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sti NEWS

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DAVE'S WORLD

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"IT WAS A DARK AND STORMY NIGHT…"
BY: DAVE RABY

Actually starting about 9:00 pm on April 27th it was very calm and extremely quiet but the day had been a whole different story. I'm sure you saw news reports from our area regarding the tornado outbreak. More than 300 people were killed in Alabama along with more than 6,200 homes destroyed and more than 5,000 homes heavily damaged. What you have to see to believe is how many of those aren't "destroyed" as much as they are simply "gone". Many left a foundation, but on some, even part of the foundation is also missing.

STI was lucky and all of our employees and their immediate families are fine. We had one with their home in the "gone" category and another in the "heavily damaged" but the people are fine. STI was without power for 4+ days and some employees were without it for a week (6 days for me). We missed customer's phone calls for two days (although if you are a customer in North Alabama, you probably weren't calling us anyway).

We did a lot of things right to be prepared for the storms, and we learned a lot of things that we need to do differently to prepare for future events. Some of those changes are already underway.

I have to tell you how proud I am of the people at STI. There were some extraordinary efforts that helped control our losses and get us back up and running as soon as we did have power. Our emergency generator for keeping solder paste cool didn't work so Diana & James came up with the bright idea of calling a customer in Tennessee (they had power) and asking them if they would store our paste (both what we sell and what we use) and then transporting it through all the damage and subsequent traffic jams to the customer's facility when they immediately said yes. Thank you Teledyne Electronics! Tony did a great job of preparing our computer system to power back up in a logical fashion and had all of us prepared for how that was going to work. Mark traveled approximately 60 miles to get a cell phone signal so he could call customers who had been expecting a delivery. All of our equipment was shut down and breakers turned off so power surges during restart wouldn't be a problem. All of our managers did a good job of keeping in touch with employees, first to make sure everyone was okay and then by coming back to work updates through text messaging since email and phones weren't working. By Friday we were able to start rolling some phone calls over to Diana and Kelli's cell phones. Diana, Kelli, & James had even come up with a plan to start taking and shipping orders on Monday even if the power had not come back on. I'm thankful they were looking out for you and STI and were willing to go the extra mile to ensure STI's customers were taken care of in spite of the challenges of no power, phones or email.

I have to thank you for all the phone calls and emails we received asking about our welfare. Those meant a lot to all of us. I also have to apologize for scaring people by not responding for several days but again, in most cases we didn't get your messages until the power was back on. Thank you also to the employees at Raydar & Associates for the huge "care package" (3 large boxes) they sent. We gave our affected employees the first shot at everything and then donated the rest to the local Red Cross shelter where people were very grateful. We also appreciated Xetron's gift basket to our employees who were also very happy to be thought of by a customer from outside the area.

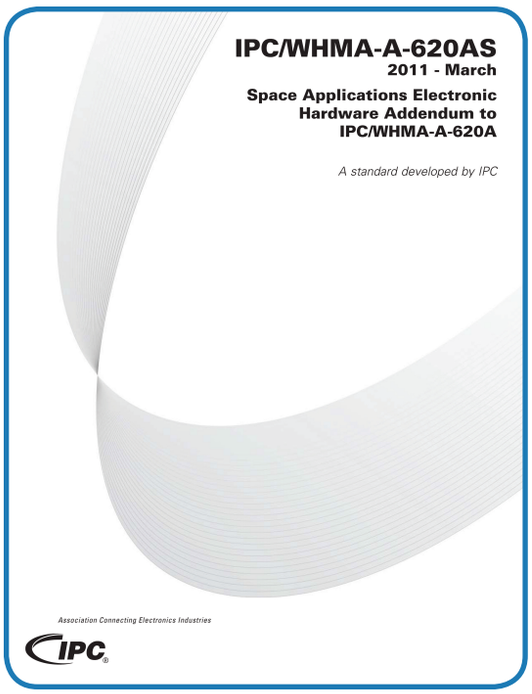
STI is pretty much back to normal now although many people in the area were not nearly as fortunate and we are reminded of that every day when we drive almost anywhere in the area. Please continue to remember them as well as all the others affected by the recent wrath of natural disasters.

On a non-storm related note, business is good. March was the best month of sales we have ever had and April probably would have broken that record had we not been closed the last 2 days of the month. (Sorry, storm reference again.) We are so grateful for your support and are always looking for ways we can do more to help your business be successful. Please let us know how we can help.

David E. Raby

This newsletter is published quarterly but you can follow us on Facebook (STI Electronics) and/or Twitter (daveraby) and get news from us as it happens. http://twitter.com/#!/search/daveraby or http://www.facebook.com/pages/STI-Electronics/221269285375.

APEX 2011
BY: PAT SCOTT



Starting on April 9th, 2011 the IPC Standards Development Committee meetings began at Apex. I was fortunate to be able to attend the IPC/WHMA-A-620B "Requirements and Acceptance for Cable and Wire Harness Assemblies" meeting which was held April 10th and 11th. In order to view the 620B working draft go to www.ipc.org/status and scroll down to working draft and click on the link to IPC/WHMA-A-620B to get to the committee home page. In addition, there is a comment section available where you can find a comment list for the April 2011 meeting. The committee was able to get through most of these comments but felt that an additional meeting would be needed. It was decided that the meeting will be held at IPC in June 2011.

I also attended the 620AS Technical Training Committee Meeting held on Wednesday April 13th and chaired by Debbie Wade from ART. After some brief introductions Debbie turned the meeting over to Dan Foster and myself. Garry Mcguire, Dan Foster and I have been working on the development of the curriculum over the past couple months and we provided an overview of the course for both the Certified IPC Application Specialist (CIS) and Certified IPC Trainer (CIT). Here are some of the highlights of the meeting and changes that have been discussed since:

First it was noted that these classes should not be considered basic cable building classes. Knowledge of basic cable construction will be necessary in order to successfully complete these courses.

620AS CIT/CIS COURSES

- Prerequisite: Successful completion of 620A Certification CIT or CIS Base Course.
- Course Length (CIT and CIS): 40 Hours.
- Lectures (620AS) will be presented the first day of class with the rest of the week being made up of demonstrations and lab time to complete the workmanship sample.
- The CIS Course is not Modular.

EXAMS

- CIT - Open and Closed book exams (Recommend 50 question open book exam and 25 question closed book exam).
- CIS Course – Open Book Exam only. (No more than 50 questions).

Inspectors will have to demonstrate proficiency by inspecting workmanship samples rather than fabricating the cable assembly. This will be done using physical samples and pictures.

Look for the Beta classes to be run late this summer with training materials to follow.

Do not hesitate to contact me for additional information.

Regards,

Pat Scott

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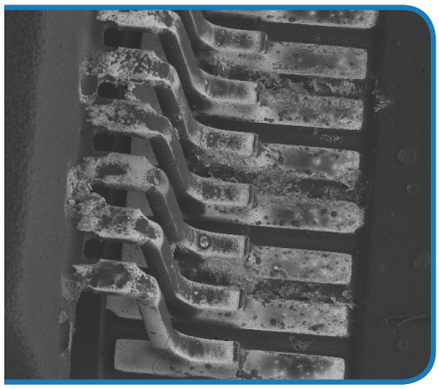

WHAT IS CLEANLINESS AND HOW IS IT DEFINED?
BY: MARK MCMEEN

Today we hear a lot about cleanliness and the need for circuit card assemblies (CCA) to meet a cleanliness specification or standard. Unfortunately there is no industry specification or guideline which outlines what microgram per square inch of Anions- Chloride, Fluoride, Nitrite, Sulfate, Bromide, Nitrate and Phosphate; Weak Organic Acids – Acetate, Formate, MSA, Adipic and Succinic; and last Cations – Lithium, Sodium, Ammonium, and Potassium. Does it matter if the CCA was manufactured using a No –Clean Flux? What about a CCA that was manufactured using either a RMA Flux or a Water Soluble Flux that has been cleaned/washed?

For years the Omegameter was used to determine or test for cleanliness using IPC -6012C -2010 Specification 3.9.1. The acceptable thresh hold was 1.56 micrograms per centimeter squared of sodium chloride equivalent, or 10 micrograms per square inch. This test only works for rosin based fluxes which are soluble. As no clean and water soluble fluxes were introduced to the manufacturing market, companies had to define the cleanliness in their procurement documents or assembly specifications and address each flux type and anion/weak organic acid /cation individually. This opened the door for individual interpretation of what is important and what that level should be defined as. STI's Analytical Lab has taken inputs from the large OEM's and have taken test data to create a recommended acceptance level for washed and no – clean flux chemistries that is achievable and can be monitored through IC testing.

STI's recommended cleanliness levels are data supported and achievable with main stream flux chemistries. The landscape of fluxes is ever changing and new chemistries are being introduced each year which requires one to stay diligent in their process materials and manufacturing processes to insure cleanliness that meets their customer expectation. One must have the ability to match a cleaning chemistry to a flux type to insure that one meets all the recommended guidelines or customer guidelines. It is better to know what your cleanliness level is and should be than to have returned product for corrosion from your customer. There has been rumblings and rumors that someday we will see industry guidelines but the truth and challenge lies in what is critical to some may not be as critical to others. Therefore a consensus and collaboration effort for a cleanliness standard is still at some ambiguous point in our future. High reliability, deep space, aerospace and medical will always demand ultra clean hardware whereas industrial and consumer want it to work for its warranty period. So do you know your cleanliness level and how to define it? Below are good reference points and good place to start. Just in the last 4 months I have had 4 customer inquiries on cleanliness levels. Some have been because of corrosion on hardware and others wanting to be able to answer customer internal questions. Be prepared and decide what is required for your situation? Again these are good guidelines and are conservative safe guidelines that are achievable and what STI uses in its manufacturing lab as a guide for cleanliness.

Please feel free to call or email should you have any cleanliness questions.

STI ELECTRONICS INC. RECOMMENDED ION CHROMOTOGRAPGHY (IC) GUIDELINES
WASHED BOARDS ACCEPTANCE LEVELS

ANIONS Level in μg of ion per in² of surface area	
Chloride	< 6
Nitrite	< 3
Sulfate	< 3
Bromide	< 10
Nitrate	< 3
Phosphate	< 3

WEAK ORGANIC ACIDS Level in μg of ion per in² of surface area	
Acetate	< 3
Formate	< 3
MSA, Adipic, Succinic Total	< 25

CATIONS Level in μg of ion per in² of surface area	
Lithium	< 3
Sodium	< 3
Ammonium	< 3
Potassium	< 3

WHAT IS CLEANLINESS AND HOW IS IT DEFINED? (CONTINUED)

STI ELECTRONICS INC. RECOMMENDED ION CHROMOTOGRAPGHY (IC) GUIDELINES

NO-CLEAN BOARDS ACCEPTANCE LEVELS

ANIONS Level in μg of ion per in² of surface area	
Chloride	< 5
Nitrite	< 3
Sulfate	< 3
Bromide	< 10
Nitrate	< 3
Phosphate	< 3

WEAK ORGANIC ACIDS Level in μg of ion per in² of surface area	
Acetate	< 3
Formate	< 3
MSA, Adipic, Succinic Total	< 125

CATIONS Level in μg of ion per in² of surface area	
Lithium	< 3
Sodium	< 3
Ammonium	< 3
Potassium	< 3

LISTA PRODUCT SPOTLIGHT
BY: KELLI KING

If your company assembles, inspects or packages products, you can count on Lista's comprehensive offering of products. Rely on Lista in applications such as PCB and circuit assembly, medical products manufacturing, mechanical and electric parts assembly, and for all operations involving testing, inspection, packaging, warehouse and shipping.

With their easy re-configurability, Arlink 8000 workstations can be altered for multiple functions and changes in your workflow. This enduring adaptability means that you'll have a cost effective solution for all of your assembly, repair, and light manufacturing workstation needs, both today and in the future.
Arlink 7000 Workbench Systems help companies like yours optimize performance in the workplace by providing efficient, ergonomic, and well designed workbenches which significantly improve productivity, maximize use of floor space, boost morale and produce a safer work environment.

Lista Xpress includes an extensive selection of storage and workbench solutions, all shipping in 3-5 days of order. Instead of waiting, you're working – with Lista cabinets, mobile cabinets, workbenches, workstations and accessories.

For more information, to request a quote or place an order, please contact sales at 800-858-0604 or sales@stielectronicsinc.com.

SALES

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JULY - SEPTEMBER 2011

MONTH	DATE	CLASS	LOCATION
JULY	06-07	IPC J-STD-001 Certified IPC Trainer (CIT) Recertification Program	Madison, AL
	06-07	IPC-A-610 Certified IPC Trainer (CIT) Recertification Program	Madison, AL
	08	J-STD-001ES Update, Space Application Addendum to J-STD-001E	Madison, AL
	11-15	IPC J-STD-001 Certified IPC Trainer (CIT) Certification Program	Madison, AL
	25-28	IPC-A-610 Certified IPC Trainer (CIT) Certification Program	Madison, AL
	25-29	Basic Soldering	Madison, AL
AUGUST	01-02	IPC/WHMA-A-620 Certified IPC Trainer (CIT) Recertification Program	Madison, AL
	03-04	IPC Rework/Repair and Modification Certified IPC Trainer (CIT) Recertification Program	Madison, AL
	15-18	IPC/WHMA-A-620 Certified IPC Trainer (CIT) Certification Program	Madison, AL
	19	IPC/WHMA-A-620 Instructor (CIT) Hands-On Lab	Madison, AL
	22-26	IPC Rework/Repair and Modification Certified IPC Trainer (CIT) Certification Program	Madison, AL
	29-01	IPC-A-610 Certified IPC Trainer (CIT) Certification Program	Madison, AL
SEPTEMBER	07-08	IPC-A-610 Certified IPC Trainer (CIT) Recertification Program	Madison, AL
	07-08	IPC J-STD-001 Certified IPC Trainer (CIT) Recertification Program	Madison, AL
	09	J-STD-001ES Update, Space Application Addendum to J-STD-001E	Madison, AL
	12-16	MSFC/NASA 8739.2/3 Solder Certification Course	Madison, AL
	19-23	IPC J-STD-001 Certified IPC Trainer (CIT) Certification Program	Madison, AL
	26-29	IPC-A-600 Certified IPC Trainer (CIT) Certification Program	Madison, AL

VALUE OF STANDARDIZED TRAINING PROJECTS
BY: MEL PARRISH

Over the years production operations training has benefitted from standardized training of one sort or another. When WS6536 was in place, the training plan for operators in various skill sets required DoD approval prior to implementation. Pretty drastic approach but the concept supported the general lack of understanding as to what the customer was expecting for minimum proficiency requirements. The advantage of standardization lies in a certainty of an achieved baseline level of competency that is consistent and achievable. Certainly additional training is usually required for full competency depending on the complex positions, but that training can progress from the level achieved based upon the standardized program.

STI Training Materials offers material support for several certification or standardized programs to include IPC J-STD-001 Operator, 7711 Rework Repair, Cable and Harness, NASA SMT and Through Hole, as well as the previous military programs. Contact me if I can help match training materials to your program.

These days the crew at STI Training Materials is buzzing from Chain Saw fatigue, but we all are doing as well as can be expected after the recent storms. Certainly we're blessed to have escaped serious injury with all of the devastation. Need any good firewood?

J-STD-001, OPERATOR TRAINING KIT

The feature Training Kit for this newsletter edition is the **J-STD-001, Operator Training Kit** (pictured below). It is available in either Lead Free or Tin Lead editions. Probably the most recognized assembly and solder training kit out there. Designed by STI! Mention the newsletter and receive a 10% discount for the month June and July 2011.

TRAINING MATERIALS

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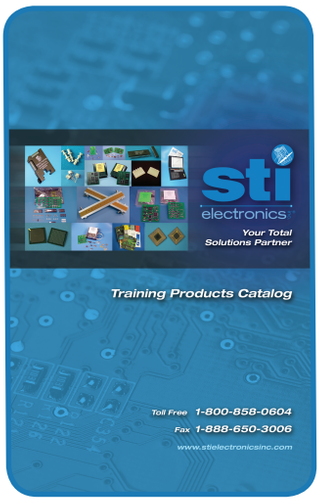
CHECK OUT OUR TRAINING PRODUCTS CATALOG!



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JIM D. RABY, PE, TECHNICAL DIRECTOR

I was just thinking about manufacturing equipment companies and how some of them work very hard to maintain growth and market edge, while others have coasted along with products that they have had for years and as a result, get by or are passed by in an aggressive industry.

Now, specifically think about the soldering iron industry and the things that need to be done to advance the state-of-the-art. Many times a company will spin up a subsidiary company to produce their engineering and prototypes. They will pull their engineering staff directly from the old school population and ask them to do this advanced planning and design. It is difficult to see how these people will think ahead or "out of the box". They are only going to support the old design and confer with the same old school colleagues and have no new ideas. To achieve or develop leading edge technologies, one should go to a university known for producing great engineering talent and collaborate with their students or recent graduates. These people have no preconceived notions, have no old ideas and don't know any better than to think "out of the box" using new technology. As a result, leading edge technologies are developed that meet the challenges of today that are brought to the market. Let's look at an example. The direction of today's facilities need process control such as written guide-lines for every act performed, recordings of each of these actions and a way to know beyond any doubt exactly what was performed.

If I was designing a soldering iron today, I would not be overly concerned about color or wrappings but I would be concerned about how to track the amount of touches by the soldering tip per connection, the temperature of the soldering tip, the dwell time on the connection. All data could then be used to gauge competence of the operators and training needed.

I would probably have about five lines of readout on the base unit that gave instructions on what had been accomplished and what's next for the operator. I would have a base computer at the end of the line that could get feedback from each station on the line–one that would permit supervisor intervention and printout of each operator's actions. I would try to do the things that would help document the correct actions to be taken; like size of tip and when to change it. All of that is feedback that would be easy to capture.

Do you need help in advancing the state-of-the-art with your products to become the leading edge and the envy of industry with your products, or are you just going to change colors of the units and shipping containers? If so, that's just a marketing ploy. If you do need assistance and desire revolutionary thinking, then contact me. Remember if you are thinking "state-of-the-art" then you don't need me, but if you want to be "the leading edge of technology" then I'm your man.

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