Navigating in areas of unreliable satellite signals

International Chamber of Shipping
Shaping the Future of Shipping

Global Navigation Satellite System (GNSS) jamming and spoofing are on the rise, here's what to do:

FIRST SPOT THE SIGNS

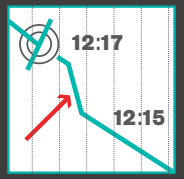
1

If sailing in areas with reported GNSS problems, such as the Baltic Sea or the Red Sea, monitor marine safety information (MSI) broadcasts

2

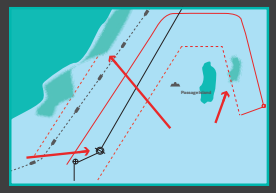
Check for audible or visual alarms on the GNSS unit or navigation systems using GNSS input such as ECDIS or autopilot

3



Recognise significant position jumps with past track deviation and no planned change

4

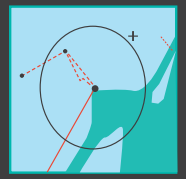


Check radar image overlay with ECDIS

5

Check for AIS overlay mismatch with radar return

6



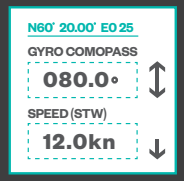
Recognise clear GNSS signal manipulation

THEN NAVIGATE SAFELY

1

Inform the master

2



Use dead reckoning (DR). Navigate using speed through water and heading inputs, then compare the DR position with the GPS/manual fix

3

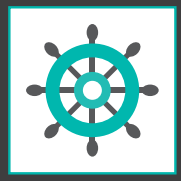
If necessary, post additional look outs

4

Increase frequency of manual position fixing by:

- Taking multiple visual bearings, if near a coast, to fix position manually
- Using radar range and bearings off conspicuous objects to confirm position
- Monitoring distances using parallel indexing (PI)
- Referring to the depth line. Cross-check the echo sounder depth with that on the charted position

5



If necessary, reduce vessel speed and disengage autopilot

6

Report any GPS signal disruptions to local coastal authorities and NAVCEN, and monitor broadcasts