

SOLAS Ch V Referenc	Equipment required	Class of vessel											
		Class I	Class II	Class II A	Class V	Class VI	Class VII	Class VIIA	Class VIII	Class IX	Class IXA	Class X	Class XI
19.2.1.1	Magnetic compass	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19.2.1.2	Pelorus or compass bearing device	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19.2.1.3	Means of correcting heading and bearings to true	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19.2.1.4	Nautical charts and nautical publications, including back-up arrangements, if partly or fully fulfilled by electronic means	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19.2.1.5													
19.2.1.6	Global Navigation Satellite System	✓	✓	✓	✓	✓	✓	✓	✓	-	-	✓	✓
19.2.1.7	Radar reflector	✓ <sup>1</sup>	✓ <sup>1</sup>	✓ <sup>1</sup>	✓ <sup>1</sup>	✓ <sup>1</sup>	✓ <sup>1</sup>	✓ <sup>1</sup>	✓ <sup>1</sup>	✓ <sup>1</sup>	✓ <sup>1</sup>	✓ <sup>1</sup>	✓ <sup>1</sup>
19.2.1.8	Sound reception system on ship's where the bridge is totally enclosed	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19.2.1.9	Means to communicate heading information to the emergency steering position, if provided	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19.2.2.1	Spare magnetic compass	✓	✓	✓	-	-	✓ <sup>2</sup>	✓ <sup>2</sup>	✓ <sup>2</sup>	-	-	-	-
19.2.2.2	Daylight signalling lamp	✓	✓	✓	✓ <sup>3</sup>	✓ <sup>3</sup>	✓ <sup>3</sup>	✓ <sup>3</sup>	✓ <sup>3</sup>	✓ <sup>3</sup>	✓ <sup>3</sup>	✓ <sup>3</sup>	✓ <sup>3</sup>
19.2.2.3	Bridge Navigational Watch Alarm System	✓	✓	✓	-	-	✓ <sup>2</sup>	✓ <sup>2</sup>	✓ <sup>2</sup>	-	-	-	-
19.2.2.4													
19.2.3.1	Depth sounding device	✓	✓	✓	✓ <sup>4</sup>	✓ <sup>4</sup>	✓ <sup>4</sup>	✓ <sup>4</sup>	✓ <sup>4</sup>	✓ <sup>4</sup>	✓ <sup>4</sup>	✓ <sup>4</sup>	✓ <sup>4</sup>
19.2.3.2	9 GHz Radar	✓	✓	✓	✓ <sup>4</sup>	✓ <sup>4</sup>	✓ <sup>4</sup>	✓ <sup>4</sup>	✓ <sup>4</sup>	-	✓ <sup>4</sup>	✓ <sup>4</sup>	✓ <sup>4</sup>
19.2.3.3	Electronic plotting aid (Not required if fitted with Automatic Tracking Aid)	✓	✓	✓	✓ <sup>4</sup>	✓ <sup>4</sup>	✓ <sup>4</sup>	✓ <sup>4</sup>	✓ <sup>4</sup>	-	✓ <sup>4</sup>	✓ <sup>4</sup>	✓ <sup>4</sup>
19.2.3.4	Speed and distance measuring device (speed and distance through the water)	✓	✓	✓	✓ <sup>4</sup>	✓ <sup>4</sup>	✓ <sup>4</sup>	✓ <sup>4</sup>	✓ <sup>4</sup>	-	✓ <sup>4</sup>	✓ <sup>4</sup>	✓ <sup>4</sup>
19.2.3.5	Transmitting heading device (Not required if fitted with Gyro Compass)	✓	✓	✓	✓ <sup>4</sup>	✓ <sup>4</sup>	✓ <sup>4</sup>	✓ <sup>4</sup>	✓ <sup>4</sup>	-	✓ <sup>4</sup>	✓ <sup>4</sup>	✓ <sup>4</sup>
19.2.4	Automatic Identification System	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19.2.5.1	Gyro Compass	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>
19.2.5.2	Gyro Compass heading Repeater	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>
19.2.5.3	Gyro Compass Bearing Repeater	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>
19.2.5.4	Rudder, Propeller, Thrust, Pitch and Operational Mode Indicators	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>
19.2.5.5	Automatic Tracking Aid	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>
19.2.6	Failure of one piece of equipment should not reduce the ship's ability to meet the requirements of the magnetic compass, pelorus or compass bearing device and nautical charts and nautical publications.	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>	✓ <sup>5</sup>
19.2.7.1	3 GHz Radar	✓ <sup>6</sup>	✓ <sup>6</sup>	✓ <sup>6</sup>	✓ <sup>6</sup>	✓ <sup>6</sup>	✓ <sup>6</sup>	✓ <sup>6</sup>	✓ <sup>6</sup>	✓ <sup>6</sup>	✓ <sup>6</sup>	✓ <sup>6</sup>	✓ <sup>6</sup>
19.2.7.2	Second Automatic Tracking Aid (Not required if fitted with a Automatic Radar Plotting Aid)	✓ <sup>6</sup>	✓ <sup>6</sup>	✓ <sup>6</sup>	✓ <sup>6</sup>	✓ <sup>6</sup>	✓ <sup>6</sup>	✓ <sup>6</sup>	✓ <sup>6</sup>	✓ <sup>6</sup>	✓ <sup>6</sup>	✓ <sup>6</sup>	✓ <sup>6</sup>
19.2.8.1	Automatic Radar Plotting Aid	✓ <sup>7</sup>	✓ <sup>7</sup>	✓ <sup>7</sup>	✓ <sup>7</sup>	✓ <sup>7</sup>	✓ <sup>7</sup>	✓ <sup>7</sup>	✓ <sup>7</sup>	✓ <sup>7</sup>	✓ <sup>7</sup>	✓ <sup>7</sup>	✓ <sup>7</sup>
19.2.8.2	Heading or Track Control System	✓ <sup>7</sup>	✓ <sup>7</sup>	✓ <sup>7</sup>	✓ <sup>7</sup>	✓ <sup>7</sup>	✓ <sup>7</sup>	✓ <sup>7</sup>	✓ <sup>7</sup>	✓ <sup>7</sup>	✓ <sup>7</sup>	✓ <sup>7</sup>	✓ <sup>7</sup>
19.2.9.1	Rate of Turn Indicator	✓ <sup>8</sup>	✓ <sup>8</sup>	✓ <sup>8</sup>	✓ <sup>8</sup>	✓ <sup>8</sup>	✓ <sup>8</sup>	✓ <sup>8</sup>	✓ <sup>8</sup>	✓ <sup>8</sup>	✓ <sup>8</sup>	✓ <sup>8</sup>	✓ <sup>8</sup>
SOLAS Ch V Referenc	Equipment required	Class of vessel						Class of vessel					
		Class I	Class II	Class II A	Class V	Class VI	Class VII	Class VIIA	Class VIII	Class IX	Class IXA	Class X	Class XI
19.2.9.2	Speed and Distance Measuring Device (over the ground in the forward and athwartships direction)	✓ <sup>8</sup>	✓ <sup>8</sup>	✓ <sup>8</sup>	✓ <sup>8</sup>	✓ <sup>8</sup>	✓ <sup>8</sup>	✓ <sup>8</sup>	✓ <sup>8</sup>	✓ <sup>8</sup>	✓ <sup>8</sup>	✓ <sup>8</sup>	✓ <sup>8</sup>
19.2.10	Electronic Chart Display and Information System	✓ <sup>9</sup>	✓ <sup>9</sup>	✓ <sup>9</sup>	-	-	✓ <sup>10</sup>	✓ <sup>10</sup>	✓ <sup>10</sup>	-	-	✓ <sup>10</sup>	✓ <sup>10</sup>
19.2.11													
19-1	Long-Range Identification and Tracking	✓ <sup>11</sup>	✓ <sup>11</sup>	✓ <sup>11</sup>	-	-	✓ <sup>11</sup>	-	✓ <sup>11</sup>	-	-	✓ <sup>11</sup>	-
20.1 & 20.3	Voyage data recorders	✓	✓	-	-	-	✓ <sup>12</sup>	-	✓ <sup>12</sup>	-	-	✓ <sup>12</sup>	-
20.2 & 20.3	Simplified voyage data recorder (S VDR)	-	-	-	-	-	✓ <sup>13</sup>	-	✓ <sup>13</sup>	-	-	✓ <sup>13</sup>	-

<sup>1</sup> only required on vessels <150 GT

<sup>2</sup> required on vessels of >150 GT

<sup>3</sup> required on vessels of >100 GT

<sup>4</sup> required on vessels of >300 GT

<sup>5</sup> required on vessels of >500 GT

<sup>6</sup> required on vessels >3,000 GT

<sup>7</sup> required on vessels >10,000 GT

<sup>8</sup> required on vessels >50,000 GT

<sup>9</sup> required on passenger vessels >500 GT, on international voyages

<sup>10</sup> required for international voyages, on all tankers >3,000 GT, on all cargo ships >3,000 GT constructed on or after 1 July 2013 and on all cargo ship

<sup>11</sup> required on vessels >300 GT, on international voyages, other than vessels that comply with Reg. 79H (2)

<sup>12</sup> required on vessels >3,000 GT, on international voyages

<sup>13</sup> may be fitted in lieu of an Voyage Data Recorder on vessels >3,000 GT, built before 1 July 2002, on international voyages

**Notes:**

- 1) When "other means" are permitted under this SOLAS Ch V, Reg 19, such means must be approved by Authority in accordance with SOLAS Ch V,
- 2) The navigational equipment and systems referred to in the table shall be so installed, tested and maintained as to minimize malfunction.
- 3) Navigational equipment and systems offering alternative modes of operation shall indicate the actual mode of use.
- 4) Integrated bridge systems shall be so arranged that failure of one sub-system is brought to immediate attention of the officer in charge of the navigational watch by audible and visual alarms, and does not cause failure to any other sub-system. In case of failure in one part of an integrated navigational system, it shall be possible to operate each other individual item of equipment or part of the system separately.