

**TOP EVENTS:**

Winter 2011

**BIOMEDevice**  
An M&M Event



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Reliability

# News

## IN THIS ISSUE

Theme for this newsletter:

***Risk-Based Testing***

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## MESSAGE FROM THE FOUNDER

Happy Holidays and welcome to our 28th quarterly newsletter. Our newsletter comes out the first week of March, June, September, and December. Comments and suggestions are always welcome.

We are excited to announce that our HALT Calculator is now available via the web - as a internet/Cloud-Based tool. You can use it directly at [iHALT Calculator](#). And it is now being sold on [Chart HALT Chambers](#).

Also, my book "How Reliable Is Your Product: 50 Ways to Improve Product Reliability" just celebrated its 1 year anniversary of being published, and we are pleased to announce we just finished the Mandarin translation of the book and it is in the process of being published. You can view the 1st 3 Chapters at [50 Ways to Improve Reliability - in Mandarin](#), or [提高产品可靠性的50种方法](#). It will be available in ebook January, 2012.

Last quarter we visited many cities around the US and world including: Boston, New Jersey, San Diego, Denver, Milwaukee, Chicago, Minneapolis, and Australia. This next quarter we will be visiting many more US locations for conferences, including Los Angeles and San Diego, and we will also be visiting New Zealand and India. See [news](#) for exact dates. Whenever OPS visits a city, we offer 1 hour of free consultation to help you with any aspect of your reliability program. See [Special Offers](#) section for details.

Our [Free Webinars](#) are getting an increasing number of attendees. Last quarter, we held free webinars on topics of Simulation, Solar Reliability, and Medical Reliability. Next quarter we will be having a webinar on [Design of Experiments](#) and several other topics.

We hope you enjoy the following newsletter. Our next newsletter will come out the first week of March. Thank you for your continued support and interest.

- Mike Silverman, Managing Partner/Founder

## SEMINARS

## ▶ 2012 Free monthly Webinar Series

**About Event:** Each month, we will bring you a free webinar topic. Below is our current line-up for the remainder of 2012. You can click on the registration page for each event.

▶ **WEBINAR on: Design of Experiments (DOE) and its many uses within Reliability** - February 1, 2012,

[Register Now](#)

Click here to

*This is part of our monthly FREE Webinar series*

Experimental design activities will be discussed including orthogonal matrix selection (with modification), factor selection, factor assignment, measurement system selection, objective(s) definition, and the process of planning and implementing experiments. Special attention will be give to experiments with reliability/robustness improvement objectives. Webinar is intended for practitioners, engineers, and engineering managers who have testing and experimentation responsibilities.

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## ▶ [2012 Reliability Symposium](#)

May 7-11, 2012 in Santa Clara, California

### TRACK ONE - DFX TOOLS

- [Design for Reliability \(DfR\)](#): May 7-8
- [Design for 6 Sigma \(DfSS\)](#): May 9
- [Design for Mechanical Reliability \(DfMR\)](#): May 10
- [Design for Warranty \(DfW\)](#): May 11 morning
- [Design for Software Reliability \(DfS\)](#): May 11 afternoon

### TRACK TWO - REL TOOLS: ALT/DOE/RCA

- [Design of Experiments \(DOE\)](#): May 7-8
- [Best Accelerated Reliability Tests \(BART\)](#): May 9-10
- [Root Cause Analysis \(RCA\)](#): May 11

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## COURSES

### ▶ **Course: Certified Reliability Engineer (CRE) Preparation Course**

**Date(s):** Jan 17 - Feb 28, 2012

**Time:** 6pm-10pm one night a week, 7 weeks

**Instructor:** :John Cooper, Ops A La Carte

**Length:** 7 weeks

**Cost:** \$1295. We offer 25% discount via webinar or for unemployed / for students not getting reimbursed.

**Location:** San Jose, CA

#### Special new options:

- ▶ **Offered via webinar for out of town students.**
- ▶ **Tutoring over the internet is now available.**
- ▶ **Offered on-site for companies with 8 or more students (we did a class for NASA in Sept '11).**

**Description:** Becoming certified as a Reliability Engineer (CRE) can be valuable to your employer and your career. We are offering this Exam Preparation Course. Students have found it very valuable in preparing for the exam. Even if you are not planning on taking the exam but need a good, in-depth course in Reliability Engineering, this can benefit you substantially.

**Course Webpage:** [CRE Course by Ops A La Carte](#). For more info or to register, please



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▶ For information on other course offerings go to: [Ops A La Carte Schedule](#). All our courses are offered as **tailored** seminars at our customer's location. To view a list of all all seminars, go to [Ops Course List](#)

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## EVENTS

▶ [BIOMEDevice Show](#) - **December 6-7, 2011, San Jose, CA, 10am-4pm**

We will be giving a seminar on December 7th at 2:30 called "[Managing Design Risk](#)". The seminar is part of the Innovation Briefs series and will be held at the Innovation Briefs Theater at booth #801 on the event floor. The seminar will be co-presented by other members of the Product Realization Group (PRG). We also will be at the PRG Booth (#1015). Register at: [MD&M](#)



For more info, please



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► [MD&M Webinar](#) - **December 15, 2011**, FREE WEBINAR, 8:45-9:30am PST

We will be giving a seminar called "**When the Standard Doesn't Fit: How to test using a guidance vs. a standard**". Register at: [MD&M](#)



For more info, please



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► [Reliability, Maintainability, and Availability Symposium \(RAMS\)](#), **January 23-26, Reno, Nevada**  
**About Event:** We will be exhibiting and presenting the follow 6 papers and tutorials at this event.

"*The Useful Synergies between Prognostics and HALT and HASS*", by Ops A La Carte and RidgeTop Group  
"*What Is DfR and What it Is Not*", by Andre Kleyner and Mike Silverman  
"*Effective Reliability Program Traits*" Tutorial, by Fred Schenkelberg  
"*Establishing Effective ORT Requirements*", by Fred Schenkelberg  
"*Investment In Reliability Program Versus Return - How To Decide*", by Fred Schenkelberg  
"*How To Select The Right Accelerated Life Test Approach*", by Fred Schenkelberg



For more info, please



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► [WEBINAR on Design of Experiments \(DOE\) and Its Many Uses within Reliability](#), **February 1, 2012**  
Click here to [REGISTER](#)

*This is part of our monthly FREE Webinar series*

Design of Experiments has many uses within Reliability. We will cover the following topics:

- DOE for material selection
- DOE for design tradeoffs
- DOE for testing
- DOE and manufacturing screen



. For more info or to register, please



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► [MD&M West](#) - February 13-16, 2012, Anaheim, CA

On Feb 16, we will be giving a one day seminar called "**Medical Device Reliability Testing**". Register

at: [MD&M](#)



For more info, please



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▶ [IPC APEX](#) - February 26 - March 1, San Diego, CA

On Sunday February 26th from 9am-12pm [Vijay Prasad](#) of Ops A La Carte will be presenting a 3 hour seminar on "[Reliability Program Planning: Optimizing Analysis and Testing in a New Product Development Environment](#)"



For more info, please



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▶ [International Reliability Innovations Symposium \(IRIS\)](#) - March 16, 2011, San Jose, CA and via WEBINAR

The IEEE Reliability Society of Silicon Valley is sponsoring a conference specifically devoted to innovation. We have just opened the "[Call for Papers](#)". Deadline for submission is January 20, 2012.



For more info, please



#### SPECIAL OFFERS

▶ We will be visiting a number of cities this next quarter, including Los Angeles, San Diego, Chicago, and Dallas. We will also be visiting New Zealand and India. Please refer to the [News](#) section for the exact dates.

We will provide you 1 hour of **Free Consultation** with no strings attached. We will give you our expert advice on any issues you are having or trying to avoid.

In addition, we will offer you a free copy of Mike's book "[How Reliable Is Your Product: 50 Ways to Improve Product Reliability](#)" just for giving us the opportunity to speak with you.

Also, we have developed a new [Self-Assessment](#) tool. If you take it, we will also give you a free book.

If interested,



#### NEWS



BELOW ARE NEWS HIGHLIGHTS FOR THE PAST QUARTER. MORE DETAILS FOR EACH ITEM CAN BE FOUND AT [NEWS](#).

All presentations that we gave can be found on the technical download section of our website at [Technical Papers](#).

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▶ **Monday Dec 5, 2011** - [HALT Calculator Now on the Cloud](#). We are pleased to announce that our HALT

Calculator is now available as a cloud-based application so you can access it directly whenever you need. We also have a Paypal payment system in place on-line for quicker access. With the cloud application, we are also offering either pay by use (you can order as many use credits as you'd like) or yearly subscriptions. The yearly subscriptions work great when you have your own chamber or when you perform many HALTs a year and you would like to run the calculator during HALT planning to set must meet criteria, or when you are in the middle of the test and trying to determine which failures to fix and continue testing. And now [Chart](#) is offering our [HALT Calculator](#) as an option when they sell a chamber. To view our internet version, go to:



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► **Monday Dec 5, 2011, Mandarin Translation of "50 Ways" Reliability Book**, Managing Partner Mike Silverman's book "*How Reliable Is Your Product: 50 Ways to Improve Product Reliability*" just celebrated its 1 year anniversary of being published, and we are pleased to announce we just finished the Mandarin translation of the book and it is in the process of being published. You can view the 1st 3 Chapters at [50 Ways to Improve Reliability - in Mandarin](#), or [提高产品可靠性的50种方法](#). To preorder, please click here and provide your contact information. It will first come out in ebook for \$10 and will be available on all the major e-readers. Coming Q1 2012.

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► **Friday December 2, 2011, Medical Risk-Based Testing with IEC60601-1 3rd Edition**, FREE WEBINAR by Ops A La Carte and Chart Industries, part of the Ops monthly webinar series.

This webinar focused on IEC60601-1 3rd Edition and Risk-Based testing. The medical industry is moving in a similar direction to many other industries - Risk Based Testing. We discuss what this means and how to comply. We highlighted each of the clauses in the document to help you decode what each means and how to comply. But more than that, we show you how to change your approach to testing so that any test you consider, you think of the risks involved before you plan out the test.

It starts with Risk Management (work with Notifying Body / Test House, Regulatory Agencies, Regulatory Affairs Department), FMECAs, FTAs, Fishbone, etc. (Hazards & Risks). Use, Design, Process, and Software FMECAs are typically used as well as System Hazard Analyses. ISO 14971:2009 Application of Risk Management to Medical Devices also plays a big part.

► [Medical Risk-Based Testing - Presentation](#)

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► **Thursday Nov 10, 2011, Reliability in the Solar Universe**, FREE WEBINAR through ASQ, by Ops A La Carte and Concurrent Design.

This webinar focused on the many different types of solar products and reviewed the reliability of each type of product. The universe of solar products is large and expanding exponentially. Most of us are not aware of the manifold applications of solar energy from photovoltaic modules and solar furnaces through manned air travel in planes that never need fuel. Of all of the emerging clean tech industries, the solar industry is one of the most challenging from a reliability engineering perspective because the industry is innovating so rapidly. Customers (and investors) are demanding very high reliability products, exceeding 25 years in many applications. As this industry grows and expands in every direction, with many new and diverse technologies, the core element of reliability will continue to be critical for success, whether we are powering our homes, cars, clothing or sidewalks. Each aspect of a solar product must be considered for reliability. For example, in a solar power installation, the cells, the panels, the trackers, the inverters, even the installation itself, there are opportunities for failures. Whether industrial, commercial or residential, these applications have a high demand for reliability because the solar products will usually be taking the place of an incumbent, and therefore, they must be as good or better.

► [Reliability in the Universe of Solar Products](#), by Ops A La Carte and Concurrent Design.

▶ **Wednesday Nov 2, 2011**, [MD&M Minneapolis](#) - Minneapolis

We gave a seminar called "**Medical Device Reliability Testing**". We will be doing this seminar one more time in Anaheim in Feb, 2012.



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▶ **Tuesday Nov 1, 2011**, [Accelerated Reliability Testing for Medical Products](#) - Minnesota

Sponsored by **Minnesota Reliability Consortium/IEEE Reliability Society 2011**, Chart Industries and Ops A La Carte

Ops A La Carte gave a presentation called "[Accelerated Reliability Testing for Medical Products](#)".

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▶ **Tuesday Nov 1, 2011**, [IPC Conference on Reliability](#) - Irvine, CA

We gave a seminar called "[Accelerated Life Test Planning for Lead-Free Circuit Card Assemblies](#)".

We will be doing a similar talk at the [IPCAPEX](#) event Feb 26-Mar 1, 2012. The title of the next talk will be [Reliability Program Planning, Optimizing and Testing in a New Product Development Environment](#)

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▶ **Wednesday Oct 26, 2011**, [Improving Product Life Cycle Costs in Today's Global Manufacturing Environment](#) - Boston, MA

**About Event:** We had presenters for this event. The presenters and their topics are shown below. The event was sponsored by the Boston chapter of the IEEE Reliability Society. You can download each presentation in the links below or the full presentation in the link above.

**Ops A La Carte:** "[Using DfR to reduce Product Life Cycle Costs](#)", by Mike Silverman, Ops A La Carte

**Agilent:** "[The economics of diags and repair in the product life cycle](#)", by Duane Lowenstein, Agilent

**Camstar:** "[Holistic view of quality](#)", by Nader Fathi, Camstar

**Enterasys:** "[Real world savings?](#)", by Brad Martin, VP Operations and Quality at Enterasys

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▶ **Friday Oct 21, 2011 ASQ Silicon Valley Section Quality Conference** - Santa Clara, CA

**About Event:** The theme for this year was "On The Road to Performance Excellence"

OPS' exhibited at the event through the Product Realization Group and participated in a presentation at the event.

Also, Fred Schenkelberg of Ops gave a presentation on Accelerated Life Testing.



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▶ **Wednesday Oct 12, 2011 ASQ San Diego Event:** [Another Look at Today's Reliability Engineer](#) - San

Diego, CA

**Speakers:** Gerry Cohen, Senior Reliability Engineer, Ops A La Carte



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▶ **Tuesday Oct 11th, Integrating Simulation into a Reliability Program**, FREE WEBINAR, by Ops A La Carte and Tribal Engineering. Simulation and testing often go together as part of a strong reliability program. Finite element simulation provides data and insights that would be difficult or impossible to obtain from testing alone. Simulation gives results for all components, including those that are inaccessible, and over a wide range of conditions. The results from simulation can be critical parts of accelerated life test programs such as HALT and ALT. In this seminar, we showed techniques to integrate these tools into a reliability program to optimize your reliability results.

#### [Integrating Simulation - Presentation](#)

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#### ▶ [Accelerated Stress Testing and Reliability \(ASTR\) Workshop - Sept 28-30, 2011](#)

We gave 4 presentations at the event. You can download them using the following links:

- [Application of HALT for Reliability Evaluation of Electronics Modules](#), by Peter Arrowsmith, Ops A La Carte
- [Electromechanical Device Design Methods for Reliability Improvement](#), by Lou LaVallee, Ops A La Carte
- [Forensic Accelerated Life Testing of a TPU Wire Insulator](#), by Vijay Prasad, Ops A La Carte
- [Useful Synergies Between Prognostics and HALT and HASS](#), by Mike Silverman, Ops A La Carte

We also gave away a free copy of Mike's new book. The winner of the book was Greg Bauer of Anritsu.



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#### ▶ **Wednesday Sep 22, 2011, [MD&M Chicago](#)**

We gave a seminar called "**Medical Device Reliability Testing**". We will be doing this seminar one more time in Anaheim in Feb, 2012.



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▶ **For more information** on news, please visit our [News Page](#) or call (408) 654-0499.

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#### **FEATURED SERVICE**



**Medical Risk-Based Testing with the IEC60601-1 3rd Edition**

We have been advising clients to use risk-based testing methods since the inception of our company 10 years ago. However, only recently have the standards started catching up. One example of this is with medical standard IEC/EN 60601-1 3rd Edition. This marks the first time a medical standard requires users to base their testing approach on the risks they uncover during the risk analysis. We are hopeful that other industries are soon to follow.

In this article, the discussion will center on the International Standard for medical devices, the third edition of the IEC / EN 60601-1: Medical Electrical Equipment, Part 1: General Requirements for Basic Safety and Essential Performance (the General Standard). The newsletter will also discuss the changes from the 2nd Edition to the 3rd Edition of the General Standard. This newsletter will only look at the Standard at a very high level due to the recognition that there are a bewildering variety of medical devices on the market such that a detailed treatment of the standard is beyond the scope of this newsletter.

The 3rd Edition of the General Standard (IEC) was published in 2005 with the harmonized version of that Standard (EN) published the following year. It supplanted the 2nd Edition that was first published in 1988 with a number of amendments over the subsequent years leading up to the 3rd Edition. It was recognized that Basic Safety is not enough for Responsible Organizations that have to depend on other performance specifications regulated by market pressures such as Essential Performance (EP) functions or features. The 3rd Edition of the General Standard covers four general safety levels:

1. Electrical Safety
  1. Basic Safety (BS)
  2. Leakage Currents
  3. Dielectric Strength Potential
    1. Levels depend on Mains Voltage Connection(s)
2. Mechanical Safety
  1. Push, Drop, Impact, Rough Handling, Moulding Stress Relief, Expelled and Suspended Parts
3. Material Safety
  1. Biocompatibility, Sterility
  2. Flammability
4. Accompanying Documents / Labeling

The anticipated 2nd Edition "withdrawn" dates are shown below:

1. Europe / most of world: June 1, 2012
2. US: June 30, 2013
3. Canada: June 2012 for new products
4. Europe date is firm
5. US date not yet set in concrete

After these dates, the Medical Electrical Products must be compliant to the 3rd Edition of the General Standard. Exceptions can be made however by working with your 3rd Party Notifying Body (i.e.: TUV, UL, CSA, NSAI, BSI, etc.) by providing objective evidence of striving for compliance and a timeline for meeting the requirement objectives.

When the product is to be marketed, or ready to be marketed, as a medical electrical equipment (MEE) and /or system (MES), the applicable International Standard is the 3rd Edition of the General Standard. Unlike the 2nd Edition of the General Standard, in the 3rd Edition it always starts with Risk Management. The Risk Management File (RMF) is a set of records and other documents that are produced by the Risk Management Process as defined in the Standard ISO 14971:2009. Typical RMF documents can be FMECAs (Use, Design, Process, and Software FMECAs as well as System Hazard Analysis (HA) are use widely), Fault Tree Analysis (FTA), Fishbone analysis, etc. The RMF Report summarizes the highest risks determined from the analysis. It is these documents that the test house will review first to determine any single fault conditions or risk mitigations that need to be tested in addition to the Basic Safety tests that the General Standard requires. In essence, the 3rd Edition now becomes more of a Risk-Based standard as opposed to the 2nd Edition which was more of a Test-Based standard.

Another new requirement is the Usability Engineering File (UEF) which can take elements of the RMF as inputs. UEF is the application of knowledge about human behavior, abilities, limitations, and other characteristics to the design of TOOLS, machines, equipment, devices, systems, tasks, jobs, and environments to achieve adequate USABILITY (Characteristic that establishes effectiveness, efficiency, and OPERATOR learn-ability and satisfaction). The Collateral Standard for Usability, IEC 60601-1-6, will soon be replaced by the IEC 62366 Standard; Application of Usability Engineering to medical devices. The inputs to 62366 Standard takes many of same elements of the RMF Report outputs as well as the Accompanying Documents (i.e.: Instructions for Use (IFU), Operating Manuals, Patient Handbooks, etc.).

When preparing the RMF, one will need to clearly define the Medical Electrical Equipment (MEE) or Medical

Electrical System (MES) products Basic Safety and Essential Performance function or features as well as the products Applied Parts and those components that have High-Integrity Characteristics. The definitions of these are from the Standard:

1. Basic Safety (BS)
  1. Relates to a device not harming the Patient incidental to its operation (often passive such as radiation shielding or electrical grounding). (Freedom from unacceptable RISK directly caused by physical HAZARDS when MEE is used under NC and SFC.)
2. Essential Performance (EP)
  1. Features or functions that when they do not perform properly could degrade the ME Eqmt or ME System to a point that it is no longer suitable for its intended use (Performance necessary to achieve freedom from unacceptable RISK).
3. Applied Parts (AP)
  1. Part of ME EQUIPMENT that in NORMAL USE necessarily comes into physical contact with the PATIENT for ME EQUIPMENT or an ME SYSTEM to perform its function.
    1. Note: There are cases where non-Applied Parts that could come into contact with the Patient or the Operator (or both simultaneously) that will also need to be tested as though it was an Applied Part. (See
4. Components with High-Integrity Characteristics (Reliability)
  1. Component where one or more characteristics ensure that its function is fault-free in relation to the safety requirements of this standard during the EXPECTED SERVICE LIFE of the ME EQUIPMENT in NORMAL USE and reasonably foreseeable misuse.
5. Expected Service Life
  1. Maximum period of useful life as defined by the MANUFACTURER.

There are 17 Clauses in the 3rd Edition of the General Standard (consolidated from the 59 Clauses of the 2nd Edition). The first three clauses, Clauses 1, 2, and 3, pertain to the Scope and the Objective of the Standard as well as the related standards (the Collateral and Particular Standards), the Normative References, and the definitions of the terms used in the General Standard.

*The remaining 14 clauses make up the heart of the document. For more information about the changes in the remaining clauses, please go to*

[http://www.opsalacarte.com/Newsletters/2011winter\\_news\\_featured\\_service.htm](http://www.opsalacarte.com/Newsletters/2011winter_news_featured_service.htm)

More information about this topic can be found in Chapter 19 of Mike Silverman's book *How Reliable is Your Product? 50 Ways to Improve Product Reliability*. The book is available for purchase at [SuperStar Press](#) or [Amazon.com](#). You can preview the First 3 Chapters at [50 Ways to Improve Your Product Reliability](#).

## RELIABILITY BLOG



*Below is a summary of the Best of our Blog for last quarter - highlights of the best blog topics we had.*

*If you would like to contribute to our blog, please either*



or go to



- ▶ [Reliability of Repairable Systems vs. Non-Repairable Systems](#) by Aron Rolnitzky
- ▶ [Multiple Control Accelerometer Data – what it is REALLY showing you](#) by Steve Brenner
- ▶ [Continuation of Supplier Development](#) by Mike Gozzo
- ▶ [A Novel FMECA Approach](#) by Murray Shubaly
- ▶ [Mahalanobis distance and reliability methods](#) by Lou LaVallee
- ▶ [Harry & Sally and the Bathtub](#) by Edward Smith
- ▶ [Integrating Simulation into a Reliability Program](#) by Kim Parnell
- ▶ [Reliability Specifications](#) by Bob Bowman
- ▶ [Soft Errors and No Trouble Found](#) by Charlie Slayman
- ▶ [The Case of the Malnourished Zener Diode](#) by Harvey Altstadter
- ▶ [Reliability Acronyms](#) by Mike Silverman

## PROBLEM SOLVER



IEC60601-1 3rd Edition

How many clauses are there in the IEC60601-1 3rd Edition standard ? I will give you a hint: We covered this during our webinar on Dec 2 [Medical Risk-Based Testing - Presentation](#) and is part of our [FEATURED SERVICE](#) article above. The first 5 people to give the correct answer will get a free ebook version of Mike's book "[How Reliability Is Your Product: 50 Ways to Improve Product Reliability](#)"

## PARTNER'S CORNER



Concurrent Design is an Austin, TX based product development engineering firm. Concurrent Design specializes in Renewable Energy Product Design and Development with many years of experience in Solar, Wind, Storage, Solid State Lighting and associated Clean Energy application areas. Concurrent Design has been instrumental in product development for Concentrated Photovoltaic (CPV) systems, Photovoltaic (PV) systems; including crystalline silicon, thin film and III-V technology products and manufacturing systems, as well as inverters, trackers and mounting systems. Ops A La Carte partners with Concurrent Design in the clean energy space.



*Innovation. Experience. Performance.*

Chart is a global supplier of HALT/HASS System Solutions and is the technology leader in HALT and HASS chamber design, control systems, data acquisition, complete integrated system solutions, testing services and consulting. Ops A La Carte teaches seminars for Chart's customers in the areas of HALT/HASS and how they tie into the rest of the reliability program. Ops A La Carte also has a Real36 Chart HALT/HASS Chamber at their HALT and HASS Labs facility and use it to perform both HALT and HASS for clients. And now Chart is offering our [HALT Calculator](#) as an option when they sell a chamber.

## JOB OPENINGS



**Senior Reliability Consultant**

Ops A La Carte is looking for Senior Reliability Consultants *around the world* to join our team of consultants and work on some of the most exciting and challenging projects in the industry. If interested, email us via our [Ops Job Search Contact Form](#) or call (408) 654-0499.

For other available reliability jobs, visit <http://www.ewh.ieee.org/r6/scv/rl/jobs.htm>

*Ops A La Carte's newsletter goes out to over 18,000 subscribers. If you would like to put an ad or job opening in next quarter's "Reliability News", fill out our [Job Openings Form](#) or call at (408) 654-0499.*

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**To remove** yourself from this email, send an email with the word REMOVE in the subject line.

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