INCOSE Chesapeake Chapter
International Council on Systems Engineering

INCOSE Chesapeake Chapter
P.O. Box 535
Laurel, MD 20725-0535

E-Newsletter

December 2016

Back Issues

Ellie Gianni,
President, ESEP

President's Point of View (POV)
2017 Election Update

The 2017 election results are in. Please join us in welcoming our new Board of Directors at our January 18th meeting at the Johns Hopkins University Applied Physics Lab. The location has moved due to construction in Building 1 to the Building 200 Auditorium. Dinner will begin at 6 and the lecture at 7. Mr. Leonard F. Levine, from the Defense Information Systems Agency (DISA), will present a talk on DoD Perspectives for UAF Data Models. All are welcome to attend. Your 2017 Board of Directors includes:

Mr. Michael Pafford, President
Dr. Grace Crowder, President Elect
Ms. EleanoraAnn Gianni, ESEP, Past President
Mr. Craig Tyler, ESEP, Secretary
Mr. Anthony Gigioli, Treasurer
Ms. Myra Gross, ESEP, Communications Director
Mr. Mark Kaczmarek, Membership Director
Mr. Gundars Osvalds, ESEP, Programs Director

November Survey Update

In early November we asked you, our members, to vote on changes to our Constitution and Bylaws. We are expected to review this document once every 5 years. As a result, we chose to incorporate several edits to improve board operations for the chapter. We asked you via a survey to vote on those recommended changes. The results follow.

The Results

INCOSE Chesapeake Chapter Constitution and Bylaws. 28 members responded to the question about accepting changes to the Bylaws and Constitution of the Chapter. A total of 85.7% voted FOR the changes and 7.1% voted AGAINST. 7.1% also ABSTAINED from a vote. The BOD Constitution and Bylaws Committee and the BOD is in the process of approving and signing the updated version of this document. It will be posted on our web site soon. Thank you for participating in this process!

In Vol. 7 Issue 12

This is the monthly newsletter for INCOSE Chesapeake, a local chapter of INCOSE International. We are a not-for-profit organization dedicated to providing a forum for professionals practicing the art and science of Systems Engineering in the Northern & Central Maryland & Southern Pennsylvania area.

In the area of instituting a Chesapeake Chapter Scholarship Fund through the INCOSE Foundation for the use of Chesapeake Chapter members, their family members and Chesapeake Chapter student members who are Science, Technology, Engineering or Math (STEM) majors, 96.3% were FOR this action. 3.7% were AGAINST. Finally, we asked if a Chesapeake Chapter Scholarship Fund was created for members and members families, would you or your family utilize this program. The resulting answer was 60.7% YES and 39.2% NO. The Board of Directors will work during the 2017 year to accommodate the changes to the Scholarship Program to benefit our members and our local colleges and universities. More to come in this area in 2017.

Thanks for the Memories

This is my last President's Point of View article. I wanted to thank you, the members of the INCOSE Chesapeake Chapter, for allowing me to serve as your President for 2016. This was a challenging and very successful year full of new starts and experiences for all of us. Anything worth achieving is never easy and I can personally attest to that. Some of the successful firsts that we experienced this year include:

- Broadening our relationships with corporate sponsors to encourage membership and employment networking for our members via the Tech Expo Recruitment Events and Cyber Security Summit Conferences. We created and designed new business cards to now offer free of charge to our chapter members and forged new partnerships to provide value added services to our members.
- Broadening our relationships with other partnering organizations like PMI and IEEE to co-sponsor events and deliver guest speeches.
- Attending the WMA SEDC Regional Conference sponsoring a booth while also participating as a Steering Committee team member during the spring event.
- Partnering with CTI to enhance the availability of INCOSE SEP training opportunities for ASEP and CSEP candidates. The next training class is being offered February 6-10 at the JHU APL Kossiakoff Center.
- Renting a bus to take chapter members to a free October certification exam at George Mason University sponsored by WMA. We also proctored the test, providing three of the five ESEP proctors.
- Renting a storage unit to house chapter awards and supplies in January; consolidating these in one location accessible by all BOD members.
- Procuring new collaboration software that allows broader information sharing among our BOD and Associates.
- Formally structuring our chapter online data and files using a standardized naming convention so that we could preserve our historical data.
- Giving back by planning for a Silent Auction to benefit the INCOSE Foundation Chesapeake Scholarship Fund at our Annual Holiday Party and Awards Ceremony this month (many items are up for bid, see the list later in this newsletter).
- Regionally recognizing all newly certified SEPS and awarding patches, medallions and Polo shirts to those achieving certification.

These are just a few of the areas where our chapter has expanded our footprint and broadened our reach. In closing, I wanted to share some added statistics with you that

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http://www.incose.org/about/Membership/Join

The Chesapeake Chapter is always looking for volunteers to speak at our upcoming meetings! Please contact our Programs Director at programs@incose-cc.org if you would like the opportunity to speak or can recommend someone.

The Chesapeake Chapter of INCOSE is proud to recognize the following organizations for sponsoring our endeavors to expanding the understanding and appreciation of Systems Engineering in the local area.

covers our year. Thank you for the opportunity to serve and have a safe and healthy holiday season.

- Total Attendees at Chapter Events for 2016: 1033
- Dinners Served: 475
- Lunches Served: 127
- Breakfasts Served: 110
- Science Fairs and Student Outreach events Supported in 2016: 5
- Total Tutorials: 6
- Total Newsletters: 12
- Total SEP Certified Members: 151 (47%) ESEP (27), CSEP (98) or ASEP (26)
- Total Members: 322
- Total Members Participating in INCOSE Working Groups: 65
- Total Number of Working Groups Chesapeake Chapter Represents: 64
- Total Number of INCOSE Committees Represented on an International Level: 188
- Total Members Chairing Working Groups: 9
- Free Student Meals Served at Monthly Dinner Lectures: 55
- INCOSE International Workshop 2016 Attendees: 15
- INCOSE International Symposium 2016 Attendees: 27

EnergyTech 2016 (ET16); Cleveland, OH; November 28-30, 2016

Mike Pafford, President-Elect, INCOSE Chesapeake Chapter

Two members from the INCOSE Chesapeake Chapter (Mark Walker and Mike Pafford) were invited to speak at the EnergyTech 2016 (ET16) Conference held November 28-30, 2016 at The Wolstein Center, on the campus of Cleveland State University in Cleveland, OH. Mike Pafford presented two briefings in ET16 Track 1 (Model-Based Engineering of Complex Systems), Session A (Introduction to Model-Based Systems Engineering (MBSE): "An Introduction to the Object-Oriented Systems Engineering Methodology (OOSEM)", and Track 1, Session B (Adoption of MBSE in an Organization): "Implementing Model-Based Systems Engineering in Agile Software Development".

Mike also participated in the ET16 "Cybersecurity Workshop" Table-Top Exercise. Mark Walker presented a briefing in ET16 Track 1, Session A: "Introduction to MBSE". In addition, Mark moderated an ET16 Track 1, Session E Panel: "MBSE Use in Critical Infrastructure". Mark also presented a briefing in ET16 Track 5 (Energy, Environment, and Policy), Session F (Applied Systems Engineering for Energy and Critical Infrastructure): "Model-Based Methods in Complex Systems". Keynote Speakers for ET16 included Dr. Peter Vincent Pry, Chief of Staff of the Congressional Electromagnetic Pulse (EMP) Commission, and Executive Director of the Task Force on National and Homeland Security, as well as Dr. Michael Griffin, CEO of Schafer Aerospace, and former NASA Administrator and Head of the JHU/APL Space Department.

Chesapeake Chapter Events and Announcements

Scheduled Chapter Meetings and Monthly Dinner Lectures take place at the Johns Hopkins University Applied Physics Lab (JHU/APL) in the Building 1 Cafeteria and Parsons Auditorium and are held on the third Wednesday of each month unless otherwise noted. Dinner Meetings start at 6 PM ($20 in advance / $25 at door) and Lectures begin at 7 PM (Free).

Other upcoming events (Workshops, Tutorials, Symposiums, Galas):

December 7th – Chesapeake Chapter Holiday Party, Awards Ceremony & Silent Auction to benefit the INCOSE Foundation and the Chapter Scholarship Fund. Cost: $50

December 10th – IEEE/INCOSE Sponsored Tutorial, "Scaled Agile Framework (SAFe) 4.0"; 9:15am – 3pm; JHU/APL Kossiakoff Center; Free; POC: Debi Siering; siering@ieee.org

INTEGRITY TECHNOLOGY CONSULTANTS

The EnergyTech Conference was originally started by IEEE to provide a forum for Student Papers on Energy Technology and related concepts for publication in IEEE journals. It was later expanded in 2013 to include an INCOSE Partnership, which focused on a parallel path soliciting knowledgeable industry participation on existing energy systems. According to the ET16 Conference Chairman, John Juhasz, CEO of Telepath Systems, Inc., "This year's conference theme, Securing our Energy Future, goes beyond focus on technological advancements to reflect deeply on the major issues and risk concerns about energy and related critical infrastructure".

INCOSE Chesapeake Chapter Programs Update

Gundars Osvalds
Programs Director, ESEP

On 16 November, Ken Zemrowski gave an interesting talk on the impact of standards on systems engineering. He said that standards help us communicate with each other, team with other companies, and provide a foundation for SE processes. The entire presentation can be viewed on YouTube.

Upcoming Events:

January 18, 2017: Dinner Meeting and Presentation in JHU APL Building 200 Cafeteria and Auditorium. Mr. Leonard Levine from the Defense Information Systems Agency will present on Transitioning OMG UPDM to ISO Unified Architecture Framework (UAF).

February 6 – 10, 2017: CSEP Exam Preparation Course, taught by CTI from 7:30 AM to 3:30 PM in the JHU APL Kossiakoff Center.

February 15, 2017: Dinner Meeting and Presentation. TBD.

The Silent Auction is Open for Bidding at the Holiday Party on December 7th

Please join the CC members to help to fund the Chesapeake Chapter Scholarship Fund. All Proceeds Benefit the INCOSE Foundation Chesapeake Scholarship Fund. At the auction, you will find one or more items that are:

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This Newsletter is to serve our members and is open to all for contributions. Do

The silent auction benefits Chesapeake Chapter scholarship recipients. Our undergraduate Scholarship Criteria includes:

a. Full-time undergraduate students majoring in engineering (new in 2017 any Science, Technology, Engineering or Math (STEM) discipline).
b. Minimum G.P.A. of 3.0.
c. Preference for candidates with strong research and/or work history, including lab work, projects, and any awards pertaining to science, mathematics or engineering.
d. Cannot have received a previous INCOSE Foundation award.
e. New in 2017 - Candidates or their immediate family is a member of INCOSE Chesapeake Chapter.

We have awarded two Chesapeake Chapter Scholarship Award Recipients that will be recognized at our Holiday Party and Awards Ceremony:

- *Mr. Conor Briggi – UMCP, Mechanical Engineering, 2017*
- *Mr. William Gao – UMBC, Computer Engineering, 2019*

A list of the Silent Auction Items with the donors assigned value up for bid at the Silent Auction includes:

- CTI CSEP / ASEP 5 Day Training Course Seat at JHU/APL February 6-10, 2017, $2,868
- 4 Redskins – Carolina Dec 19th Lower Level Seating Tickets, 2 Parking Passes and 4 Pre-Game Field Passes, $691
- Art (Large Print and Associated Book), $600
- Two Ravens Eagles Club Seat Tickets, $500
- Champagne Brunch for 4 at The Engineers Club in Baltimore, MD, $300
- Group Portrait Photograph by Amandamations, $250
- Vintage HP-35 Hewlett Packard Scientific Calculator, Year: 1973, $200
- Signed Photograph, "500 Flags“, by Gundars Osvalds, $200
- Premium Scotch “Johnny Walker Platinum” Gift Basket, $175
- Signed Photograph, "Sleeping Koala“, by Gundars Osvalds, $150
- Star Trek Bluetooth Communicator, $150
- INCOSE ASEP Application Fee Waiver Voucher, $150
- Book, "Systems Engineering Guidebook” signed by Author James Martin, $150
- Dale Earnhardt Jr Autographed Picture, $150
- Chuck Noll Steelers Autographed Picture, $150
- Mixed Basket of Cheer, $125
- Apple Game Controller for Apple iPad, $100
- Set of Two Etched Crystal Vases, $50
- Target Gift Card, $50
- Home Depot Gift Card, $50
- Bass Pro Shops Gift Card valued at $50
- Two Amazon Gift Cards, $50 and $25
- As Seen on TV Basket, $75
- 1983 World Series Program, $75

you have an interesting idea for an article? A review of a new book related to engineering? Let us know. We’d love to hear about it. It may wind up in a future issue of our Newsletter.

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INCOSE Chesapeake Chapter
WISE
Women in Systems Engineering

IEEE
Advancing Technology for Humanity

- 2001 Super Bowl XXXV Program, $50
- Saturday Afternoon Kit – Hendricks Gin and Tonic, $50
- “Vinegar Hill 1963; Life in the Neighborhood” Photojournalism Book Autographed by Photographer Gundars Osvalds, $50
- AMC Theaters Gift Cards, $40
- Book, "Systems Engineering Innovation & Design“ , $30
- Starbucks Gift Card, $20
- Autographed set of Books and CDs by Monica Mathern:
- “Standing in the Center of the World”, $20
- “The House Overlooking Cherry and All Along Cherry Street”, $25
- “Santa's Elves' Trick or Treat Adventure, $15
- “Strangely Christmas “, Audio CD, $15
- “Quetzalcoatl and the No Pet Policy”, $11
- A Unique Collection of 10 Antique Slide Rules with Leather Cases:
- Frederick Post (Hemmi) Model 1450 Versalog, Qty.2, $80
- Keuffel & Esser Model 4081-3 Log Log Duplex Decitrig , Duplex , $75
- Pickett N803-E5 Log Log Speed Rule, Dual Base, $45
- Jeppesen CR-2 Pilot’s Slide Rule Computer, $45
- Jeppesen Pilot's Computer Model CR-5, $45
- Pilot’s Military MB-2A Computer with Instructions, $55
- Jeppesen E6B Style Computer and Wind Plotter, Model CSG-2A $65
- US Navy Star Finder and Identifier, No. 2102-C, $75
- US Power Squadron Star Finder, $75
- Heavy Duty INCOSE Pocket Protectors, $3 each
- Herschede Chiming Tambour Clock, Electric, Year: 1930, $125
- U.S. Flag Hooded Sweatshirt. $35

The Slide Rule —A Pathway to Powers

Revisiting the human and software interface with Mathematics

George Anderson
Past President,
ESEP

Some believe that new knowledge is the result of combining old knowledge in new ways. This idea has motivated me to share my recent thoughts on the slide rule era and what lessons it may have for us with current SE life cycle development problems. I believe one of these problems is our increasing isolation from the physical world, its complex mathematical models and our fading capability to verify our designs at an early stage of development. For instance, I wonder when I see a growing selection of book titles offering new processes for finding software bugs without considering the programmer's ability to enter the mathematics of the problem in an executable or correct form.[1] Further, the intense current interest in AGILE development appears to ignore individual competence that most assuredly must include proficiency with fundamental and sometimes very complex mathematical equations.

[1] An older phrase, cookbook engineering comes to mind

What people are saying about Chesapeake Chapter in 2015:

“… What a wonderful, innovative, and impactful year for the Chesapeake Chapter. I hope you, your board, and the entire chapter is proud of what you have accomplished…”

Past President,
INCOSE

Booz | Allen | Hamilton

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Figure 1. "Show me all the blueprints. Show me all the blueprints. Show me all the blueprints...." Howard Hughes in the film, The Aviator, 2004

If my suspicions are correct, we may be wasting large sums of money annually on chasing mathematical or logic errors that could have been easily found if we had just "checked the blueprints". Does anybody remember when folks were hired solely to do that job? Today, they are operating CAD/CAM programs and creating yet another potential verification vacuum.

The era of the slide rule is past thanks to Bill Hewlett of HP (Figure 2) In spite of this there are some robust survivors that I will mention later. First, I will describe enough of the slide rule's history, attributes and legend to assert that in 1972, engineers began to lose something that we will always need. That is a working understanding of math fundamentals.

A calculator or a computer program is a wonderful tool to reach tentative results but who verifies the output? It could be someone who might be weak in applying basic math concepts. I think that this could include almost all of us and sadly there aren't enough high school math teachers or "subject matter experts" available to clean up our collective mistakes! With this in mind, let's visit the era of the slide rule and see just what was different.

Figure 2, HP co-founder, Bill Hewlett, holding a slide rule on the 20th anniversary of the HP-35. The HP-35 made the slide rule obsolete

Could we imagine a difference in math skills for engineers prior to and post 1974? America's response to the launching of the first Sputnik in October of 1957 was a mathematical Pearl Harbor that resulted in a national commitment to improve all math education. The term rocket scientist was soon born and many believed that they were the visible result of this change in national priorities. This enlightened era lasted until the 1980's when the introduction of calculators made basic math concepts a bothersome artifact of a faltering undergraduate curriculum. This was the golden age of the slide rule. So what was the slide rule's contribution to math proficiency?

The short answer is that unlike its newer digital counterparts, it linked the operator's thought process more closely to the problem and the creative engineering process. While there is no reason to rush out and buy a slide rule in 2016, there is also no reason that our still essential knowledge of math would not enable us to make quick work of understanding and appreciating how it works.

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Chapter Business Cards

Please contact Mark Kaczmarek at membership@incose-cc.org to obtain your own Chesapeake Chapter business cards. Free to Chesapeake Chapter members.

To me, as a Sputnik era user, the slide rule functions in two modes. The primary mode is using logarithmic spaced scales to multiply, divide and obtain powers of numbers. The other mode provides various lookup tables for functions with bounded values. This is of course just a convenience and in no way unique to a slide rule. Over the years I have noticed that many newcomers to the slide rule become fearful of its complex array of scales. Figure 3, shows the later version of a complex rule but most calculations are done on just two scales. In fact earlier slide rules (the Darmstadt design) typically had only 4 scales.

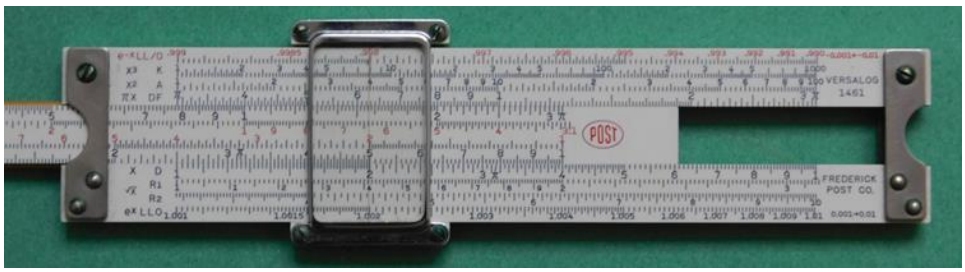

Figure 3. Slide Rule set to read: 2 X 2 =4(Post Versalog Model 1481, circa 1962

The secret of the slide rule is taking logarithms of the numbers 0 to 10 and spacing them out on at least two scales that slide with relation to one another. The actual numbers are written on the scale so that when one scale length segment is added or subtracted from the other, we are multiplying and dividing the two numbers we have selected. This mechanical adding of logarithm values dates back to at least 1617. The dead giveaway that the scales are logarithmic is the converging spaces between numbers as they increase in value. The fundamental enabler of all slide rules is the algebraic expression:

$$\text{Log}(xy)=\text{Log}(x)+\text{Log}(y)$$

(where x and y are numbers to be multiplied)

Raising numbers to powers was an added feature that was essential to most scientific fields and employed other logarithmic relationships. This was accomplished with two moving parts: the cursor, and the slide. The only common alternative to a slide rule prior to the advent of mainframe computers in the 1960's was to use published tables of logarithms.

I will move on from this brief summary of slide rule mathematics but I have included references for those who wish to learn more .[2]

Why does the slide rule invoke more careful attention to the problems being solved? I believe there are two tangible reasons and one speculative. The first is the inspection and verification of the problem is more likely given the physically deliberate nature of the input as opposed to the key press with its recognized errors on a calculator. Second, the mental process of setting the

Figure 4. Sir Frank Whittle, inventor of the jet engine

[2] http://sliderulemuseum.com/SR_Course.htm, https://www.youtube.com/watch?v=waiprjueVpQ

Interested in Jobs & Networking

Contact Mark Kaczmarek at mkaczmarekengr@comcast.net

Or attend one of the Tech Expo Events in our area:

https://www.techexpousa.com/

Membership Arena

Mark Kaczmarek, Membership

The Chesapeake Chapter proudly welcomes our new members:

December

Francesca Raub, Capella University

November

Robert Baker, Colorado State University Systems Engineering Programs

Gordon Lancaster, National Security Agency (NSA) Enterprise Systems

Kirk Michealson, Tackle Solutions LLC

Announcement:

The PMI Baltimore Chapter is scheduling its "PMI Lunch Event Talks" for

decimal point in the answer involves a second error check. The final reason is speculative and based partly on my own observations. The tactile and mental interaction with a slide rule is quite different from programming or operating a calculator. There seems to be a human need to manually participate in an intellectual process. This need may not be as well satisfied by punching keys on a calculator. For further explanation of this view see Dr. Matthew Crawford's book, Shop Class as Soulcraft.[3]

How long has the slide rule been around[4]?

The beginning was in 1617 with the inventor of logarithms, John Napier. Three years later William Oughtred, produced the first slide rule and interestingly devised a circular slide rule as well. The first mass demand for slide rules came in 1790 when Boulton and Watt employed them in the design and manufacture of steam engines at the beginning of the Industrial Revolution.

Further improvements of the slide rule were completed well before the end of the mid 1850's and very little fundamental changes have been made since then.

The early patent records tell much of the story that is available concerning use:

Years	Slide rule types (designs) recorded
1625-1800	40
1800-1899	250
1900-1910	90

World slide rule production in the 20th Century is estimated by researchers to be 40 million

We can conclude two things from this history: Slide rules have been around a long time and were an essential tool for computing, at least in the sciences.

Today the slide rule is alive and well in the cockpits of aircraft. Pilots are still trained to use circular slide rules and many use them in spite of the many other computers and calculators at their disposal. I have addressed this phenomenon in an earlier article, and based on my 20 years of flying experience, I feel that it has a long career left.[5]

I want to conclude by providing a gallery of pictures of past engineers and scientists who are either posing or actually computing with slide rules. They seem as a group to be pleased with their lot and not burdened with its operation. So many poses with slide rules suggest that they felt it was part of their identity— Like the ancient Egyptian scribes we see captured in stone holding a writing tool. In contrast, I have found no pictures of important people posing with an electronic calculator. I hope many of you found something of value in this article; I certainly enjoyed creating it. Happy Holidays.

2017, and the INCOSE Chesapeake Chapter has been invited back to speak on a Systems Engineering (SE) subject relevant to PMI Program and Project Managers. The PMI Chapter holds these one-hour lunch-time events on the 4th Monday of each month.

The only months already scheduled in 2017 are February and October. If any Chapter member has a PMI-relevant SE subject they'd like to present, please contact the Chapter Programs Director Gundars Osvalds, programs@incose-cc.org, or any other Chapter Board member to discuss your proposed topic.

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[3] https://books.google.com/books?id=oc4XsaqD4qsC&printsec=frontcover&dq=shop+class+as+soulcraft&source=bl&ots=azvI_R7c2q&sig=b3DCX3cdQ-cX1pm6UOe2G6k2ZIw&hl=en&ei=pQ9fTI34M8WblgeHwfWZCA&sa=X&oi=book_result&ct=result&resnum=8&ved=0CEIQ6AEwBw#v=onepage&q&f=false

[4] http://www.oughtred.org/history.shtml

[5] https://www.dropbox.com/s/p4cqsxnkvpfy4lp/The-E6B-Navigation-Computer.pdf?dl=0

Aristo Slide Rule Ad

Marie Smith, lab technician at Billings Hospital in Chicago (1942-44) using a K&E 4053-5 20 inch long slide rule.

Janis Lyn Joplin (1943-1970), famous rock singer, shown with a slide rule. She was a member of the Slide Rule Club when a Junior at Thomas Jefferson High School in 1959, Port Aurthur, TX.

Cadet Douglas Jenkins, US Air Force Academy at Colorado Springs, Class of 1964

Hall Hibbard (left) and Clarence "Kelly" Leanord Johnson (1910-1990) holding a K&E or Dietzgen slide rule. Both looking at a blueprint of the the Lockheed Constellation. Kelly Johnson was the engineer on 42 of the most famous planes in aviation history, including the P-38 Lightning, Constellation, the U2 and the SR71), which all were designed using slide rules.

Senior Sergeant Mikhail Kalashnikov (Kalasnyikov) the inventor of the automatic rifle named after him and designed in 1947

Boeing 707 Flight engineer with circular slide rule

AEG_Office_Berlin_1913

Hamburger Professional School, Germany (1961)

Joshua Routledge (29)created the Routledge Engineer's Slide 1773-18 Rule circ 1805 and invented the Rotary Steam Engine, Bolton Library portrait.

The Professional's Book Review Series

Mike Pafford, President-Elect

"Software Engineering in the Systems Context: Addressing Frontiers, Practice, and Education"; Ivar Jacobson and Harold "Bud" Lawson, Editors; (College Publications; 2015)

This book is Volume 7 in The Systems series of published books related to Systems Science, Systems Thinking, Systems Engineering, and Software Engineering that address practices and education across these disciplines. The series is published in cooperation with College Publications, the School of Systems and Enterprises at Stevens Institute of Technology, and the Bertalanffy Centre for the Study of Systems Science (BCSSS).

This book provides perspectives on the problems and opportunities in engineering current and modern software-intensive system solutions. One objective of the Editors is

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Upcoming INCOSE Events

Webinar 94: Systems Thinking Throughout the Life Cycle for Man-made Systems

Dec 14, 2016 - 11:00 AM - 12:00 PM ET

This paper explores how Systems Thinking can be applied effectively throughout the development life cycle of complex systems.

INCOSE IW 2017 - Torrance, CA USA

Jan 28, 2017 - Jan 31, 2017

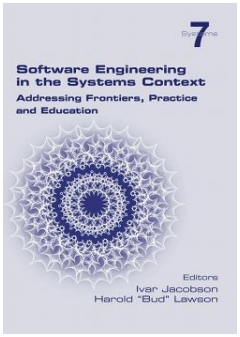
Torrance, CA

CSER 2017 15th Annual Conference on System Engineering Research

Mar 23, 2017 - Mar 25, 2017 - 8:00 AM - 05:00 PM PT

CSER 2017: Disciplinary

to develop the ability of software and systems engineers to think and act in terms of systems in order to improve their capabilities to collaboratively understand and communicate. In his Foreword for the book, Dr. Richard Mark Soley, Chairman and Chief Executive Officer, Object Management Group (OMG), puts forth that, "Software has become a dominant element in every complex system—and most simple systems—in the world".



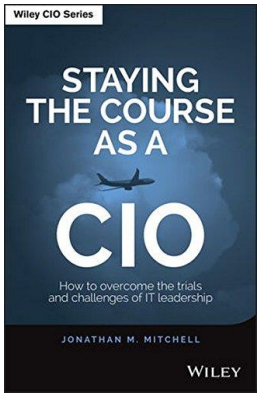
The book contains many systems-related subject areas including Attaining a Systems Perspective, Applying a Systems Perspective in Addressing Critical Infrastructure Resilience, Systems Engineering Standardization, Towards a Systems Engineering Essence, and Towards Capturing Value in Requirements Specification, among others.

Even though the primary audience for this book is practicing software systems engineers, I've found it to be a very valuable desk reference for any systems engineer working on projects involved in engineering software-intensive system solutions. Besides applying information from the book directly to my systems engineering projects, I'm also currently using this book as an amplifying reference for students in the Software Systems Engineering course that I teach in the Johns Hopkins University (JHU) MS in Systems Engineering curriculum.

Further information on this book, and the rest of the Systems Series can be found at: http://www.collegepublications.co.uk/systems/.

End of year Book Report

George Anderson, ESEP



"How to Overcome the Trials and Challenges of IT Leadership"; Ivar Jacobson and Harold "Bud" Dr. Jonathan M. Mitchell, Editors; (Wiley Publishers, 2015)

Book reviews can serve several purposes. They can inform you of a book's popularity, provide a brief synopsis of its contents and perhaps recommend that you read it. I select books that I have read and believe are professionally relevant to our Chapter's systems engineering Community.

Dr. Mitchell's book is an outstanding example of a business advice book. This genre is typically found at airport book sales kiosks where the targeted audience buys the title on impulse after a brief shuffle through the pages. From there the book is read on the first leg of the traveler's journey. If the book is still being read on the second leg, it suggests that the author successfully captured his audience and the book will be read to the finish, and perhaps even recommended to colleagues. It seems likely that authoring a successful business advice book requires more than basic knowledge sharing. There has to be a more integrated approach as is used in this book.

Convergence: Implications for Systems Engineering Research See the CSER website for flyer, details and Call for Papers!

11th Annual IEEE International Systems Conference

Apr 24, 2017 - Apr 27, 2017 ET

Montréal, Québec

INCOSE Track at IEEE Systems Conference Call for Papers

INCOSE IS 2017 - Adelaide, Australia

Jul 17, 2017 - Jul 20, 2017 UTC

Adelaide

IS 2017 - your chance to visit Adelaide!

CyberCore TECHNOLOGIES

JOVIAN CONCEPTS

What writing techniques work well? In Dr. Mitchell's case[6], he employs his extensive personal knowledge gained as a CIO in a number of highly regarded large enterprises and couples this with polished wit and compelling case studies. I was so impressed with his approach that I wanted to know how well this book has sold, but have learned that this may be difficult to discover unless the book is a best seller. Without this endorsement, let me provide reasons why I think this book is important. First, there is no temptation to graze through the chapters. An experienced SE will be engaged in chapter one and will gladly follow the clearly resonant chapter titles in sequence. Second, the discussions of problems will be recognized by anyone working in modern IT organizations. And third, the author clearly describes solutions that the CIO or his close advisors should consider.

These headings, combined with an embedded quote from each chapter, should serve to introduce the style and tone of the book.

Chapter titles:

1. Dislocated Stakeholders
    "Leaders are visionaries with a poorly developed sense of fear and no concept of the odds against them." Robert Jarvik (inventor of the artificial heart)

2. Pathogenic Projects
    "Everybody has a plan until they get punched in the face." Mike Tyson
    "I believe in one thing only, the power of human will." Joseph Stalin

3. Seriously Shaky Software
    "I have always wished for my computer to be as easy to use as my telephone; my wish has come true because I can no longer figure out how to use my telephone." Bjarne Stroustrup

4. Obsessive Outsourcing Compulsion
    "This budget is like an Enron budget—smoke the numbers, cook the books, hide the truth and hope no one finds out." Sen. John Kerry

5. Chronic Consultancy Syndrome
    "Consultants eventually leave, which makes them excellent scapegoats for major management blunders." Scott Adams

6. Strategy Schizophrenia
    "In real life, strategy is actually very straight forward. You pick a general direction and implement like hell." Jack Welch

7. Bleeding Budgets
    "Don't tell me what you value, show me your budget, and I'll tell you what you value." Joe Biden

[6] **DR JONATHAN M. MITCHELL** is an IT executive with over 30 years of experience in global blue-chip companies. For nearly a decade he was the Chief Information Officer, Business Process Improvement Director and Corporate Development Director at Rolls-Royce. Prior to that he built a successful IT career at BP and GlaxoSmithKline, where he rose to become a Vice President. In recent years he has appeared in lists of the most influential Global CIOs in Information Week, CIO Magazine and Computer Weekly. http://www.wiley.com/WileyCDA/WileyTitle/productCd-1118968875.html

8. Epilogue--What Might Overcome You?

"I know he's a good general, but is he lucky?" Napoleon Bonaparte

And last, but most apt:

"Always acknowledge a fault. This will throw those in authority off their guard and give you an opportunity to commit more." Mark Twain

My favorite paragraph in the book deals with outsourcing of architecture. It is an uncharacteristically large paragraph extending over half a page but captures in a humorous tone some of the bizarre and unexplainable truths of the outsourcing relationship. I have tried to capture some of the paragraph's style in a heavily abridged quote:

> "Architecture is something that outsourcing companies ought to be able to do well. However, many seem to struggle with it. ...In almost every arrangement I have inherited, however, I have found an unholy mish-mash of trendy and ancient technologies. Each appears to have been implemented in an almost playground-like environment by capricious project managers....Some commentators have even referred to the resultant mess as a 'hairball' (Kobielus, 2010; Feld, 2009)....The completely disastrous muddle took years to straighten out....I would strongly recommend that you define a multi-year architecture based around simple principles. Then make everybody stick to it under pain of death..." (pp 120)

If this quote appeals to you, make plans to obtain the book and appreciate it as much as I did. Happy Holidays.

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Please join the INCOSE Chesapeake Chapter BOD at these career fairs where the focus is on your career development. We are happy to answer any questions you may have relating to the merit of membership in our society as well as the opportunity we offer for continuous career expansion and growth. Please contact Mark Kaczmarek at mkaczmarekengr@comcast.net if you are interested in staffing the booth at one of the upcoming events. *CSEP's can receive PDUs for assisting the chapter.*

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For any comments or suggestions about this newsletter please e-mail our Editor, B. Azan or our Communications Director, Pat Williams. We value your feedback.

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