

## Star and Planet Identification Problems

### Star Identification of Navigational Stars

SID B1. At 0520 zone time, on 17 March while taking stars for a morning fix, you observe an unidentified star bearing  $050^{\circ}$  T at an observed altitude (ho) of  $45^{\circ} 00.0'$ . Your DR position at the time of the sight is latitude  $27^{\circ} 23.0'$  N, longitude  $39^{\circ} 42.0'$  W. The chronometer time of the sight is 08h 22m 15s and the chronometer error is 1m 45s fast. Your vessel is steaming on a course of  $300^{\circ}$  T at a speed of 18 knots. What star did you observe?

- a) Altair
- b) Alkaid
- c) Arcturus
- d) **Deneb - correct**

SID B2. At 1845 zone time on 17 March, while taking stars for an evening fix, you observe an unidentified star bearing  $200^{\circ}$  T at an observed altitude of  $53^{\circ} 45.0'$ . Your DR position at the time of the sight is latitude  $25^{\circ} 10.0'$  N, longitude  $66^{\circ} 48.0'$  W. The chronometer time of the sight is 10h 47m 49s and the chronometer error is 1m 54s fast. Your vessel is steaming on a course of  $290^{\circ}$  at a speed of 18 knots. What star did you observe?

- a) Altair
- b) Mirfak
- c) Pollux
- d) **Rigel - correct**

SID B3. On 14 January your 0550 zone time DR position is latitude  $25^{\circ} 26.0'$  N, longitude  $38^{\circ} 16.0'$  W. You observe an unidentifiable star bearing  $004.5^{\circ}$  T, at an observed altitude (ho) of  $40^{\circ} 10.0'$ . The chronometer reads 08h 48m 51s and is 01m 22s slow. What star did you observe?

- a) Gienah
- b) **Kochab - correct**
- c) Gacrux
- d) Eltanin

SID B4. On 22 April, your 1852 zone time DR position is latitude  $23^{\circ} 54.5'$  N, longitude  $117^{\circ} 36.8'$  W. You observe an unidentifiable star bearing  $259^{\circ}$  T at an observed altitude (ho) of  $41^{\circ} 15.2'$ . The chronometer reads 02h 54m 53s and is 02m 51s fast. What star did you observe?

- a) Diphda
- b) **Betelgeuse - correct**
- c) Gienah
- d) Arcturus

### Star Identification of Minor Stars

SID B5. On 12 June, your 1945 DR position is latitude  $21^{\circ} 47.0'$  N, longitude  $46^{\circ} 52.0'$  W when you observe a faint unidentifiable star through a break in the clouds. The star bears  $130^{\circ}$  T at a sextant altitude (hs) of  $45^{\circ} 21.2'$ . The index error is  $0.5'$  on the arc and the height of eye is 45 feet. The chronometer reads 10h 43m 27s and the chronometer error is 1m 46s slow. What star did you observe?

- a) Theta Carinae
- b) Epsilon Leonis
- c) **Beta Librae - correct**
- d) Zeta Puppis

SID B6. On 12 June, your 1845 DR position is latitude  $21^{\circ} 47.0'$  N, longitude  $46^{\circ} 52.0'$  W when you observe a faint unidentifiable star through a break in the clouds. The star bears  $162^{\circ}$  T at a sextant altitude (hs) of  $28^{\circ} 36.5'$ . The index error is  $0.5'$  on the arc and the height of eye is 45 feet. The chronometer reads 09h 43m 27s and the chronometer error is 1m 46s slow. What star did you observe?

- a) Gamma Virginis
- b) **Iota Centauri - correct**
- c) Spica
- d) Mimosa

SID B7. On 12 June, your 1845 DR position is latitude  $21^{\circ} 47.0'$  N, longitude  $46^{\circ} 52.0'$  W when you observe a faint unidentifiable star through a break in the clouds. The star bears  $031^{\circ}$  T at a sextant altitude (hs) of  $70^{\circ} 10.3'$ . The index error is  $0.5'$  on the arc and the height of eye is 45 feet. The chronometer reads 09h 43m 27s and the chronometer error is 1m 46s slow. What star did you observe?

- a) Sheratan
- b) Ruchbah
- c) Mimosa
- d) **Cor Caroli - correct**