

2ND MEETING OF THE EXAM COMMISSIONS FOR PROFESSIONAL QUALIFICATIONS

**Examination of competence for sailing
with the aid of radar**

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Examination of competence for sailing with the aid of radar



Directive 2017/2397

- **Article 17**

- Requires practical examination;
- On board a vessel or simulator.



- **Annex II.3.2: Essential competence requirements for radar navigation:**

The boatmaster shall be able to:

- take appropriate action in relation to navigation with the aid of radar before casting off;
- interpret radar displays and analyse the information supplied by radar;
- reduce interference of varying origin;
- navigate by radar taking into account the agreed set of rules applicable to inland navigation and in accordance with the regulations specifying the requirements for navigating by radar (such as manning requirements or technical requirements for vessels);
- handle specific circumstances, such as density of traffic, failure of devices, dangerous situations.

ES-QIN

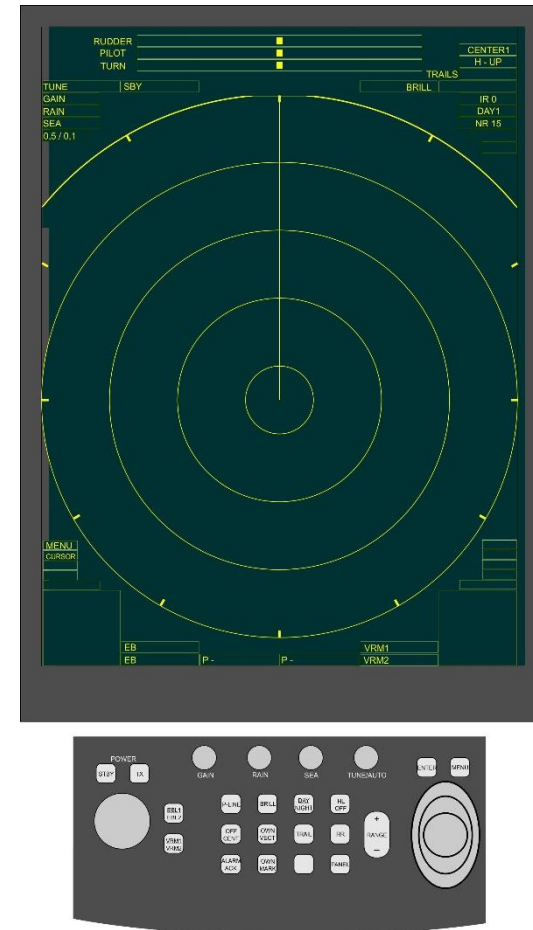
- **ANNEX I STANDARDS FOR COMPETENCES AND CORRESPONDING KNOWLEDGE AND SKILLS**
 - IV. STANDARDS OF COMPETENCE FOR SAILING WITH THE AID OF RADAR
 - Overview competences, knowledge and skills

- **ANNEX II STANDARD FOR PRACTICAL EXAMINATIONS**
 - I. STANDARDS FOR THE PRACTICAL EXAMINATION FOR OBTAINING A SPECIFIC AUTHORISATION FOR SAILING WITH THE AID OF RADAR
 - 1. Specific competences and assessment situations
 - Overview of 19 examination elements
 - Examiners are free to decide about the content of the individual examination elements.
 - Examiners shall test elements 1-16 and at least one of the elements 17 to 19.
 - Applicants must reach a minimum of 7 out of 10 points in each element.
 - 2. Technical requirements for craft used for practical examination
 - ES-TRIN

No	Competences	Examination element
1	1.1.	switch on, adjust and control the functioning of navigational radar installations;
2	1.1.	switch on, adjust and control the functioning of rate-of-turn indicator;
3	1.1.	interpret the radar display correctly by setting the range, resolution, brightness, gain, contrast, other connected apparatus, centre and tune;
4	1.1.	use the rate-of-turn indicator e.g. by setting the rate-of-turn in accordance with maximum rate-of-turn of the craft;
5	2.1	identify the position of the antenna on the screen and the heading line, the setting of position, course and turning direction of the own craft and the determining distances and reach;
6	2.1	interpret the behaviour of other traffic participants (stationary craft, oncoming craft and craft heading the same direction);
7	2.2	analyse the information supplied by radar such as heading line, electronic bearing line, range rings, and variable range marker, target trails, decentering and parallel lines and to explain the radar picture;
8	3.1	reduce disturbances coming from the own craft by checking antenna, by reducing shadows and multiple reflections e. g. in the area of holds;
9	3.2	take action to reduce disturbances from the environment by reducing influence from rain and waves, by correctly dealing with scattered fields (e.g. from bridges), false/ghost echoes from power transmission lines and cables as well as with shadowing and multipath effects;
10	3.3	remove disturbances coming from other navigational radar installations by using interference rejection;
11	4.1.	correctly attribute tasks to deck crew members;
12	4.1.	ensure cooperation between the person at helm and the person using navigational radar installations according to visibility and the features of the wheelhouse;
13	4.1	use rate-of-turn indicators and inland ECDIS or similar displays in combination with radar;
14	4.1.	act according to police regulations in case of reduced visibility and in case of good visibility;
15	4.1.	use radio, sound signals and to agree on course by using information supplied by radar;
16	4.1.	give commands to the person at helm including checking the person's required knowledge and skills
17	5.1	take appropriate measures in high traffic density;
18	5.1.	take appropriate measures in the case of failure of devices;
19	5.1.	react appropriately in unclear or dangerous traffic situations.

1. Start & adjust radar (10min)

- ✓ Includes the examination of the competences 1.1 / 3.2 / 3.3
- ✓ The weighting has variation from 1 to 3
- ✓ The most important parts of the survey has score 3.
- ✓ In this way, the emphasis is placed on the essential parts related to adjusting the radar.



2. Analyse radarscreen (10min)

- ✓ Includes the examination of the competences 2.1 / 2.2 / 3.1 / 3.2
- ✓ Position the radar on the vessel
- ✓ Name and distinguish stationary and moving objects.
- ✓ Describe other observations.
- ✓ With the use of a navigation chart locate and name the objects



3. radar navigation (25min)

- ✓ Includes the examination of the competences 4.1 / 5.1
- ✓ To decide the right course or action integrate all navigation aids based on the combination of all information and observations
- ✓ Take the appropriate measures, in a complex traffic-situation and/or an emergency, to bring the vessel in a safe position. Inform the surrounding vessels, traffic-center and authorities, with all regulative tools



4. Radar navigation with a wheelman (15 min)

- ✓ Includes the examination of the competences 1.1 / 4.1
- ✓ This starts with specific, unambiguous agreements between the helmsman and the radar observer to ensure safe navigation.
- ✓ Anticipate on time considering the delay due to the operation of two people.
- ✓ Consider the influence of the inertia of the vessel in combination with speed and the rate of turn.
- ✓ Estimate the external influences.





Thank you for your attention!

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