IACS CIC for Emergency Power Supply Testing – 2025 Report (Rev.1)

1.Background

IACS agreed to conduct a Concentrated Inspection Campaign (CIC) which was held for 12 months commencing from 1 January 2025 and ending 31 December 2025 to examine the Emergency Power Supply of the ship. A ship was subject to only one inspection under this CIC during the period of the IACS campaign.

This report summarizes statistical data based on the reports provided by all Survey Panel members for the inspections conducted during the 2025 whole year.

2.Observed deficiency and percentage

As mentioned in the Table below, the total No. of vessels inspected was 36723, which resulted in 853 vessels with an identified deficiency (2.32%). The type of specific deficiency is also listed.

Item 1	Total number of vessels inspected	36723
Item 2	Total number of vessels in which malfunction was observed	853
Item 3	Type of deficiency	
a.	Malfunction of control unit/circuit (i.e. PCB or control relay unit, etc.)	160
b.	Malfunctioned ACB	116
c.	Miss-selection of engine starting selection switch mode in emergency generator room	120
d.	Closing Quick-closing valve	214
e.	Malfunction of starting arrangement	136
f.	Malfunction of engine	77
g.	No power supply to the services essential for safety in an emergency	100
h.	Port restriction/regulation	592
i.	Others (failure/malfunction)*	72
	(testing could not be conducted)**	69

Details of Others(*),(**) are as follows:

*** (failure/malfunction)**

Following other failures/malfunctions have been reported by Survey Panel members:

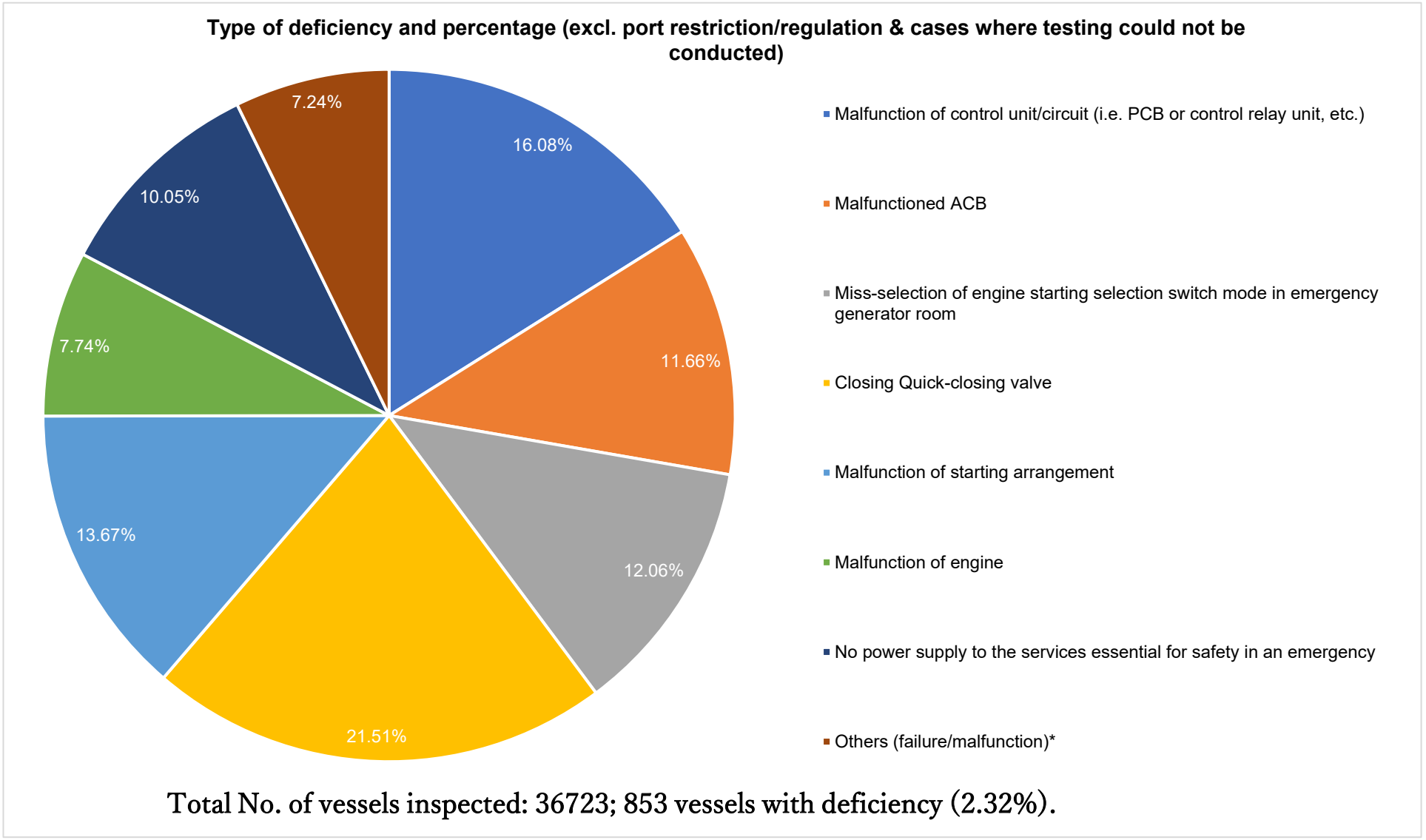
- No power supply to emergency light
- No over speed stop
- Cooling system failure
- Filters clogged
- Air present in the fuel lines
- Excessive water within the starting air receiver
- Low insulation values in generator
- Crew unfamiliar
- No Risk Assessment / Similar measure / Procedure for Emergency D/G controlled blackout test was established or included in Company and Shipboard SMS, Blackout drills were not regularly scheduled in the Company and Shipboard SMS

**** (testing could not be conducted)**

Following reasons have been given to explain why testing could not be conducted:

- Cargo operation
- Maintenance of navigation equipment powered by emergency power supply
- Firmly declined by crew members or superintendents due to concerns about the impact on navigational equipment
- Due to the repair work was carried out in engine room, it was not suitable to carry out the blackout test
- Absence of the electrician
- The emergency generator type installed onboard was not arranged with the automatic starting arrangement. The transitional source of emergency electrical power supply which consist of an accumulator battery was provided onboard and maintained to supply automatically in the event of failure of main source of electrical power.

3.Type of deficiency and percentage (excl. port restriction/regulation & cases where testing could not be conducted) are shown in the figure below:



Total No. of vessels inspected: 36723; 853 vessels with deficiency (2.32%).

4. Conclusions and Recommendations for Emergency Power Supply Testing CIC

4.1 Conclusions

Based on the comprehensive data analysis, the following main conclusions are drawn by Survey panel:

(1) Recurring Equipment Failure Points

The closing quick-closing valve, control unit/circuit (PCB/relay), and Emergency Diesel Generator(EDG) starting arrangement are the most critical and recurring failures which indicating industry-wide issues with equipment maintenance, installation quality, or component durability. These failures directly compromise SOLAS Ch. II-1 Reg. 42/43 compliance for automatic Emergency Power Supply (EPS) activation.

(2) SMS Non-Compliance

The notable non-equipment deficiency is lack of controlled blackout test procedures in company and shipboard SMS which is directly contrary to SOLAS Ch. II-1 Reg. 42.7/43.7 (periodic full system testing). Simulated blackout tests (via RTS/sequence test) are widely used but do not test the actual circuit paths required for real blackouts, which gives ships' engineers a false sense of readiness of the ship's emergency systems in the case of an emergency.

(3) Operational & Human Factor Gaps

Crew unfamiliarity with EDG operation, miss-selection of starting switch modes highlight gaps in crew training, competency, and safety culture. Human error is a major contributor to malfunctions during real emergencies.

4.2 Recommendations

- During ISM audits, focus should be on ensuring that a procedure exists in the necessary detail for conducting a controlled blackout test for emergency diesel generators and may pay more attention to whether the testing arrangements and procedures for emergency diesel

generators adequately demonstrate the functionality of the emergency power supply system as a whole, including by means of controlled blackout testing where appropriate

- IACS will consider a further analysis to clarify the inspection and testing cycles and requirements for high-frequency malfunctional components such as quick-closing valves, control units and starting devices.
- IACS will consider further studies to standardize the design standards for emergency generator simulation tests to ensure that the design complies with the requirements of SOLAS.