

WE EXCELERATE YOUR PERFORMANCE



Why use DFM
CERN
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BB Electronics, Denmark

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Design For Manufacturing

DFM is a manufacturing review

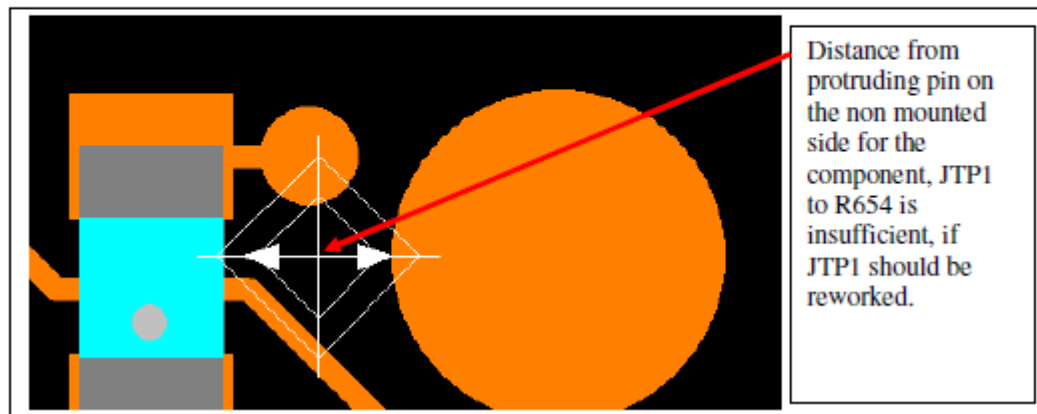
“A technical feedback of found issues”

DFM = Risk Management

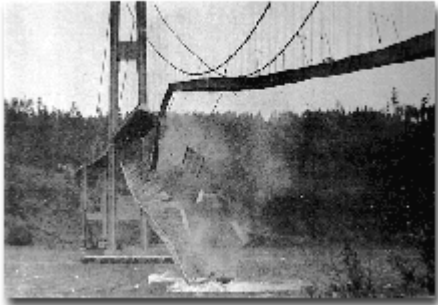
5.24:

JTP1:

Too little space around through holes on the non mounted side for this component (less than 2mm). See picture below:



History – Get It Right the First Time “The most remarkable engineering failure in history”



According to “Failure Magazine,” the Tacoma Narrows Bridge disaster is “the most remarkable engineering failure in history”

Tacoma Narrows Bridge

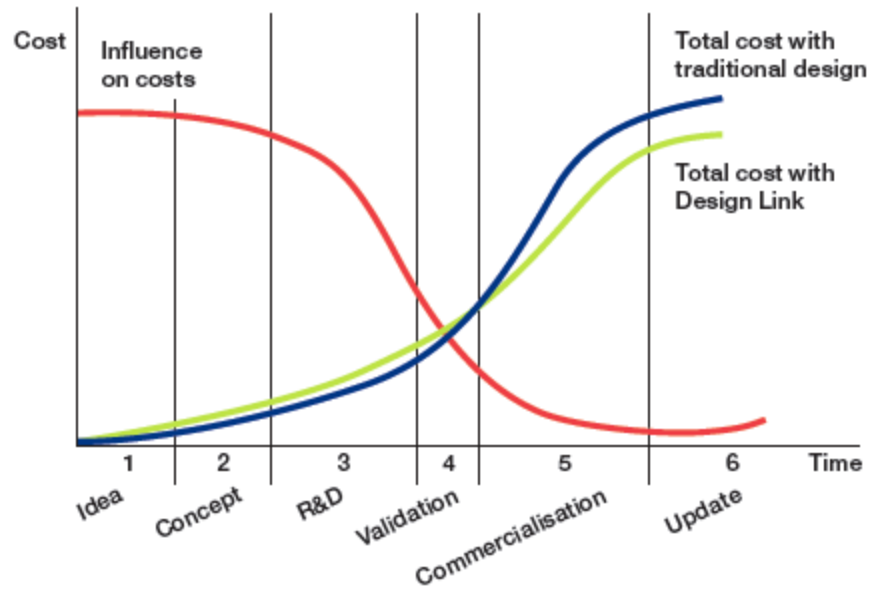
- - Fifth largest suspension bridge in the world
- - Nicknamed "Galloping Gertie" for its unusual, undulating motion during windy weather
- - Originally completed July 1, 1940 at a cost of \$7M (DOT estimate was \$11M; they went with the low bidder)
- - Collapsed four months later - Nov. 7, 1940 - during a 42-mile-per-hour wind storm



Reopened on Oct. 15, 1950 at a cost of \$14 million

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DFM is proven to optimize a given product design with these factors:

- **Reduced time**
 - Fewer prototype runs > lower cost
- **Improved product quality**
 - Less faults, lower total cost of quality
- **Lower price**
 - Using approved compatible lower cost alternatives
 - Optimal process flow

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Scope of the seminar

When manufacturing is outsourced feedback to R&D is limited.

The aim for this DFM seminar is to establish an understanding of manufacturing challenges and issues that can influence the product quality.

The aim for CERN is to maximise the product quality – “at the lowest possible price”

The aim for BB Electronics is to maximise the production yield and to minimize scrap and waste in order to remain competitive.