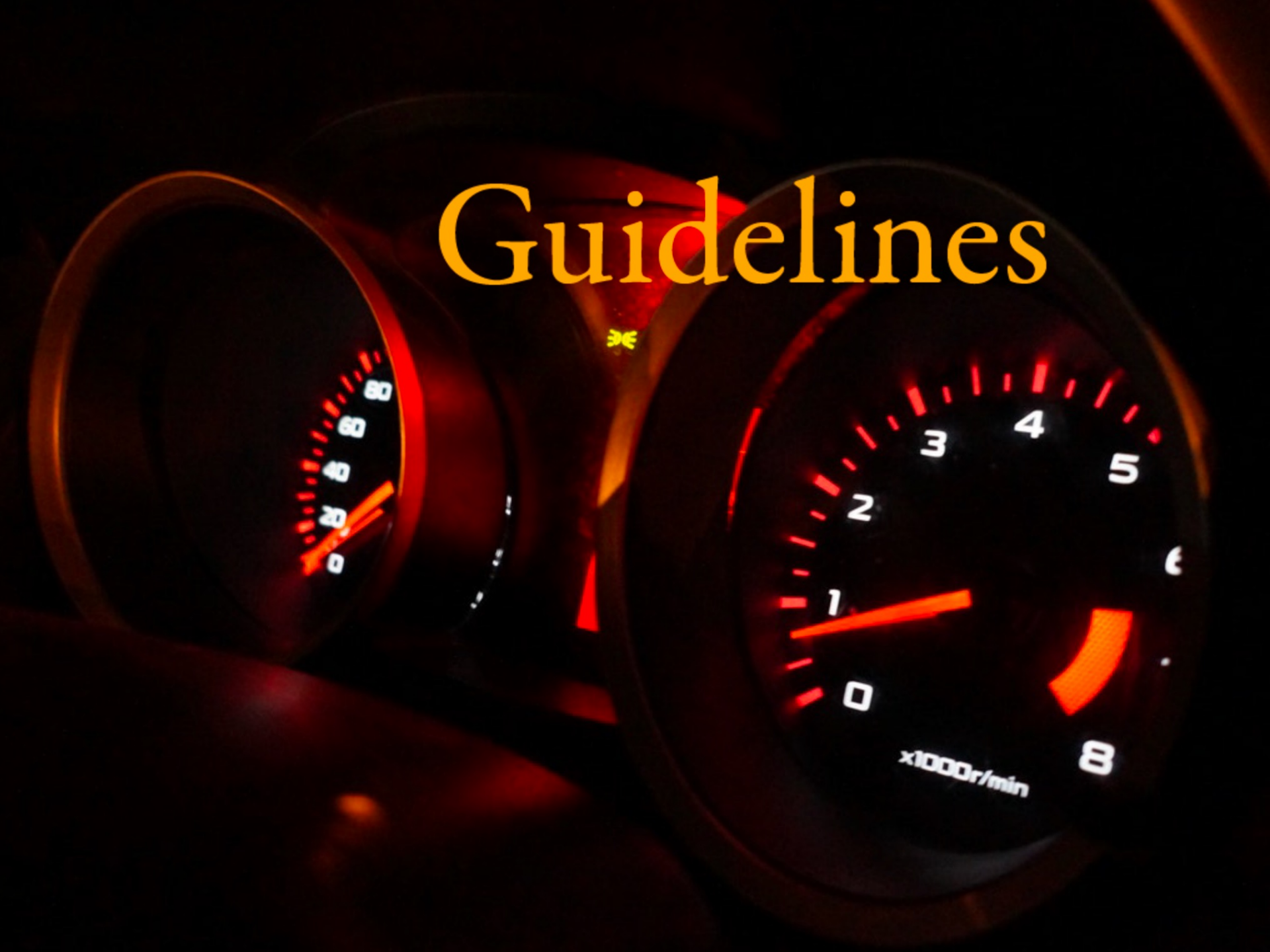




Fundamentals of Reliability Related Standards

Fred Schenkelberg

Guidelines



Guidance



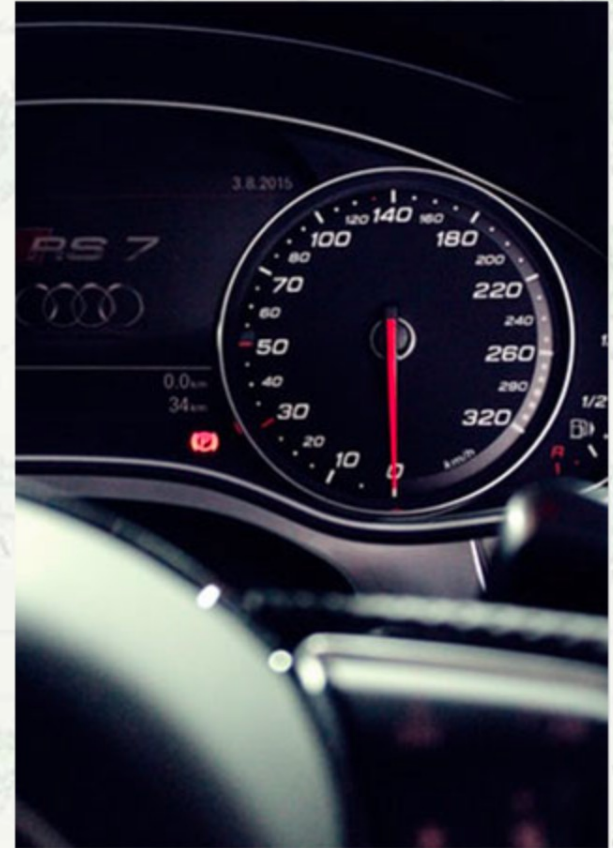


Contracts

What does
85RH/85°C

translate to for your
product?

Problems with Standards



Outdated

Limited

Faulty

Old or Outdated



Check the date

Is the approach still valid?

What are the assumptions?

Where did it apply?

Is the information timeless?

Limited Application



Does the standard apply?

What has changed?

Materials?

Transportation methods?

Where and how do my customers use the product?

Faulty Basis



Bias, limitations, business

Are we using the standard as intended?

Is the logic valid for our application?

Assuming constant hazard rate?

Sample size, risk, intent

What problems have
you seen concerning
standards?

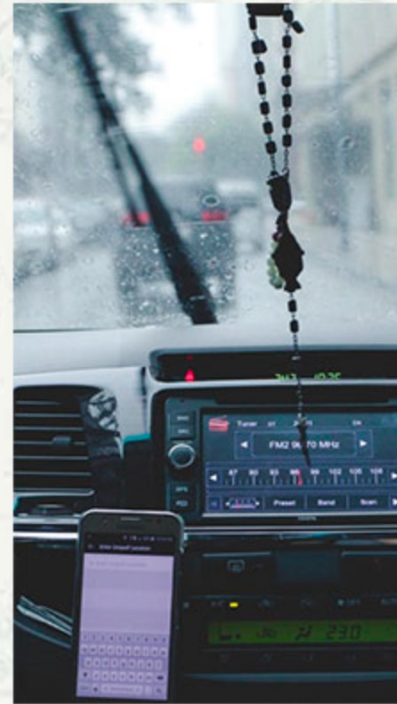
Types of Reliability Standards



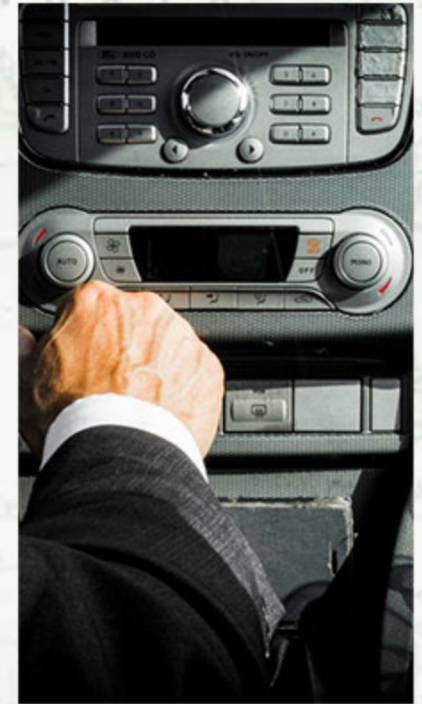
Testing



Environ



Techniques



Safety

Reliability Testing Standards



Environmental Testing Standards



Reliability Techniques or Procedures



Safety Standards (regulatory)



Which standard(s)

do you find most
useful?

Sources of Standards



Military



Standards
Bodies



Corporations

Military Standards



Generally comprehensive

US Military Standards

British Ministry of Defense Standards

Other military standards

Are you building a tank?

Standards Bodies



IEC
IEEE
ISO
ANSI
FIDES
NASA
ESA

...

Some are industry specific
some are not

Corporations



For internal and supply
chain use

Telcordia

HP

...

Have you created

internal standards?

Best Practices



Required

Use & Extend

Adapt

Customer Requires Use



Sometimes it is in the
contact

Part of doing business

Sometimes useful

Sometimes not useful

Use and Extend



Start with off the shelf standard

Apply the knowledge of where and how your customers use your product

Apply the failure mechanism knowledge you have (or should have)

How do you do drop testing?

Use standards as a starting point for your program

Adapt to Fit



Get value from your
standards

The goal is to inform decisions

The goal is not to check the box

Make sure every use of a standard
actually adds value to your program

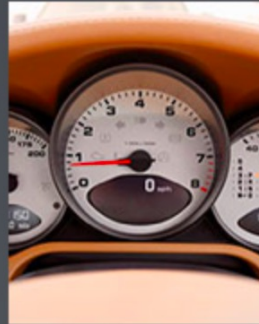
How have you made

made use of
standards?

In Summary

Standards Exist

Some have Value



Some are Useful



Many Sources



More Information

Visit [AccendoReliability.com](https://www.AccendoReliability.com)

Let me know if you have any questions.

Check out the reliability engineering podcast network at [Reliability.FM](https://www.Reliability.FM)

Let's only use useful reliability standards.