

**APPENDIX A**  
*Standard Patterns and Expendable Locations*

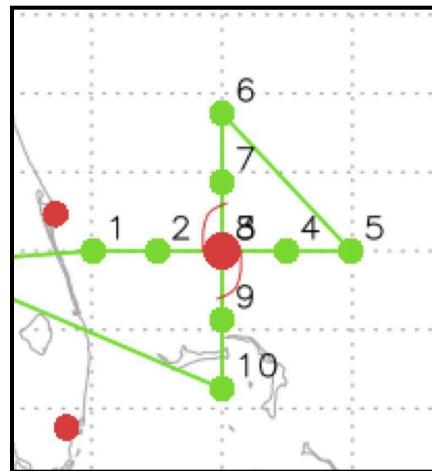
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**Figure-4:**

**In-Pattern Duration:** ~ 2 h 15 min (P-3), ~ 1 h 20 min (G-IV)

**Leg Lengths:** 105 n mi (195 km)

**Dropsondes:** centers, mid-points and turn points of each leg [10 sondes total]

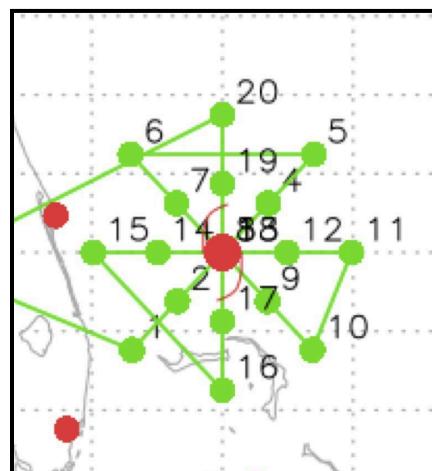


**Rotated Figure-4:**

**In-Pattern Duration:** ~ 5 h (P-3), ~ 2 h 55 min (G-IV)

**Leg Lengths:** 105 n mi (195 km)

**Dropsondes:** centers, mid-points and turn points of each leg [20 sondes total]



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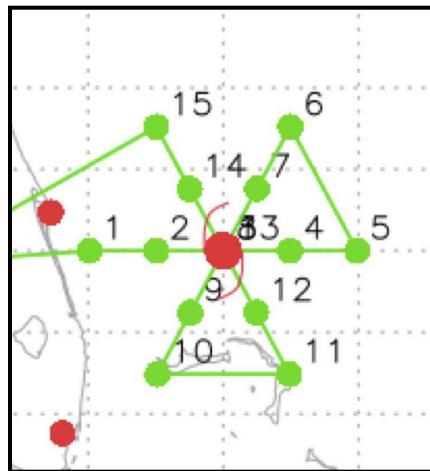
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**Butterfly:**

**In-Pattern Duration:** ~ 3 h 25 min (P-3), ~2 h (G-IV)

**Leg Lengths:** 105 n mi (195 km)

**Dropsondes:** centers, mid-points and turn points of each leg [15 sondes total]



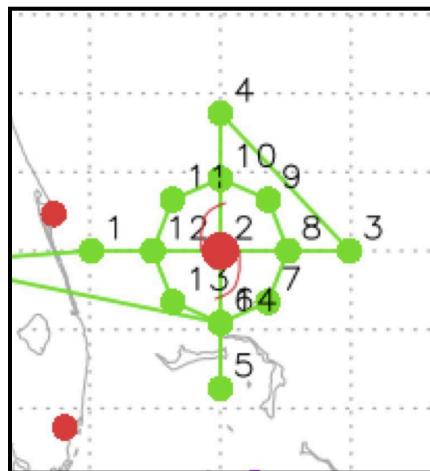
**P-3 Circumnavigation:**

**In-Pattern Duration:** ~ 4 h 5 min

**Leg Lengths (Figure-4):** 105 n mi (195 km)

**Circumnavigation Radius:** 50 n mi (95 km)

**Dropsondes:** center of 1<sup>st</sup> pass, end points of Figure-4 and vertices of octagon [14 sondes total]



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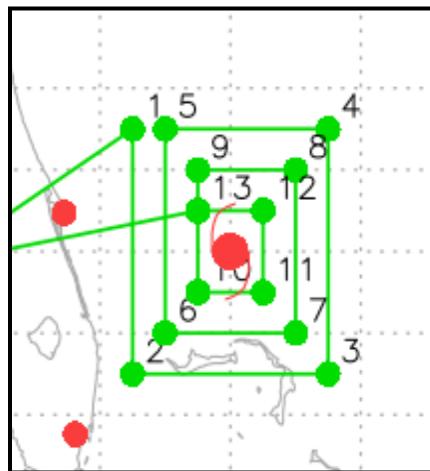
**Square Spiral:**

**In-Pattern Duration:** ~ 5 h 50 min (P-3), ~ 3 h 20 min (G-IV)

**Leg Lengths:** 180 n mi (335 km) on a side

**Leg Increments:** 0.5 deg (30 n mi)

**Dropsondes:** turn points [13 sondes total]



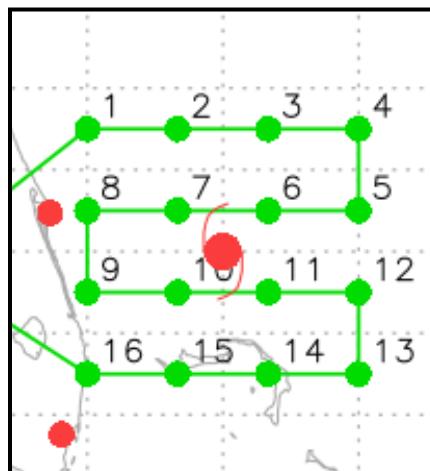
**Lawn Mower:**

**In-Pattern Duration:** ~ 4 h 20 min (P-3), ~ 2 h 25 min (G-IV)

**Leg Lengths:** 4 deg (240 n mi) x 3 deg (180 n mi) box

**Leg Increments:** 1.0 deg (60 n mi)

**Dropsondes:** turn points and 2 equally spaced mid-points along E-W legs [16 sondes total]



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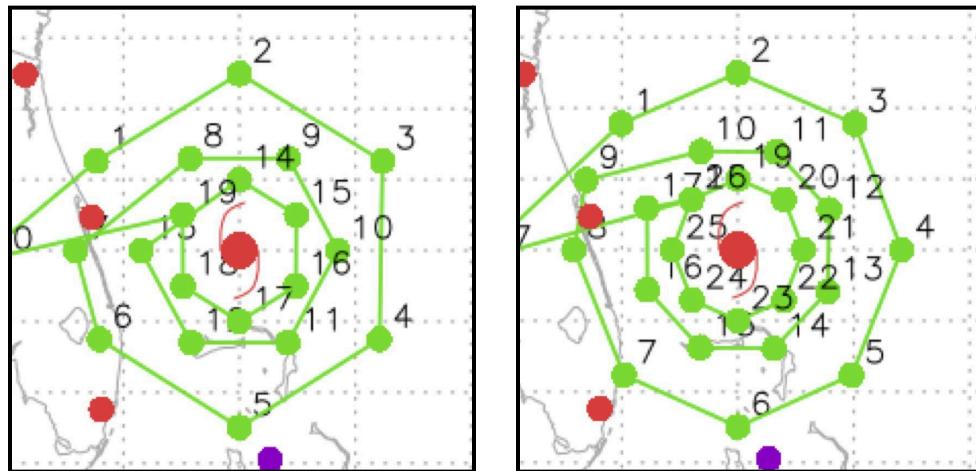
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**G-IV Circumnavigation:**

**In-Pattern Duration:** ~ 4 h 25 min (hexagon), ~ 4 h 35 min (octagon)

**Circumnavigation Radii:** 150, 90, 60 n mi (280, 165, 110 km)

**Dropsondes:** vertices of hexagon (octagon) [19 (26) sondes total]



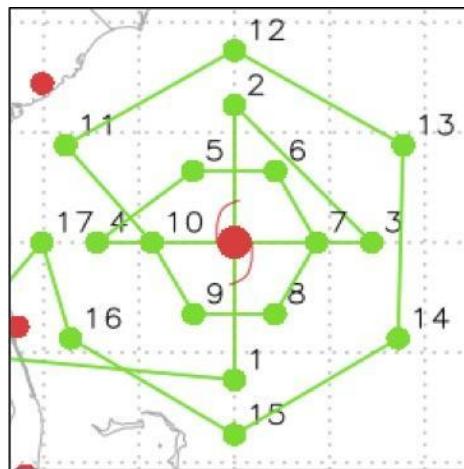
**G-IV Figure-4 with Double Circumnavigation:**

**In-Pattern Duration:** ~ 6 h 20 min (G-IV)

**Fig.-4 Leg Lengths:** 150 n mi (275 km)

**Circumnavigation Radii:** 90, 210 n mi (165, 390 km)

**Dropsondes:** center of 1<sup>st</sup> pass, end points of Fig-4, vertices of inner & outer hexagons [17 sondes total]



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**G-IV Star (Star 1) & Star with Circumnavigation (Star 2):**

**In-Pattern Duration:** ~ 4 h (Star 1), ~ 5 h 15 min (Star 2)

**Inner Point Radius (Star 1 & 2):** 90 n mi (165 km)

**Outer Point Radius (Star 1 & 2):** 210 n mi (390 km)

**Circumnavigation Radius (Hexagon):** 90 n mi (165 km)

**Dropsondes:** vertices of star (Star 1 & 2) and hexagon (Star 2) [13 (19) sondes total]

*Note: for outer points: every 0.5° adjustment inward/outward, subtracts/adds ~45 min from/to the pattern*  
*Note: for inner points: adjusting from 90 n mi to 60 n mi subtracts ~15 min from the pattern*

