

NAUTICAL SCIENCE

Introduction

The report is the compilation of developments in preparation for the 2025 NSC final examination and recommendations of practical measures to be implemented for prudent maintenance, correction, and advancement of the subject in schools.

The marking of the final examination was successfully conducted in Johannesburg, arranged by the IEB. The marking committee included the subject's Examiner, Internal Moderators, and educators from various 'maritime' schools.

This report should be employed as the foundation for enhancements in the further implementation of measures that will improve the administration, teaching, learning, and assessment of Nautical Science.

General Aspects

Appropriate Packaging of Examination Materials

Majority of examination centres remain delinquent in compliance to the letter with the appropriate packaging guidelines of examination scripts and charts for shipment to marking centres. Notwithstanding the expressed non-compliance, all answer scripts, charts, and radar plotting sheets were received and matched accordingly.

Use of Marksheet for Chartwork Marking

The first use of a marksheet for Section A: Practical Chartwork proved effective in 2024. Hence, it was employed again in the 2025 examination. It introduced and ensured the highest delineation of marks, standardisation, consistency, and traceability of mark allocation for markers and moderators.

The rubric is an adaptable answer model to varying chart drawing questions. It is recommended that it be established in all applicable internal and external assessments henceforth.

Marking Guidelines Standardisation

A considerable amount of time was afforded to the marking guidelines standardisation process, which proceeds commencement of the actual marking.

During this process, alternative solutions did come through. The pre-marking discussion caters for the inclusion of all correct answer options into the resultant standardised marking guidelines. Teachers and candidates are cautioned on the adoption of answer methods that shy away from exhibiting steps that precede the final answer. Omission of showing workings leading to the eventual answer yields minimum marks.

Presentation

All the questions, with a very few exceptions, were attempted, and in some cases the answers were completed satisfactorily. Although rough work is encouraged to be done on one side and distinctive from the formal answer, it is accepted that this may not be feasible in some instances, particularly practical chartwork workings, as most of the answers are done on the chart than in answer booklet. However, the encroachment of rough work onto the main answer in other sections, is cautioned against. Many candidates continued with the next question on the same page without leaving enough lines in-between. This caused the work to be cramped, untidy and difficult to mark.

Whilst candidates tend to adopt their own sequence over that suggested in the question paper when answering, candidates split their answers, with the second part of one question at the end of another answer to another on another page. This split is strongly discouraged.

PAPER I

Most candidates attempted and completed all the required questions. Chartwork and astro-navigation sections contain the traditionally most challenging questions.

It is assessed that the now established inclusion of standard navigation formulae improves attempts of Section A – Celestial Navigation, Questions 1 and 2. Some candidates exhibit challenges in their rounding off protocol. Less than a handful of candidates rendered zero attempts to Questions 1 and 2.

Tidal Prediction Question 3.1 exhibits the establishment of the preferred interpolation method of tidal levels prediction. Most candidates score above the average in the tidal levels' calculation. It is assessed that the use of interpolation over the graph method improved the accuracy and correctness of attempts to this question. However, in the main, tidal theory (Questions 3.2–3.6) attempts were unsatisfactory. The practical application and/or retrieval of tidal definitions requires attention.

Most candidates rendered honourable attempts to most of Section B – Practical Chartwork Questions 4, 5, 6, and 7. A few poor attempts were tendered, by the same below-average candidates. General Chart Knowledge – Question 4 did not involve technical drawing/measurement on the chart per se. Candidates performing poorly in the technical Questions 5, 6, and 7 tend to be equally poor even in Question 4 and vice versa.

Technical chartwork Questions 5, 6, and 7 comprise the most challenging practical chartwork. These attract the weakest answers to questions, particularly from the below average candidates. Above-average candidates' presentation of the chartwork was neat and logical. However, that of poor candidates, if attempted at all, was inaccurate, untidy, and not labelled/symbolised accordingly. A few candidates rendered zero attempts to at least one of the technical chartwork questions.

On the instructions and information page, the variation was given as 25° W. It was subsequently changed to 15° W in Questions 1 and 2; and back to 25° W Questions 5, 6, and 7. Most candidates kept abreast of the changes in variation, that is, they correctly effected the correct variant of variation. A few candidates disregarded the changes and lost marks accordingly. Question 6 involved the application of different compass deviation – 4° E in the initial compass heading and bearing; and 3° E to the subsequent bearing in accordance with a change in compass heading. Bar a few top achievers, most candidates 'forgot' to effect the correct variant of deviation. The correct application of the appropriate type of deviation and/or variation requires thorough reinforcement to ensure candidates fully understand the concept.

PAPER II

At the very least, all questions in Paper 2 were attempted, with varying degrees of accuracy.

It is assessed that the inclusion of formulae improves Section A's Sailings Calculation.

- 1.1 Some candidates were let down by their improper rounding off practice, particularly in the course calculations. The use of rationalised/rounded-off digits attracts errors. This tendency was spotted, though not prevalent.
- 1.2 An alarming majority of candidates submitted incorrect attempts to Sailings Theory. It is evident that most candidates invest little to no energy in Sailings Theory as opposed to the Sailings Calculation.

Excepting for a few, Section B – Question 2.1 – Radar: radar plots were correct. A hint of correlation exists between a candidate's chartwork and radar plot capabilities. That is, those who tend to do well in Paper 1 Section B – Technical Chartwork Questions 5, 6, and 7 drawings, in turn do well in Paper 2 Question 2.1 – Radar Plotting, and vice versa. A similar correlation is traceable between attempts of Paper 2 Questions 3 – Colregs and Paper 2 Question 2.3 – Interpretation of a radar plot drawing. That is, candidates that exhibit a fair grasp of Colregs tend to submit the correct collision avoidance actions for a radar plot scenario. After all, radar plot is within the ambit of Colregs. Like formulae, a target report template/skeleton was provided in the Question paper of 2025. This would be the case henceforth.

Attempts to Section B – Question 3 were mostly accurate with some exceptions. Appropriate application of memorised knowledge remains wanting. Furthermore, candidates tend to give the correct yet generic actions to situation/scenario-based questions. Candidates must be encouraged to give situation-specific rather than generic collision avoidance actions. Candidates tend to furnish poorer attempts to light signals (Question 3.4.1) – 2025 was no exception.

Section B – Question 4 – IALA – Question 4 for some perplexing reason, this question continues to attract lower scores than expected within the overall scheme of questions. Learning via practical role-play with physical buoys may assist in livening up the module and improve candidates' results.

Many attempts to Section B – Question 5 failed to answer the question comprehensively. Most candidates simply listed any fire actions without restricting themselves to those undertaken by OOW on a vessel's bridge. The most important and priority actions received marks.

Section B – Question 6 – Sea Transport, most candidates submitted an acceptable drawing showing the desired design features of a crude oil tanker. Candidates are cautioned against placing too much emphasis on generic ship parts and fitting at the expense of design features.

In general, most candidates submitted acceptable attempts to Section C – Question 7 – Maritime Communication. Some candidates erroneously supplied the 'signals' instead of the required 'pro/code words' in Question 7.2. Adherence to the most correct Maritime Communication terminology is encouraged.

The 2025 Section C – Question 8 – Meteorology saw the first introduction of synoptic chart/map extract. Many candidates submitted commendable attempts. Synoptic meteorology must be increasingly embraced as it is the melting pot of all weather and climate studies.

OVERALL CANDIDATE PERFORMANCE

The overall performance of majority of candidates (and schools) is commendable as it hovers about the average and above. Attainment of far below average performance remains an exception rather than the norm. The exhibited performance quality and quantity are encouraging.

It is apparent that candidates perform better in Paper 1 than in 2. This variance may be attributed to the inherent nature of the two papers. Paper 1 is more 'cast-in-stone' whilst Paper 2 welcomes greater variance. Candidates are encouraged to realise, accept, and capitalise on the intrinsic nature of the papers.