EO C440.06 – USE STAR CHARTS

1. **Performance**: Use Star Charts
2. **Conditions**:
   a. Given:
      (1) Planisphere,
      (2) Red-filtered flashlight,
      (3) Star charts,
      (4) Supervision, and
      (5) Assistance as required.
   b. Denied: Nil.
   c. Environmental:
      (1) Classroom or training area large enough to accommodate the entire group, and
      (2) An open outdoor area with clear sky, at night, away from light pollution.
3. **Standard**: The cadet shall use star charts to identify elements of the night sky.
4. **Teaching Points**:

TP	Description	Method	Time	Refs
TP1	Explain how the celestial sphere is divided, to include: a. how earth and sky are assumed to be concentric, b. celestial poles, and c. celestial equator.	Interactive Lecture	5 min	C3-176 (p. 168) C3-179 (pp. 28–29)
TP2	Explain how the sphere of the sky is represented on star charts, to include: a. declination, b. right ascension, and c. the plane of the ecliptic.	Interactive Lecture	5 min	C3-176 (pp. 212–217) C3-179 (pp. 99–119)
TP3	Explain how to interpret a star chart, to include: a. date, b. time, c. latitude, d. orientation, and e. planets.	Interactive Lecture	5 min	C3-176 (pp. 212–217) C3-179 (pp. 99–119)

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TP	Description	Method	Time	Refs
TP4	Explain, demonstrate and have the cadets identify elements of the night sky by exploring aspects of a planisphere, to include: a. planisphere design, b. the lack of planetary data on a planisphere, c. date, d. time, e. midnight time mark, f. latitude, g. orientation, h. horizon, i. constellations, and j. stars.	Demonstration and Performance	40 min	C3-180 (p. 1) C3-221

5. **Time**:

a.	Introduction / Conclusion:	5 min
b.	Interactive Lecture:	15 min
c.	Demonstration and Performance:	40 min
d.	Total:	60 min

6. **Substantiation**:

   a. An interactive lecture was chosen for TPs 1–3 to introduce the cadets to star charts and give an overview of the subject.

   b. A demonstration and performance was chosen for TP 4 as it allows the instructor to explain and demonstrate planisphere use while providing an opportunity for the cadets to practice the skill under supervision.

7. **References**:

   a. C3-176 ISBN 1-55407-071-6 Moore, P. (2005). *Atlas of the universe*. Richmond Hill, ON: Firefly Books.

   b. C3-179 ISBN 1-55209-302-6 Dickenson, T. (2001). *Night watch: A practical guide to viewing the universe*. Willowdale, ON: Firefly Books.

   c. C3-180 ISBN 1-55297-853-2 Scagell, R. (2004). *Firefly planisphere: Latitude 42 deg N*. Willowdale, ON: Firefly Books.

   d. C3-221 National Research Council of Canada. (2007). *Explore the night sky*. Retrieved December 3, 2007, from http://www.nrc-cnrc.gc.ca/eng/education/astronomy/constellations/html.html

8. **Training Aids**:

   a. Presentation aids (eg, whiteboard / flip chart / OHP / multimedia projector) appropriate for the classroom / training area,

   b. Planisphere star chart,

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c. Red-filtered flashlight,

d. Star charts and

e. Desktop globe.

9. **Learning Aids**:

a. Planisphere star chart,

b. Red-filtered flashlight, and

c. Star charts.

10. **Test Details**: Nil.

11. **Remarks**:

a. TPs 1–3 may be taught in the classroom or in the field, as appropriate.

b. Cadets who are qualified Advanced Aerospace may assist with this instruction.

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