



Exploring Alternatives to MTBF

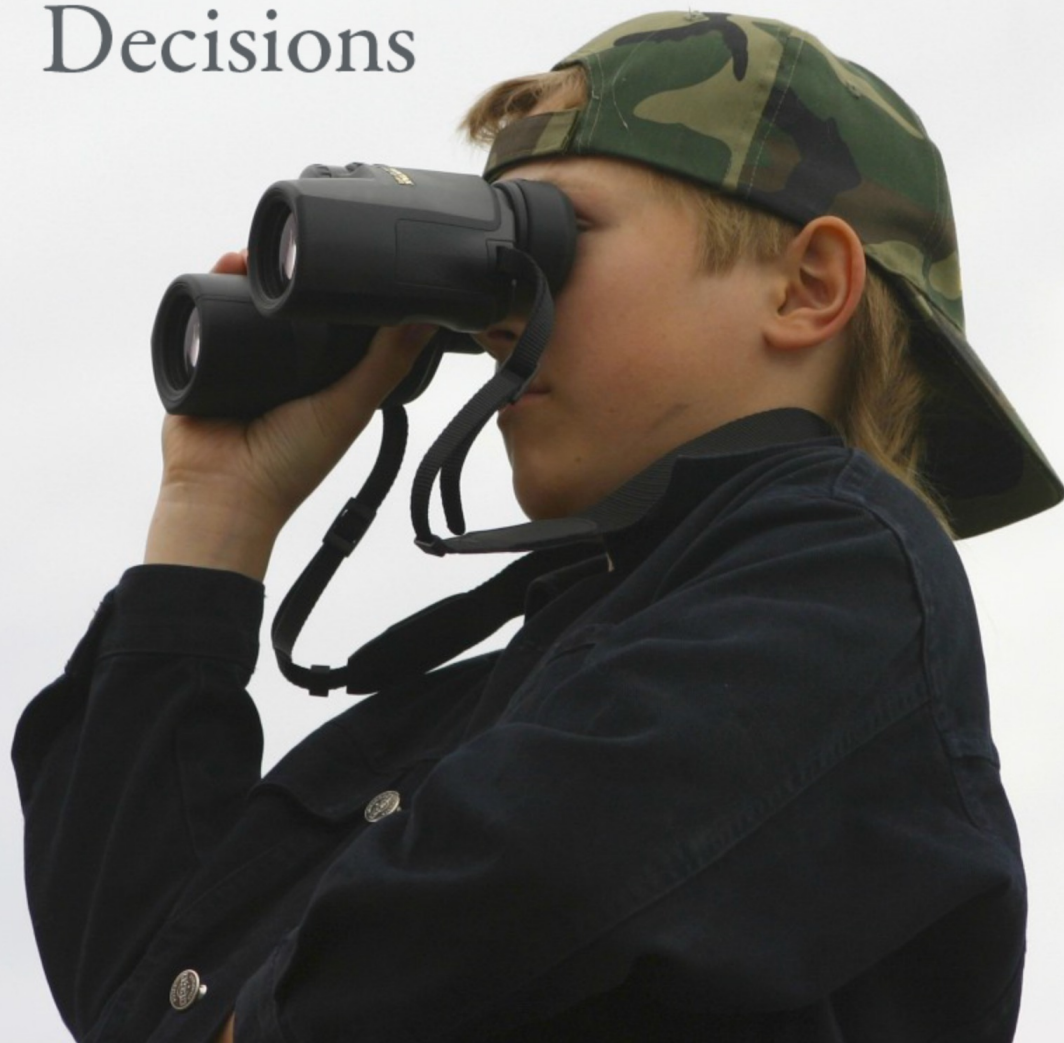
Fred Schenkelberg



Measures



Decisions



So, how is MTBF
working for you?



MTBF is bad...

The way it's
used





How it is
understood

and, with the loss
of information

asses early life
impact



A close-up, low-angle shot of the front of a heavily rusted and weathered vintage car. The focus is on the hood, which is covered in a thick layer of brown rust and peeling paint. A chrome hood ornament, featuring a stylized script logo, is visible on the right side of the hood. The background is dark and out of focus, showing the windshield and wipers. The overall mood is one of age and decay.

Misses wear out, too

Plymouth

Have you checked
the constant failure
rate assumption
lately?



Use Reliability

Reliability has four parts:



Function



Environment



Probability



Duration

Reliability example for a cell phone



Make/Receive
Calls



Outdoor
Portable

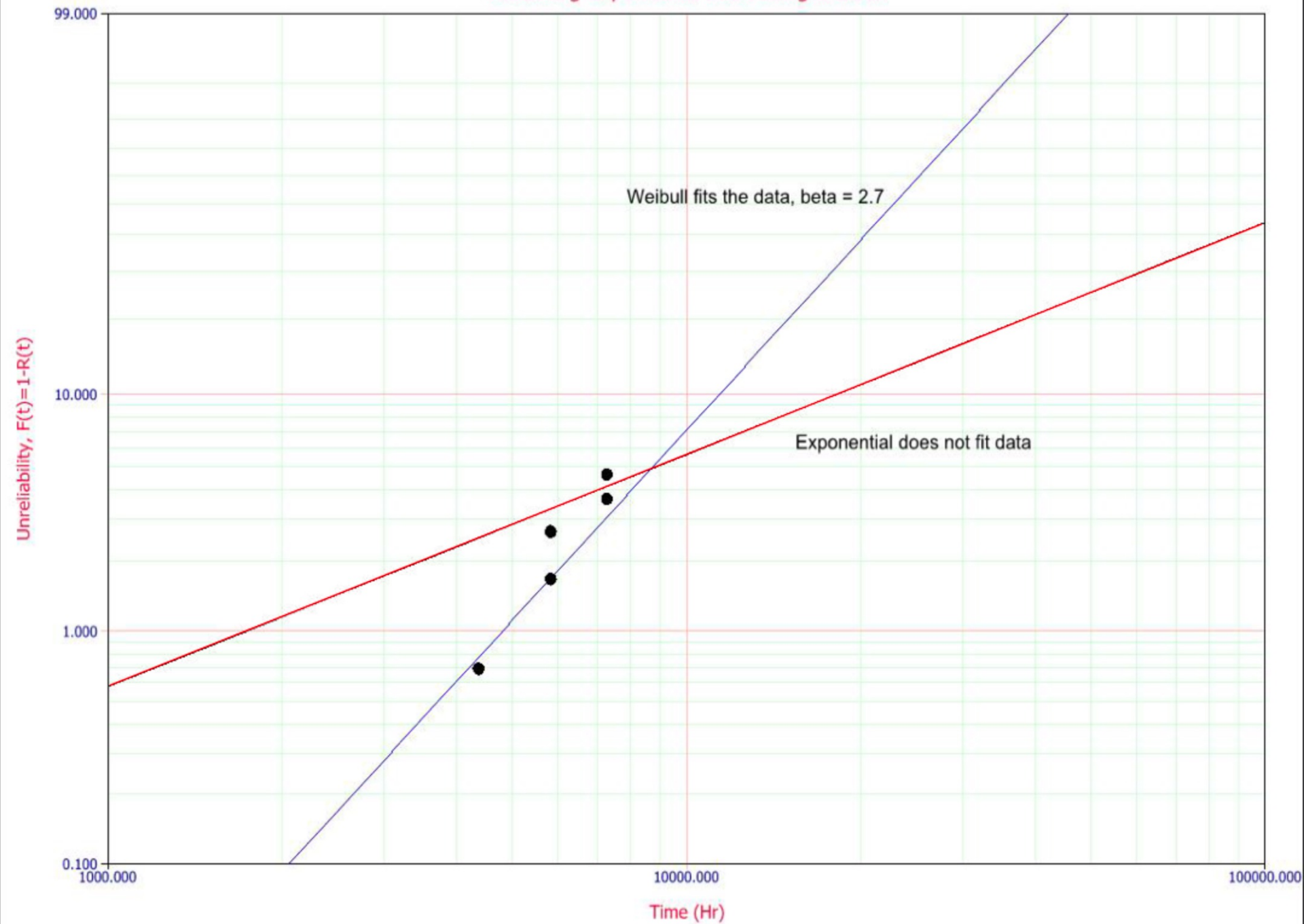


98%
Survive




2 years

Assuming Exponential and Fitting Weibull

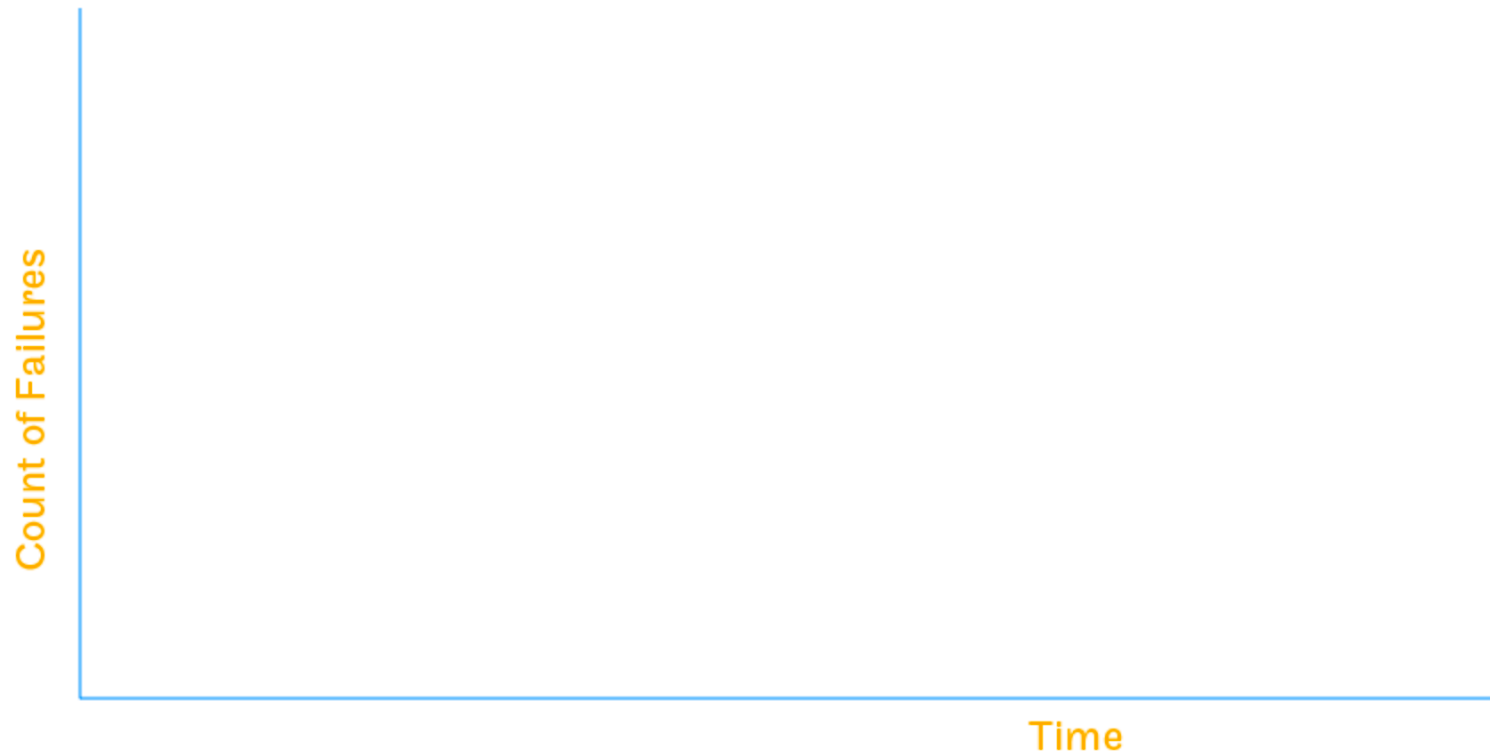


Do you regularly
include all four
elements?



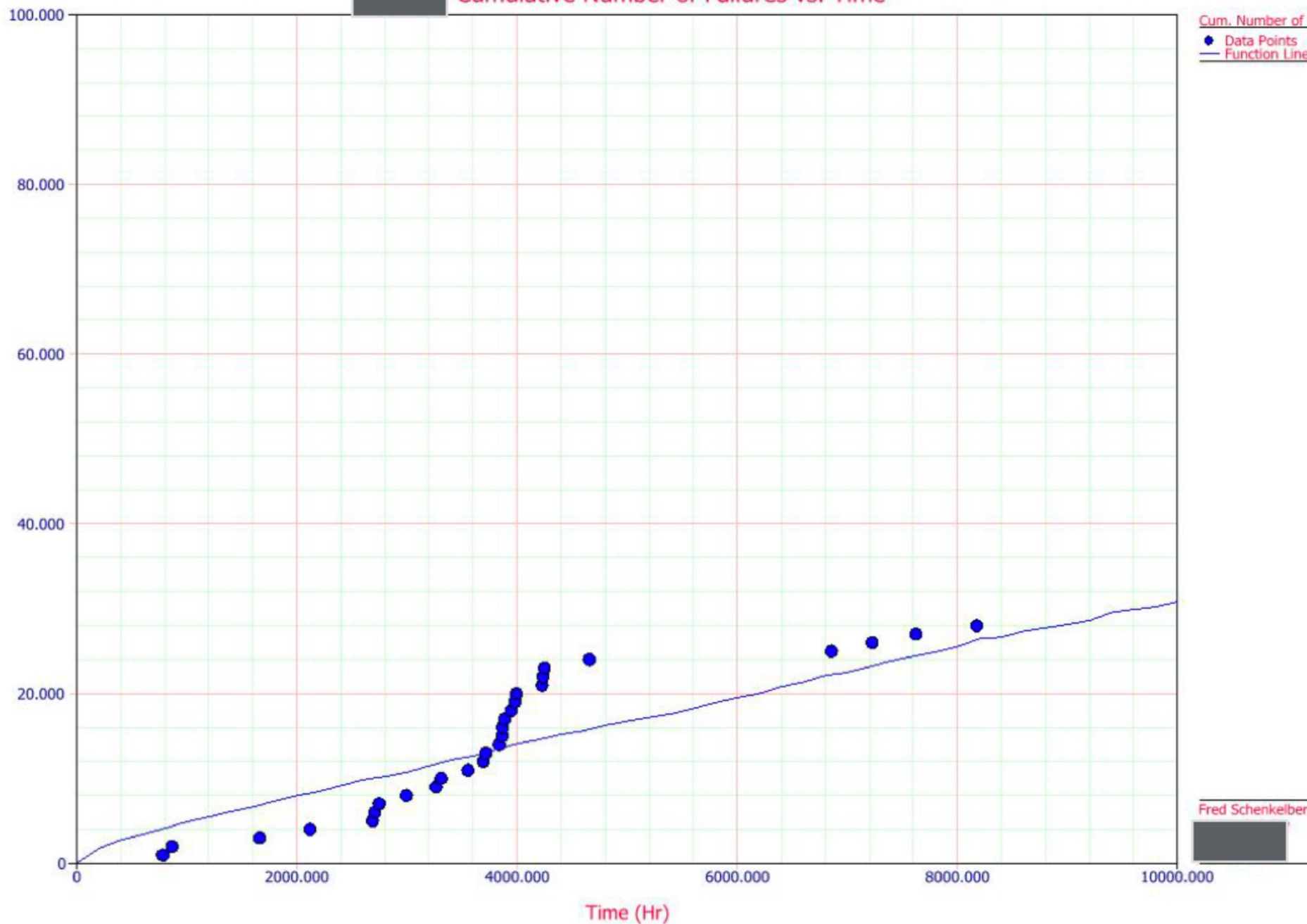
How about
repairable systems?

Mean Cumulative Function



Cumulative Number of Failures vs. Time

Cumulative Number of Failures



Fred Schenkelberg

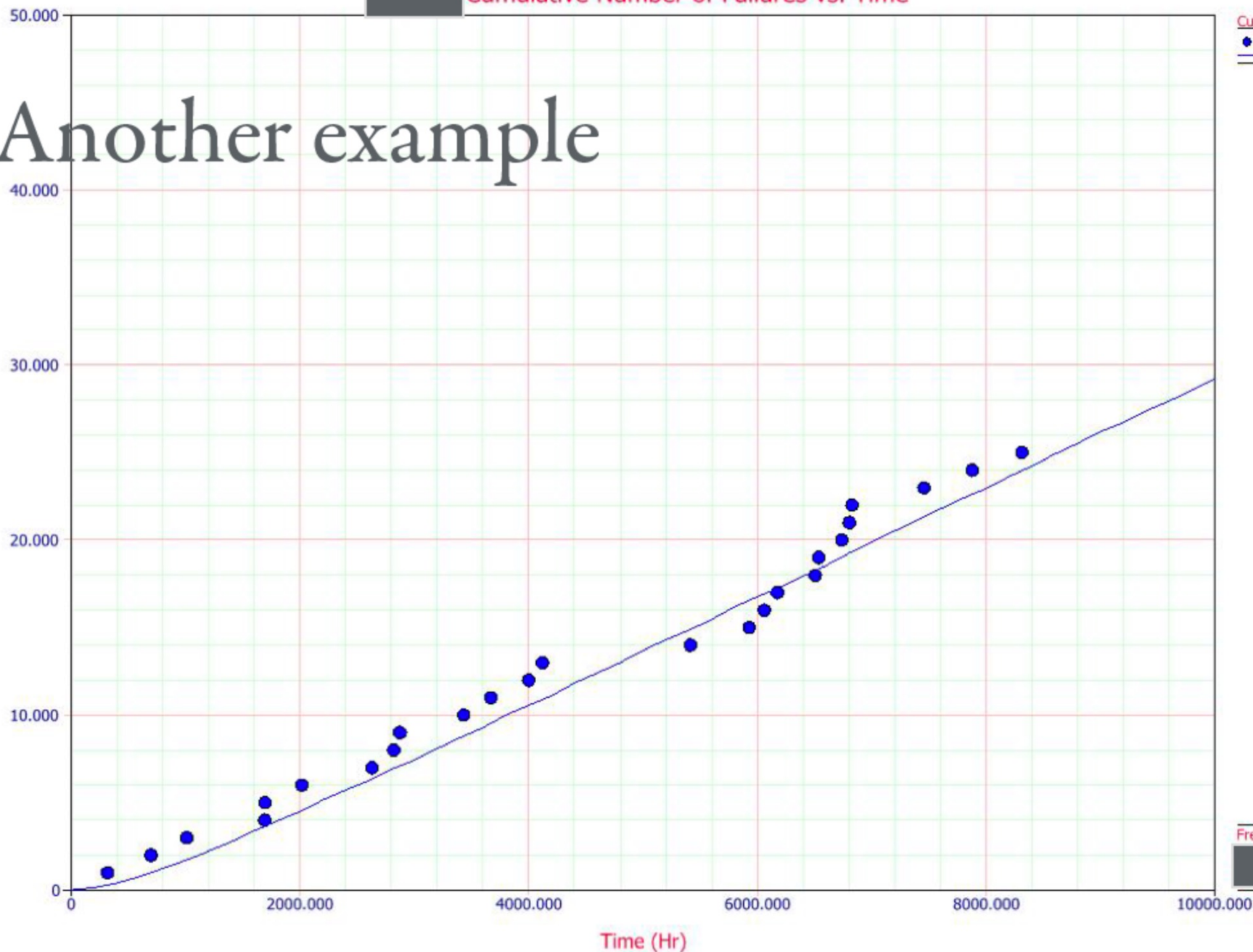


Cumulative Number of Failures vs. Time

Another example

Cum. Number of
Data Points
Function Line

Cumulative Number of Failures



Fred Schenkelbe



What are you trying
to learn tracking
reliability?



How to minimize MTBF use

Tactics you can use today



Just say No to MTBF

Just don't use MTBF.
it's misleading
it's misunderstood
it's inaccurate

Tactics you can use today



Just say No to MTBF

Just don't use MTBF.

Educate your peers.

Showcase an internal example

Provide reliability training

Ask 'what do you mean by MTBF?'

Tactics you can use today



Just say No to MTBF

Just don't use MTBF.

Educate your peers.

Document Difference
focus on how a better metric
leads to better decisions
calculate using MTBF and Reliability

Tactics you can use today



Just say No to MTBF

Just don't use MTBF.

Educate your peers.

Document Difference

Recast Specifications

98% over 2 years, not 50k hour MTBF

Use multiple reliability/duration couplets

Connect to business objectives

What have you done
that works to
minimize
MTBF use?



Success Stories and Wrap-up



Company Policy

Supplier white
papers



A close-up photograph of a rock climbing anchor system. A metal carabiner is attached to a chain and a rope, with a red and white striped rope running through it. The background is a textured, brown and grey rock face.

CRE Preparation Course

Next Month's webinar
How to Best Prepare for the
ASQ CRE exam

What are you going
to do today to
eradicate MTBF?