH is greater than 1000 meters (3280.8399 feet)

For planning purposes, base task distance on declared Start, Turn and Finish Points; then, plan a Start altitude no more than:

(52.8 x task distance in sm) + lowest landing site elevation in the task area

NOTE 1: To avoid an LoH penalty for Straight Distance or Distance Using Up to 3 Turn Points, release no higher than the planned Start Altitude while within the unlimited radius Start OZ Sector.

NOTE 2: If all else fails: during post-flight evaluation, check for a Finish Fix advantageous in terms of location and/or altitude – either one can remedy LoH woes for Straight Distance and Distance Using Up to 3 Turn Points.

On 100+ km flights where LoH exceeds 1000 meters, a penalty is deducted from task distance, and it’s painful:

\[
\left\{ \frac{(\text{LoH} - 3280.8) \times 100}{5280} \right\}
\]

This amounts to 1.8939 sm for every 100’ the LoH exceeds 1000 meters!

The strategies in Notes 1 and 2 above apply to Straight Distance and Distance Using Up to 3 Turn Points. For Goal and Closed Course tasks, the 1000-meter Start OZ radius means the best Start Point is a local landmark near a reliable lift area – easy to find and a safe place to record a low Start and, for a Closed Course, establish a high point if needed in the Finish OZ.

NOTE 1: For Diamond Goal and other declared closed courses: If the Start or Finish wasn’t properly achieved or an LoH penalty invalidates the closed course claim, distance may be credited as Distance Using Up to 3 Turn Points and/or a ‘Free’ Record.

---

Pilot A Pilot B

Cylinder Corrections apply when a declared Turn Point is achieved by Cylinder OZ only, without entry into the Turn Point’s OZ Sector.

In the 3-Turn Point triangle at left, Task Distance for both pilots would be 1-2-3-1, but Pilot A - using Cylinders at all Turn Points - doesn’t fly quite as far as Pilot B, who’s used OZ Sectors. To level the playing field, a Cylinder Correction of 3 km (1.86 sm) would be deducted from Pilot A’s Task Distance.

This is the worst case scenario for Pilot A, whose penalty is .5 km for every time the course line crosses a Cylinder boundary. The whole course Cylinder Correction penalty subtracted from Task Distance amounts to 1 km for
each declared Turn Point achieved only by Cylinder OZ.

For Triangle distance and/or speed Records, Cylinder Corrections are more complicated due to the leg length requirements at SC3 1.4.6, which apply equally to declared and ‘Free’ Triangle courses.