ENGINE REGISTRATION SYSTEM (ERS)

WHY ERS?

> “When a crankshaft breaks once, it's an accident. A second time in the same place is a coincidence, but a third time is likely to be a structural failure. **The basic idea behind ERS is to find the third time.**”

Experts independently inspect similar failures (e.g., a crankshaft fracture) in the same engine type, without knowing about eachother's inspections. This may indicate structural failure in a specific engine type.

If the expert had known this, their approach would have been much more detailed, focusing on the exact ‘why’, finding arguments for warranty, financial compensation for the owner or insurer, and required adjustments.

Engine failure accounts for a large part of the negative results for insurers and therefore has a negative effect on premiums and coverage. This prompted insurers to collect statistics on reported engine failures and identify these possible structural failures. Not to exclude the brand or type of engine from coverage, but to make manufacturers, owners, and experts aware of structural failures. This enables them to take preventive measures where possible. This resulted in the development of the Engine Registration System (ERS) by IVR in close collaboration with insurers.

HOW DOES IT WORK?

The ERS database is entirely in English

The system is straightforward and works with four set identification criteria, being: kind / make / type / damaged item.

As kind are presently identified:
main engine / auxiliary engine / gearbox / thruster / after treatment plant.

ERS UPDATE 2025

- Improved functionality
- Updated design
- (Soon available) Integrated engine day value calculation tool

Damaged item is a set list of items of which one can be chosen to indicate which part is actually damaged.

To further identify the damage, multiple causes must be chosen. These are:

- The **technical cause**
  (for instance: coolant / cooling system related or fuel / fuel system related)

- The **related cause**
  (for instance: cavitation or incorrect mounting or structural failure)

- The **root cause**

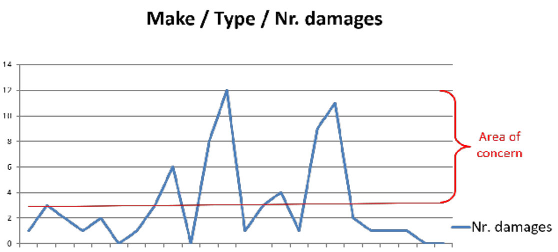
CONFIDENTIALITY

ERS database files are only fully accessible to the expert who provided the relevant input and the insurers listed on the policy. For other files, only the technical data is available; personal and ship details are not visible. ERS-registered experts can search the anonymized database for similar claims to increase their experience and knowledge of structural engine failures.

ENGINE REGISTRATION SYSTEM (ERS)

THE RESULTS

Every week the system automatically generates statistics, like shown in the graph below. These statistics are analysed by IVR to see if there is any question of a possible structural failure. In case of a suspected structural failure, the related technical data is examined to determine whether there is indeed a structural failure. If this is the case, a 'pre-alert' is sent to all ERS experts with a request for further information. If an actual structural failure is identified, the ERS experts will discuss the cause, effect, and preventive approach.



IVR then contacts the manufacturer to discuss possible measures for damage prevention, modifications to be carried out, as well as communication of the problem to the users. All ERS experts and participants are informed of the outcome of the discussions and the solutions achieved with the manufacturer by means of an 'alert message'.

ERS has proven its value in various cases in the past, where structural failures were identified and solutions were found in close consultation with the manufacturers, preventing similar failures in the future. This saves claim costs for insurers and owners. Statistics are also generated, some examples of which are shown in the leaflet.

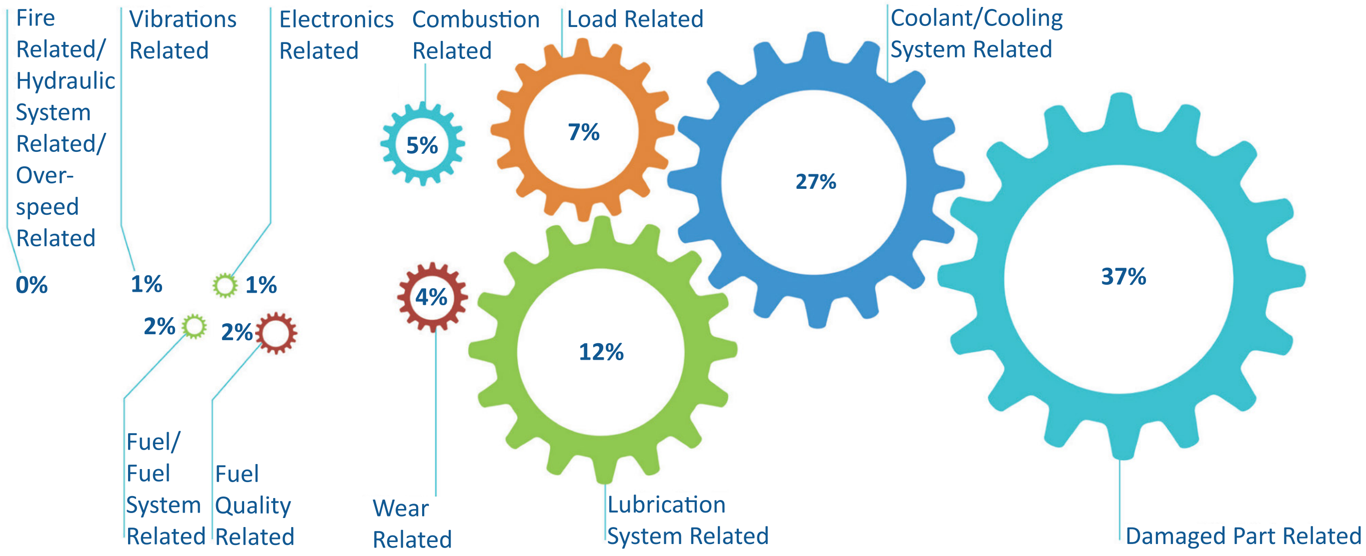
ERS PARTICIPATING INSURERS:

achmea
Allianz
Allianz Esa
CORINS een merk van a.s.r.
DUPI SMABTP Group
HDI
MSIG SPECIALTY MARINE
nationale nederlanden
intact INSURANCE
ZURICH

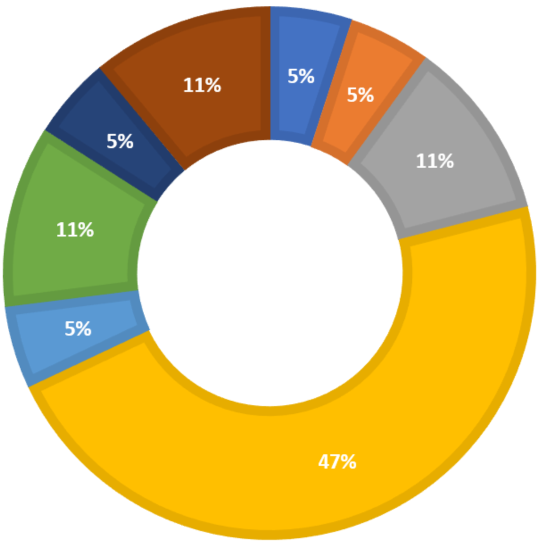
Do you also want to participate as an insurer?
Please contact the IVR secretariat for more information: **info@ivr-eu.com**

ENGINE REGISTRATION SYSTEM (ERS)

TECHNICAL CAUSE OF DAMAGE 2024



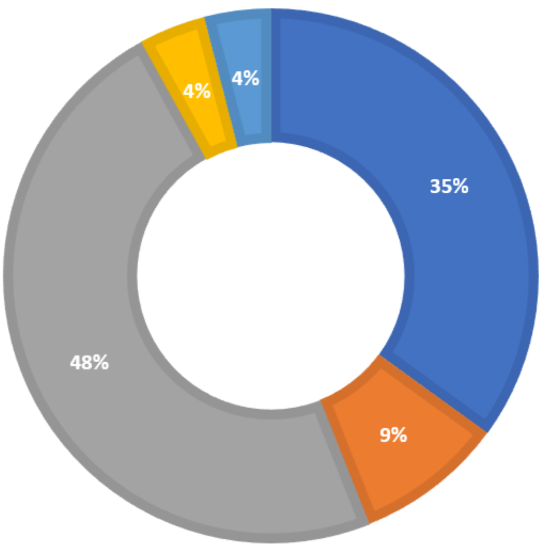
RELATED TECHNICAL CAUSES OF COOLANT/COOLING SYSTEM 2024



- EXCESSIVE WEAR
- AFTERTREATMENT INSTALLATION
- CREW NEGLIGENCE
- EXTERNAL CAUSE
- STRUCTURAL FAILURE
- COMPONENT FAILURE
- INCORRECT MOUNTING / SETTING
- CAVITATION

0% FUEL ADDITION (% BIO/OTHER ADDITIVE)
POLLUTED FUEL
NORMAL WEAR
LACK OF MAINTENANCE
MOTOR MANAGEMENT SYSTEM

RELATED TECHNICAL CAUSES OF DAMAGED PARTS 2024



- EXTERNAL CAUSE
- STRUCTURAL FAILURE
- COMPONENT FAILURE
- INCORRECT MOUNTING / SETTING
- RELATED CAUSE NOT SUBMITTED

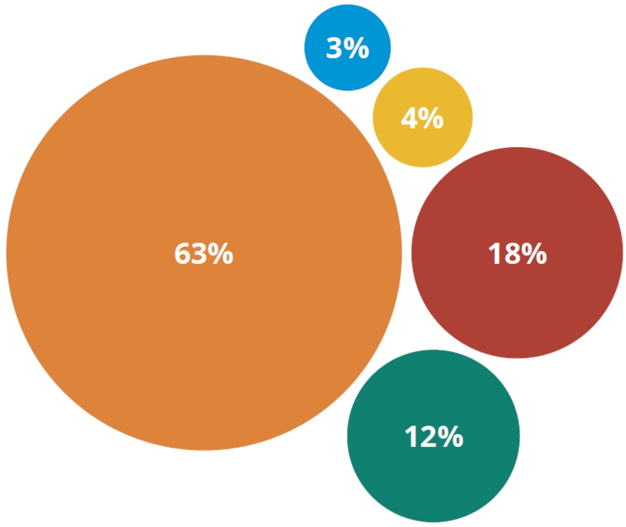
0% AFTERTREATMENT INSTALLATION
CREW NEGLIGENCE
CAVITATION
EXCESSIVE WEAR
NORMAL WEAR
LACK OF MAINTENANCE
MOTOR MANAGEMENT SYSTEM

Source: © IVR Annual Report 2024

ENGINE REGISTRATION SYSTEM (ERS)

KIND OF DAMAGES IN ERS 2024

- MAIN ENGINE - 63%
- AUXILIARY ENGINE - 18%
- GEARBOX - 12%
- THRUSTER - 4%
- AFTER TREATMENT PLANT - 3%
- CP PROPELLOR - 0%



Source: © IVR Annual Report 2024

THE PLATFORM

In addition to informing ERS participants and experts about (pre-)alerts, IVR also uses the ERS platform to inform experts about technical leaflets received directly from engine manufacturers. For example, the platform was used to inform experts about service letters.

In this way, ERS not only helps and informs the experts, but is also able to make essential technical information available to owners, thereby preventing engine failures and downtime of the vessel.

PARTICIPATION OF OWNERS

If owners can encourage experts and brokers to report claims in the ERS database, this would help to increase the scope of information, statistics, and the likelihood of finding more structural failures. If owners believe they are facing a structural failure in their machines, they can ask their expert to search the ERS database for similar claims or inform IVR about the alleged structural failure so that IVR can investigate whether this is indeed the case and initiate the process of issuing a (pre-)alert.

Failures of electric and hydrogen-powered systems, as well as in treatment systems and bio additives/biofuels, can also be recorded in ERS. IVR will also ensure that any future new developments are included as soon as they become relevant.

All experts who are a member of a recognized marine association, such as NIVRE and FEMAS, can become an ERS expert.

Visit **ers.ivr.com** or contact **h.arntz@ivr-eu.com**

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