



Accidents and accidentology in inland navigation – existing and future data collection and analysis

Dr. Norbert Kriedel
Administrator for Statistics and Market
Observation,
Central Commission for the
Navigation of the Rhine (CCNR)

Outline

1. Situation for Accident statistics in the EU
2. Eurostat Task force and Pilot studies on accident statistics in EU member states
3. Accident statistics on a national level – the case of Germany and France
4. Analysis of accident statistics for selected German waterways – Main, Rhine-Main-Danube Canal, Danube
5. Aspects of accidentology within CESNI/PT and CESNI/QP

1. Situation for Accident statistics in the EU

Situation for Accident statistics on the EU / Eurostat level

- No legislation exists so far for the collection and publication of inland waterway accident statistics at EU level.
- IWW data on accidents are currently reported voluntarily by some EU member states (Austria, Bulgaria, Czech Republic, Croatia, Hungary, Poland, Romania, Slovakia).
- However, these statistics are not detailed enough (no data on type of accidents, or on causes, vessel types, etc.)
- Eurostat is taking measures to develop a harmonized EU database of national IWW accident data.
- The methodology should cover all accidents related to movements of goods and passengers and was inspired by the EMSA methodology on accidents in maritime transport.
- An accident statistics task force developed a set of variables (types of accidents, types of injury, causes of accidents, type of person killed or injured, type of vessels involved, involvement of dangerous goods, river on which the accident occurred, etc.
- The set of variables is very detailed and would allow an analysis of accidents on IWW in order to identify major causes for accidents. Pilot studies in EU member countries are carried out in 2019 in order to test the framework.

2. Eurostat Task force and Pilot studies on accident statistics in EU member states

Eurostat Task Force and Pilot studies on Accident statistics in EU member states



Inland waterways transport: **draft methodology** for the development of passenger and accident statistics

version 3, implementing comments by Member States until 6th
December 2018

This is the final version to be used for the pilot studies

EUROPEAN COMMISSION
EUROSTAT

Directorate E: Sectoral and regional statistics
Unit E.3: Transport statistics

- Pilot studies launched in 2019
- EU member states receive funding for carrying out pilot studies (test if statistical framework is feasible)

3. Accident statistics on a national level – the case of France and Germany

3. Accident statistics on a national level – the case of France

- In France a lot of information is available concerning accidents and incidents. This information is gathered through a range of warning, assistance, crisis management and communication systems organized at national level.
- These systems are set up and managed by the **Ministry of the Interior**, in conjunction with various other players, such as the **Ministry of Transport**.
- However, there is no national database relating to inland navigation accidents as such. The information available is collected in real time (warnings, assistance etc.) and subsequently archived, but without being collated or centralized, let alone analyzed.
- The technical **institute CEREMA** is to carry out a study intended, on the one hand, to set out current practices in France and, on the other hand, to collate the available information on this subject for various modes of transport (organization, tools and definition of types of event) for consideration with regard to the desirability of developing a national monitoring tool.
- In order to determine the current practices in France, but also with a view to developing a national monitoring tool, discussions have been held with the managers of inland waterways, authorities responsible for the safety of the waterways (in charge of issuing vessel certificates, as in ES-TRIN, and navigation certificates) and the waterways enforcement and police services.

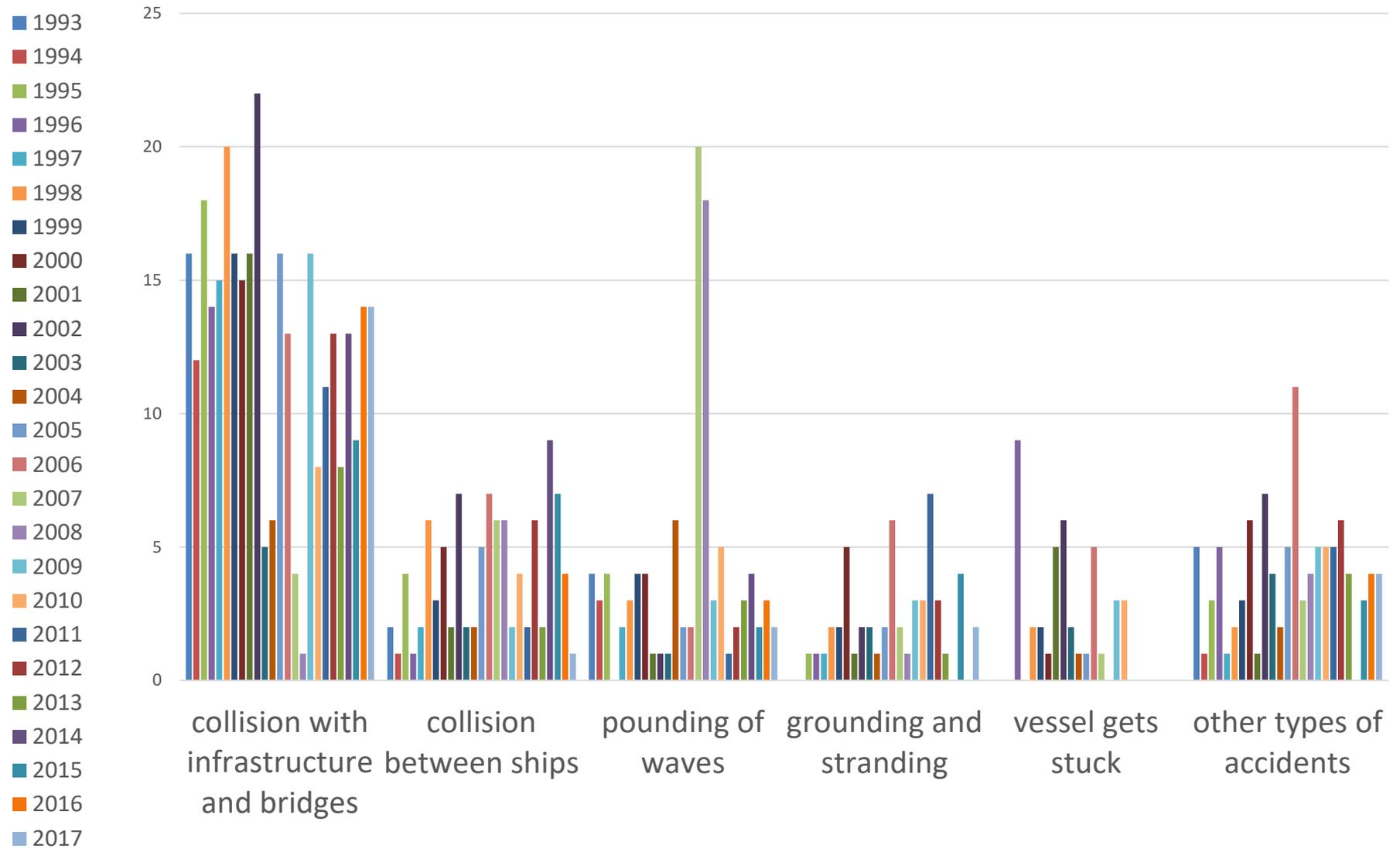
3. Accident statistics on a national level – the case of Germany

- The **German inland waterway administration** in conjunction with the **Ministry of transport** has collected accident statistics via the waterway police for a long time, but this system is currently being renewed, so that the data gathering process ended some years ago.
- The past accident data collection was not completely harmonized from a methodological point of view (regional differences in methodology in practise).
- Within the **HAVARIS project**, a harmonization and a digitalisation of the methodology is achieved. First results of HAVARIS exist already for the south-eastern waterways (Rhine-Main-Danube Canal, Main, Danube). For these waterways, detailed accident statistics for 2014, 2015, 2016, 2017 are already available.
- In the future, all German waterways shall be integrated into the digital **HAVARIS system**. This would allow to have a long term series (1993-2018) with detailed accident data for all German waterways (including types of accidents).

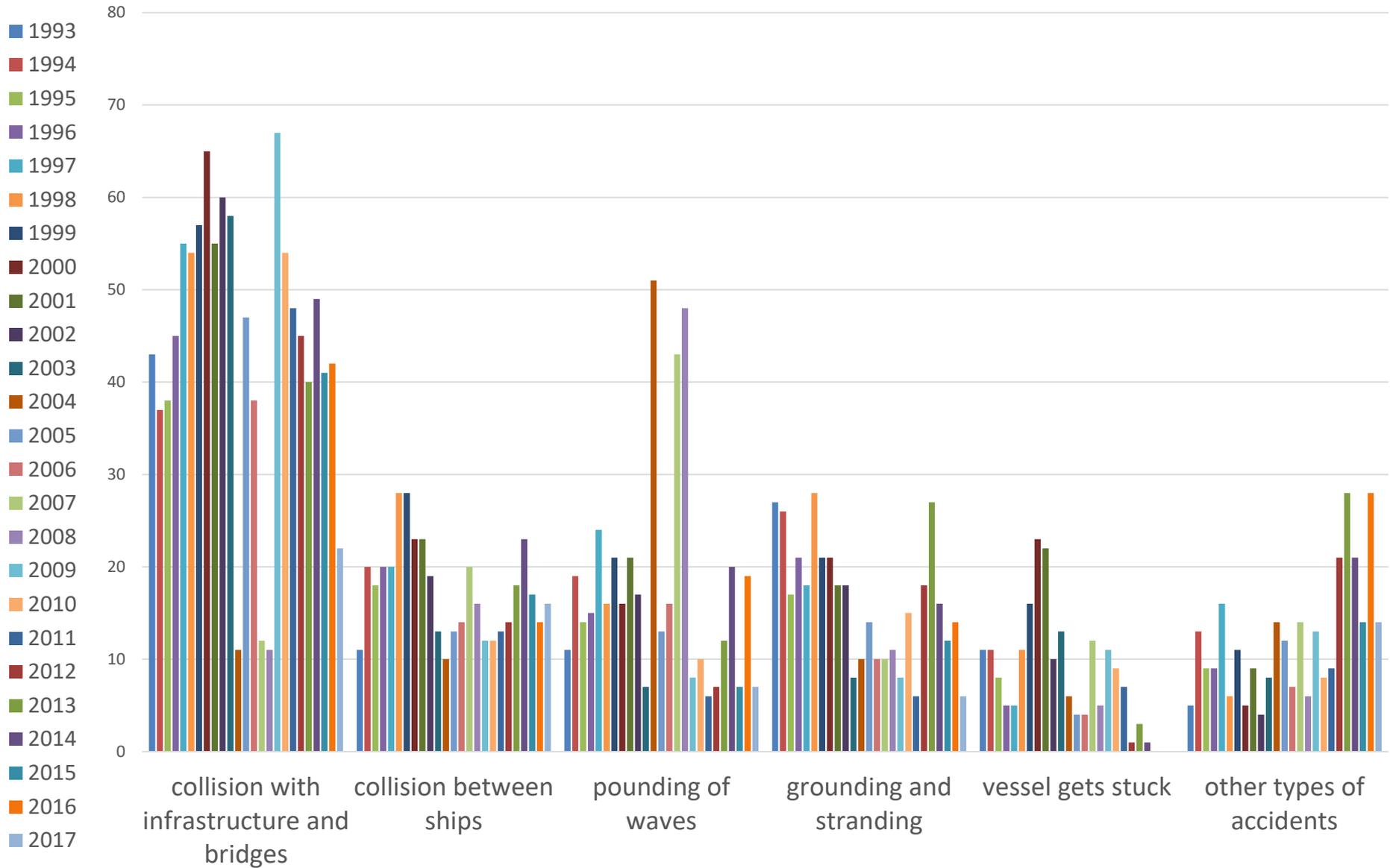
4. Analysis of accident statistics for 1993-2018 for selected German waterways – Main, Rhine-Main-Danube Canal, Danube



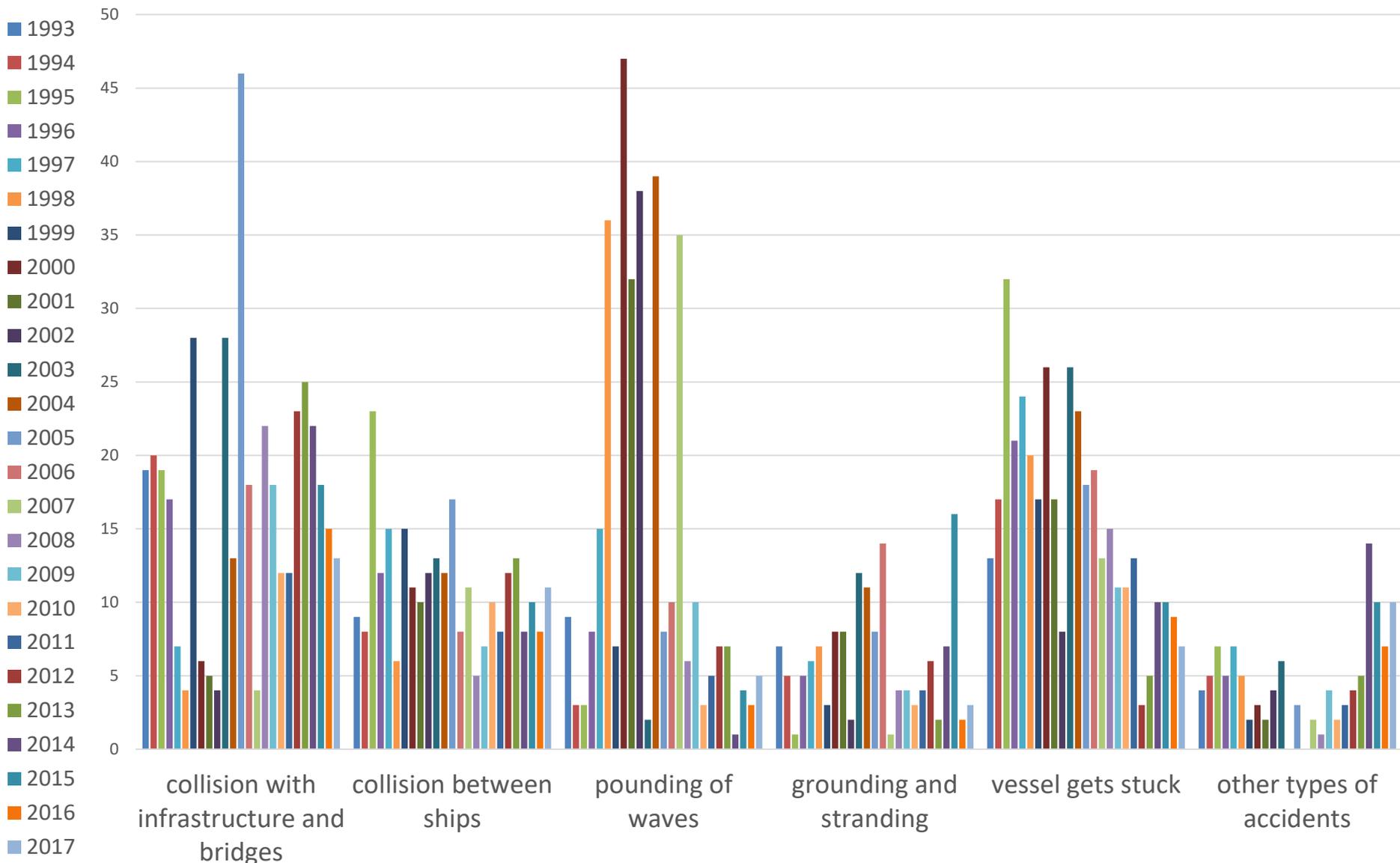
Number of accidents per year and type – Rhine-Main-Danube Canal



Number of accidents per year and type – River Main

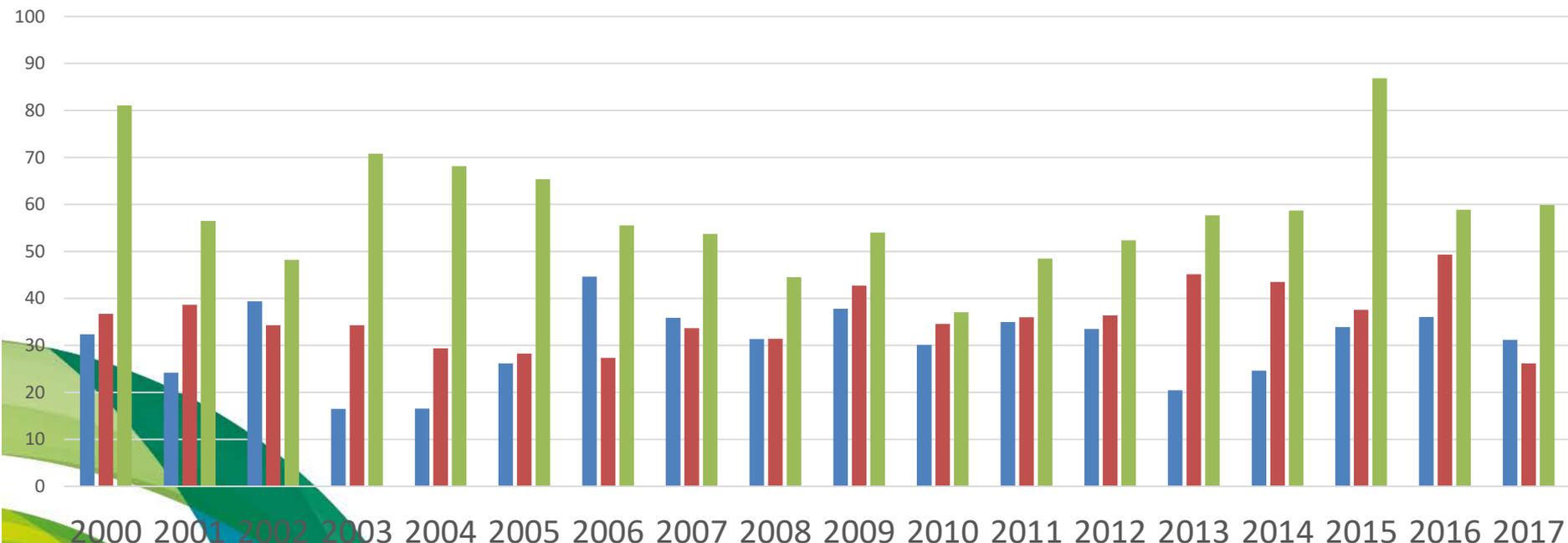


Number of accidents per year and type – River Danube (in Germany)



Overall accident rate: Number of accidents per 1000 tkm (all types of accidents)

■ Rhine-Main-Danube Canal ■ Main ■ Danube

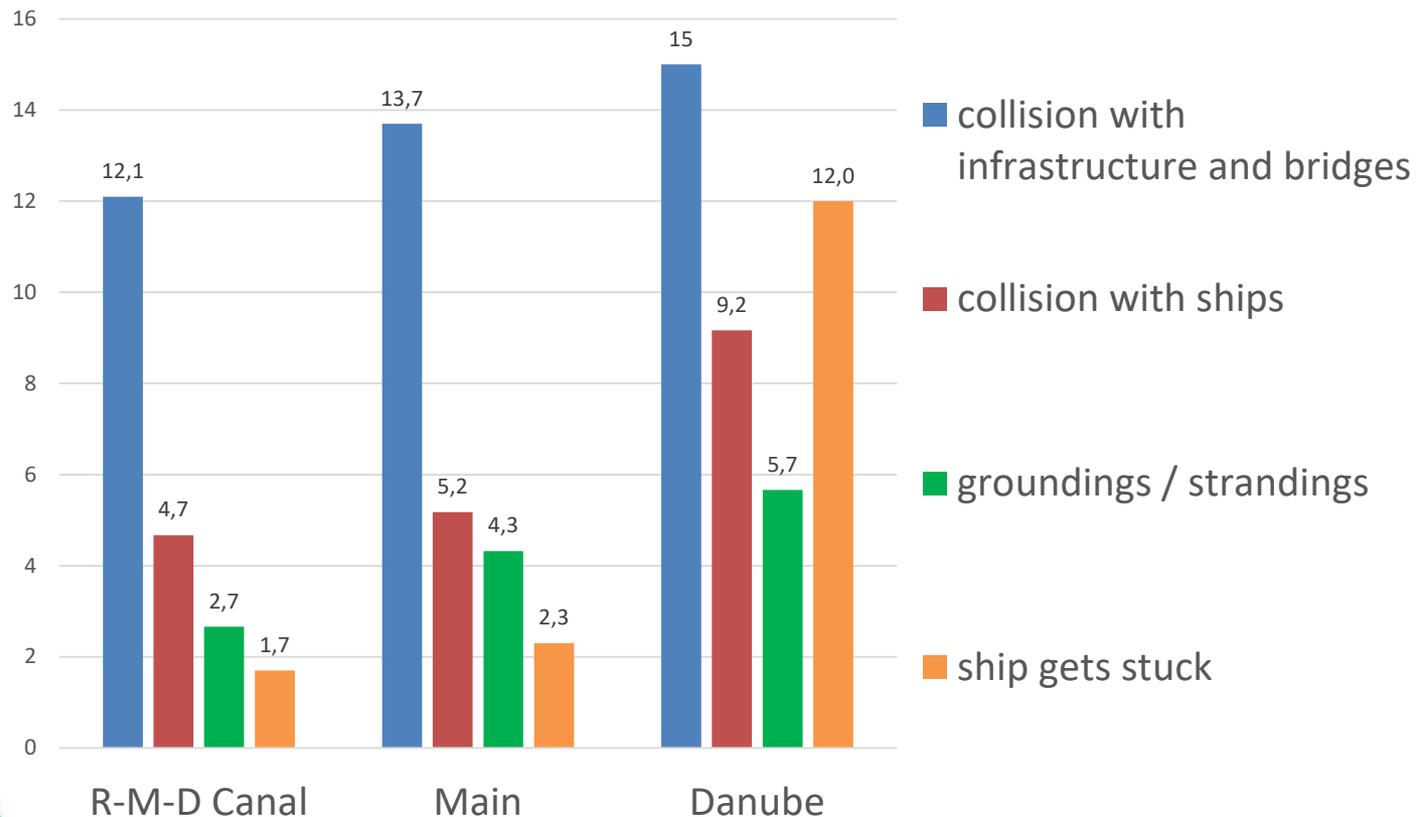


- River Danube is freeflowing on its German stretch
- The Danube's higher rate of accidents reflects more difficult navigation conditions

Multiannual accident rate* per type of accident

(*number of accidents per 1000 tkm, **average for 2000-2017**)

- For the Danube, in particular the accident type “ship gets stuck” was higher than for the two other rivers, reflecting the free-flowing character of the German stretch of the Danube.



Collisions with infrastructure and bridges were the most important type of accident on all three waterways

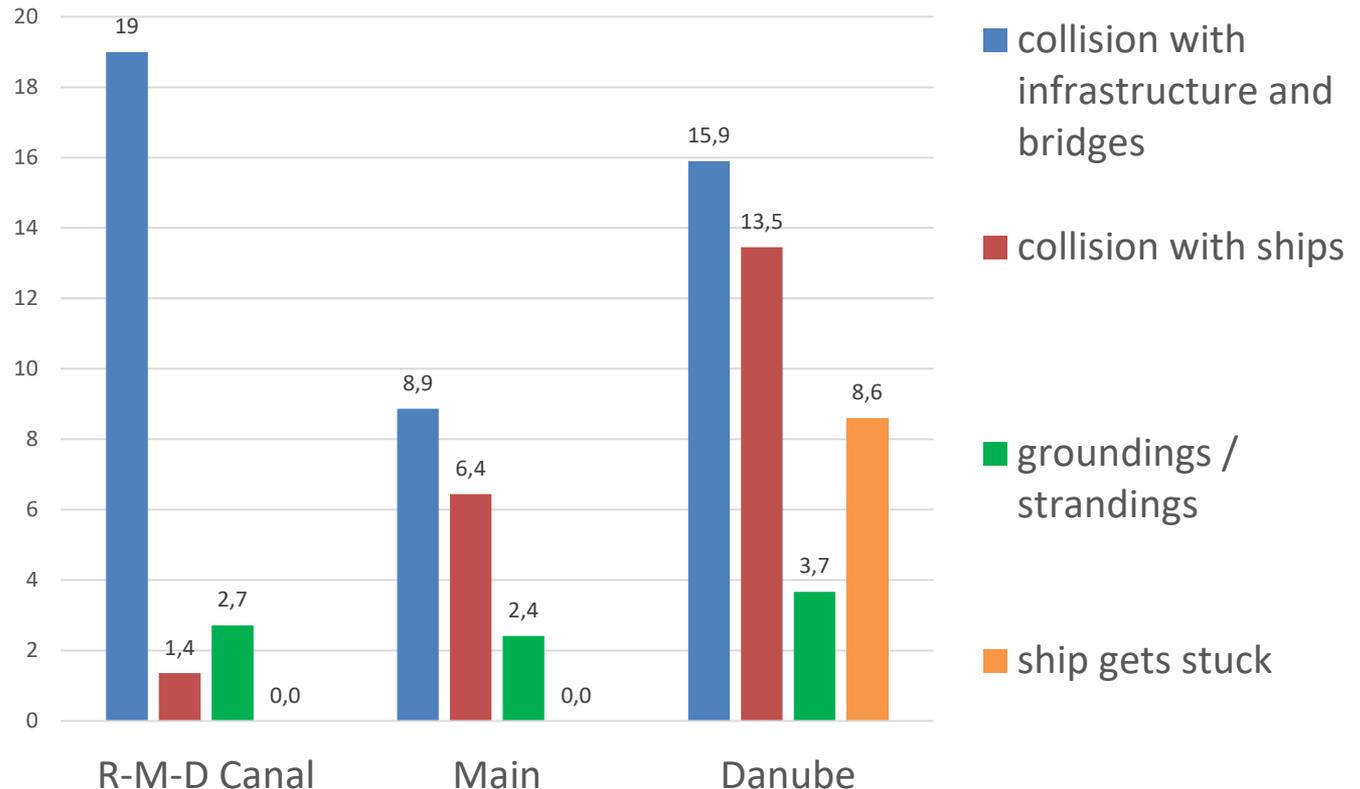
Accident rate* per type of accident in 2017

(*number of accidents per 1000 tkm)

- On the Danube the accident rate for the type “ship gets stuck” was lower than in the past but still higher than on Main and R-M-D Canal.

- On the Rhine-Main-Danube Canal, collisions with infrastructure and bridges had a much higher accident rate in 2017 than on average for the time period 2000-2017

- For the Danube the collisions with infrastructure were still quite high too, and only the for the Main was there a decrease.



- ‘Groundings/strandings’ and ‘ship gets stuck’ had a slightly lower rate in 2017 than in the period 2000-2017
- ‘Collision with ships’ were relatively less frequent in 2017 on the R-M-D Canal, but relatively more frequent on Main and Danube than in earlier years

5. Aspects of Accidentology within CESNI/PT

- In the framework of the CESNI/PT work programme 2019-2021 there is the topic of “Collection of data on main accidents”, with the objective of concentrating on qualitative accident analysis with a view to learning lessons for improving continuously the requirements within ES-TRIN.
- To this end, CESNI/PT proposes to work on a standardized structure to harmonize the various CESNI members’ reporting (i.e. common definition of “accident in IN”) and to facilitate the development of a common database through standardized brief reports on accidents.
- This database will allow to gather and share experiences and lessons learned after accidents.

5. Aspects of Accidentology within CESNI/QP

- The same topic of “Collection of data on main accidents” has also been included in the CESNI/QP work programme 2019-2021 (task 24), The work of CESNI/QP, complementary to the one carried out by CESNI/PT, will however focus more on the analysis of accidents with a view to the **human factor**.
- Following the example of CESNI/PT, CESNI/QP could draw lessons from what accident reports can tell on future amendments of competence standards or other standards in ES-QIN. One example from the past is the Waldhof accident, which led to a stronger emphasis on stability related questions in competence standards for boatmasters and boatmen in ES-QIN 2018.
- Although the work of CESNI/QP has not yet started, in due course its input could enrich the picture by giving attention to accidents reports on human behavior with a view to general observations on sufficient and targeted crewing requirements.

Fotos of Accidents

Collision of container ship



Burning vessel



Collision of Cruise ship with cargo ship

QUESTIONS, REMARKS ?



Thank you very much for your attention.

Vielen Dank für Ihre Aufmerksamkeit.

Merci beaucoup pour votre attention.

Hartelijk dank voor uw aandacht.

Dr. Norbert Kriedel
Administrator for Statistics and Market
Observation,
Central Commission for the
Navigation of the Rhine (CCNR)
Tel.: ++33 (0) 388 52 96 43
n.kriedel@ccr-zkr.org
