

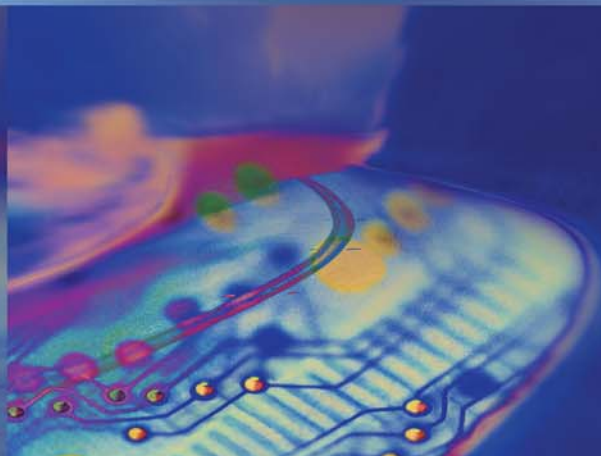
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"Woman Owned Small Business"

Volume 7, Issue 1

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Every two weeks when STI employees get paid there is an internal newsletter included with their check stubs. There is always a list of phone numbers for insurance questions, 401-k questions, security questions, etc.... Also on that list, is a line for "Rumors" and the number beside that one is mine. The idea is if someone hears anything about STI and would like to verify it, they are encouraged to ask me. I've got no reason to keep secrets and don't want employees worried about something that isn't true.

I bring this up because I keep hearing a rumor from customers (primarily in Florida) that STI is getting out of the Distribution Business. I don't know exactly where that started, although I do have an idea, but it seems to have taken on a life of its own. I can tell you now that I have absolutely no plans for STI to ever get out of the Distribution Business. Keep in mind nothing is guaranteed in the business world (mine or yours) and I only hope to work another 20 or so years but STI's business model has always been geared toward the long term and there are no plans to get out of any of the types of businesses we are in. (I would like to add some but that's for another article.) Some rumors start innocently enough but some are intentionally kept alive by competitors that can't compete in an ethical world. Those of you who have heard the rumors, think of who told you and if that's the only way they can compete, is that someone you really want to be doing business with? STI has spent 25 years building a reputation we are proud of and continuing that is always our goal. If you still have questions about our intent, follow the instructions from our internal newsletter and e-mail me or call me at 256-705-5502.

Speaking of 25 years, STI celebrates its 25th birthday on December 3rd. It has been quite a ride from 3 of us working for no money from a

dining room in Ridgecrest, California and an apartment in Huntsville, Alabama through 9 fun years in San Dimas, California and now Madison, Alabama since 1993. During that time, we have been fortunate to have customers in all 50 states and 45 different countries. I have no idea how many students we have trained or microsections we have done or training kits we have assembled but I know those numbers are big.

25 years ago I was thin and single and didn't have a clue what I was getting into. I've gotten over the thin and single part and have enjoyed the education and experience. I've earned approximately 2,500,000 frequent flyer miles and have almost that many stories to tell. Stories like ... an employee asking one morning if she could have that afternoon off to get married... an employee calling in one Monday morning and saying he wouldn't be in that day and maybe all week because he was incarcerated... one employee finding out that all of our mothers were correct when they said you could put an eye out playing with rubber bands... sending our two top engineers on a trip and getting a phone call from their arrival airport that neither was old enough to rent a car... not remembering for about 20 minutes to call our training building to let instructors and students know it was OK to come out of the restroom after a tornado had passed...

Those stories involve the employees who have made us who we are and the family we have become. Together we have gone through good business years and bad. Together we have won honors and awards and had a lot of fun along the way. Together we have laughed and cried together through many births, weddings, divorces, illnesses, and deaths. Together we have tried to pass our caring attitude to you, the customer. You are the

Dave's World (cont.)

reason we came to be in the first place and you are the reason we have survived 25 years. There are almost as many stories about customers but I'm running out of space.

Thank you for 25 great years and I look forward to many more!

David E. Raby

President/CEO

draby@stielectronicsinc.com

P.S. This month's building update. We have bought the land. We have almost finalized plans and by the time you read this should have most of the permits. Hopefully dirt will be moving soon.



Training Resources: 2007 In Review

By: Diana Bradford, V.P. of Operations/Training Resources



As STI celebrates its 25th anniversary and I celebrate my 10th anniversary with the company it is interesting to lookback over my involvement with the company and Raby family. I have known the Raby family for 20 years. In my previous career life, I worked for a college in the Atlanta, GA area. Since more and more electronics manufacturers were moving

into the area during the mid to late 80's we decided to set up a series of electronics related seminars. So at that point we have a topic or focus but no speaker. In asking around to various folks, Jim Raby's name kept coming up as the ideal speaker. I called Jim to see if he was interested and what dates he would be available. (If I remember correctly it took me a couple of weeks to catch up with him. I had to wait for him to return from whatever country he was in at the moment conducting similar seminars.) A date was set and as usual Jim drew a crowd and shared his wealth of knowledge with the electronics industry representatives present and I made a friend.

A few years later the Rabys and various employees and family moved STI (then Soldering Technology International, Inc.) from San Dimas, CA to Madison, AL. Over some of the previous years Jim had slowly handed the reins of the company over to his son David so Jim could do what he does best, mentor and teach. David contacted me about leaving the college and moving to Alabama as their Director of Training Services. In 1997 my family and I packed up and "moved away from there." It has been an interesting, busy, rewarding, exciting, sometimes frustrating, fun ... 10 years. As I said earlier, I made a friend when I met Jim but he can also make me angrier than anyone I know. (Those of you who have had the opportunity to work with Jim can probably understand this statement. It isn't that he is a difficult person to get along with, just very passionate about the industry he loves and is very specific about how he wants things done.) We have had some interesting and heated debates over the years but we always walk away friends and sometimes he is right (don't tell him I said that). Ok, enough of that. Moving ahead a few years.....

For the past 7 years I have served as STI's Vice President of Operations and Training Resources along with responsibilities for IT, Marketing, sometimes HR, etc., etc., etc. (In today's world don't we all wear many hats at once?) The past 10 years with STI have certainly been challenging but extremely rewarding and it has also allowed me to stretch my horizons and learn. In addition, I get to work with a great staff. STI is very fortunate to have some of the brightest and most dedicated employees of any company which is one of the reasons STI has been so successful and I am happy to be a part of that. Well enough reminiscing for now. I hope to be around in another 10 years to write my 20th anniversary letter. Who knows what hats I will be wearing by then!!

Merry Christmas and Best Wishes for a healthy, prosperous, and fun New Year!



David Raby presents Diana Bradford, Vice President of Operations/Training Resources, with a cruise for 10 years of service. Joining in on the celebration is Diana's husband, Richard.

Training Services 2008: *Schedule*

Madison, Alabama



JANUARY

- January 01-11 IPC J-STD-001 Certified IPC Trainer (CIT) Certification
- January 14-17 IPC-A-610 CIT Certification
- January 21-22 IPC Rework/Repair and Modification CIT Recertification

FEBRUARY

- February 11-12 IPC-A-610 CIT Recertification
- February 13-14 IPC J-STD-001 CIT Recertification
- February 15 J-STD-001DS Update, Space Application Addendum to J-STD-001D
- February 18-22 J-STD-001 Certified IPC Specialist (CIS) Certification
- February 25-28 IPC-WHMA-A-620 CIT Certification
- February 25-29 IPC Rework/Repair and Modification CIT Certification



Ann Duncan
Training Coordinator

To Register for a course or for additional information go to www.stielectronicsinc.com or e-mail us at training@stielectronicsinc.com.



Training Services: *A Look Back at 2007*

By: **Dan Foster**, Director of Training Services



Dan Foster

2007 has proven to be a memorable year. Not only did STI celebrate its 25th Anniversary but the Training Services Department has had another banner year. We've added an additional instructor to our staff and continue to grow in size. All of the instructors have been extremely busy this year. Frank Honyotski, Tom Borman, & Michelle Morring have spent most of their time on the road. The funny thing is they seem to be enjoying themselves. We're lucky they all enjoy traveling since they have many "homes away from home."

New courses have also been added and we've spent some time updating old ones. Our four day hands-on Cable Harness Course has been a tremendous success and we look forward to the release of IPC-7711/21, Rev B Rework, Repair, and Modification of Electronic Assembly document and the updated course that will follow. The recent addition of the J-STD-001DS Space Addendum Course to our schedule has also proven to be successful. Look for this course to become a regularly scheduled course next year.

On a personal note my oldest daughter will be finishing her sophomore year in college and the youngest is getting her driving permit. Normally this would not bother me but she wants to drive Dad's truck. Most of you know how I feel about my truck, and let's just say that is not likely to happen. Some things are not negotiable.

May you have a great 2008 and God bless each and every one of you the way He has blessed me.



(Back Row) David Raby, Frank Honyotski, Tom Borman (Front Row) Dan Foster, Pat Scott, Ann Duncan, Diana Bradford, Michelle Morring



Prototype and Development Lab (Manufacturing)

By: Mel Scott, Lab Manager



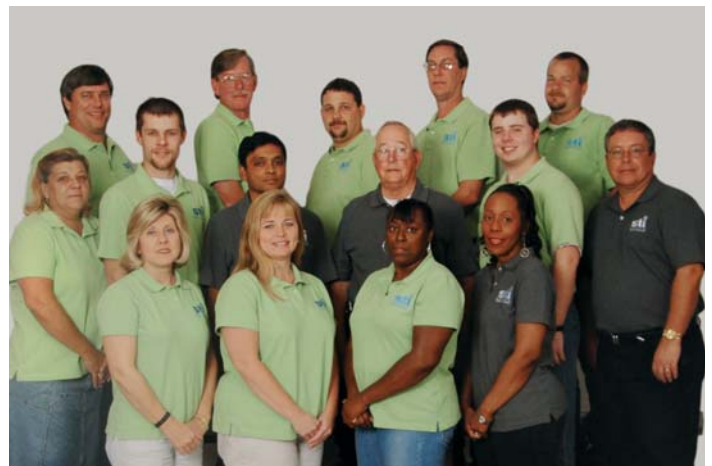
It's that time of year again. Time to reflect on what has transpired over the last 12 months and what we can look forward to over the next 12. Time to be thankful for all the good things (which are many) that have happened and to remember the lessons learned from difficulties that we have had. Time to gather with family and friends and celebrate the holidays.

Some of the good things that have happened in STI's Prototype and Development Lab include an approximate 50% increase in sales over 2006. This isn't as much as the 4 fold increase that occurred between 2005 and 2006 but still its healthy growth (and easier to manage).

On August 27 we received our formal certification to ISO 9001-2000. The certification covers the Analytical, Microelectronics and Manufacturing Labs of STI Electronics. This certification was a long time in coming and I'm convinced that some of the folks here believed that it wasn't going to ever happen. The certification effort began back in late 2001. Things went slowly at first and we didn't get serious about it until our customers began requesting that STI have ISO certification. We had a quality program, equivalent to ISO, but we weren't certified. We had been audited by NASA and Northrop Grumman and had passed these audits but of course it's not the same as having the formal certification. In late 2004, early 2005 we

became serious about ISO certification and had a pre-audit conducted by Perry Johnson Registrars. Before we had corrected the deficiencies found in the pre-audit I fell ill and was out for a while in 2006. This placed the formal program on hold until I returned. As many of you know, especially in small companies, the majority of the employees in our industry wear multiple hats. Everyone was busy and there wasn't anyone immediately available to pick up where I had left off so it waited for my return. Once I came back and completed correcting the deficiencies, we performed an internal audit using folks from the ISO Audit Consortium (IAC) here in Huntsville. Marcia Cornelius and Sheila Haney performed the audit. We thank them for their professionalism and constructive criticism. Fixing the things they found helped considerably with our certification effort. We then called for our formal certification audit from Perry Johnson Registrars and as mentioned were certified in August. Now the challenge is on continuous improvement and maintaining the certification. That's something to look forward to in 2008, much like a trip to the dentist for a root canal. It can be painful but it's necessary.

As we look back on 2007, we in the Prototype and Development Lab would like to thank all of our customers, friends and business associates for making it a very enjoyable year. We look forward to a prosperous and joyful 2008. If there is anything we can do to help you please don't hesitate to ask. We are here to serve.



(Back Row) Mark McMeen, Mel Scott, Bobby Inman, Randy Baumgarden, A.J. Oramas (Middle Row) Pam Whalen, Josh Wilhoit, Hira Sutradhar, Jim Raby, Joel Zarrow, David Raby (Front Row) Sandra Ferguson, Angela Couch, Mattie Birdsong, Pam Amerson



Continued on next page

Engineering Services: 2007 In Review (Cont.)

Analytical Lab

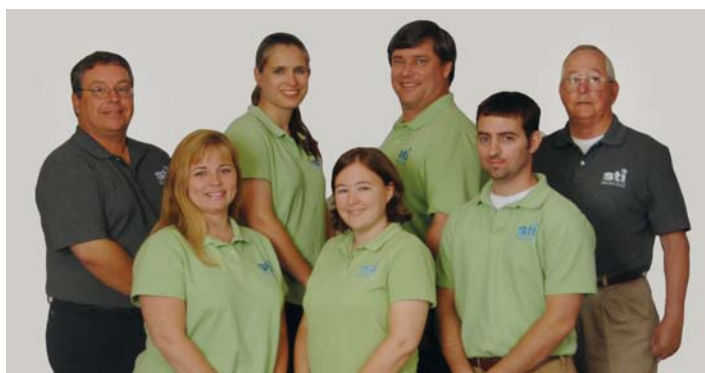
By: Marietta Lemieux, Analytical Lab Manager

To better service our customers by keeping our turnaround time to an absolute minimum, the Analytical lab has added a second Scanning Electron Microscope this year. This addition of another very high magnification imaging tool has been proven helpful in the increase of our throughput that has been a requirement with the natural growth of our customer base.

Another addition to our lab is a brand new automated Wetting Balance tester. A wetting balance tester is used to establish minimum standards for solderability of component leads, terminals, wires and hardware by quantitatively measuring the degree and speed of wetting. With the ever changing materials and processes within the electronics industry, there is an urgent need to constantly measure and monitor the solderability performance of the components and other applicable materials that effect electronic hardware.

We, the analytical lab, would like to take this opportunity to thank you for your business and hope that we may continue to serve you with all your failure- and material analysis needs in 2008.

Marietta Lemieux, Analytical Lab Manager (256-705-5531)
Aaron Olson, Senior Analytical Lab Technician (256-705-5544)
Kristi Freeman, Analytical Chemist (256-705-5543)



(Back Row) David Raby, Marietta Lemieux, Mark McMeen, Jim Raby
(Front Row) Angela Couch, Kristi Freeman, Aaron Olson

Microelectronics Lab

By: Casey Cooper, Microelectronics Lab Manager

The past year has been an extraordinary year for the Microelectronics Lab. Continuing the trend from 2006, the lab once again experienced growth in contracts in addition to increased interest in STI's patented packaging technology, Imbedded Component/Die Technology (IC/DT). The largest milestone of the year was set in October with the successful test flight of a Standard Missile-2 with an IC/DT prototype integrated onboard. The IC/DT prototype was designed and manufactured at STI, the latter of which was facilitated by the addition of the Class 1,000 cleanroom last year. The successful test flight completed the technology maturation for the IC/DT packaging technology from design concept to breadboard/bench-level validation to system integration and demonstration in an operational environment. We wish to thank all of you who have been part of this program!

Needless to say, the lab will continue its focus on advanced packaging technologies such as Imbedded Component/Die Technology, flip chip technology, and wire bonding in order to meet the electronics industry's increasing form, fit, and function requirements. To inquire about how IC/DT can provide a volume savings, mass reduction, and/or integrated thermal management for your electronics assembly, please contact the Microelectronics Lab Manager Casey Cooper at ccooper@stielectronicsinc.com. We look forward to working with you in 2008!

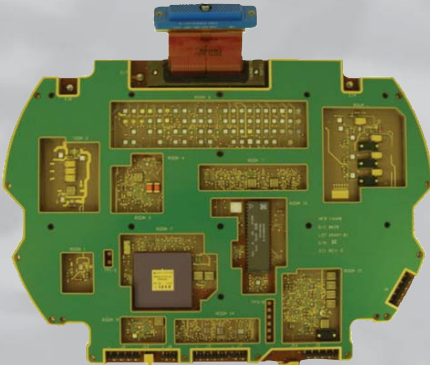


(Back Row) David Robinson, Jonnie Johnson, Mark McMeen
(Front Row) David Raby, Casey Cooper, Jim Raby



To receive future issues of STI's newsletter electronically,
please go to www.stielectronicsinc.com.

Engineering Services: STI Electronics' IC/DT Prototype Completes Successful SM-2 Flight Test



STI's Imbedded Component/Die Technology Prototype

STI Electronics, Inc. (STI) is proud to announce that its Imbedded Component/Die Technology prototype was integrated into a Standard Missile-2 flight test that was successfully conducted at Point Mugu, California on October 10, 2007.

The San Diego based Aegis Destroyer, USS Kidd, using a Standard Missile-2 (SM-2) Block IIIA missile, successfully intercepted a target during its midcourse phase of flight. The SM-2 missile is a member of the Standard family of missiles, one of the most reliable in the Navy's inventory, and is used to provide area defense against enemy aircraft and anti-ship cruise missiles. The Navy's Standard Missile Program Office used the flight test to support a technology demonstration of STI's Imbedded Component/Die Technology prototype, validating the electrical and mechanical performance of this new and innovative electronics-packaging concept.

The Navy's Program Executive Office for Integrated Warfare Systems and STANDARD Missile Program Office (PEO IWS 3A) identified the need for more robust circuit cards for critical missile applications. Current industry trends toward all plastic encapsulated microcircuits (PEMs), lead-free solders, and other factors threatened to significantly reduce the quality of military systems. After reviewing what was available from industry, a test program was initiated in 2005 to prototype a SM-2 circuit card utilizing STI's patented manufacturing technology called Imbedded Component/Die Technology.

In early 2007, STI's IC/DT prototype was analyzed and tested by SM-2 prime contractor Raytheon Missile Systems, which approved the prototype as flight hardware for a future flight test. This included finite element analysis (FEA) design modeling and prototype qualification testing per standard legacy performance requirements and overstress test requirements.

In October 2007, the IC/DT prototype's performance and robustness was demonstrated through the successful SM-2 flight test, thus advancing the IC/DT technology to TRL 8 status.

STI's patented Imbedded Component/Die Technology packaging approach addresses miniaturization, thermal management, performance, reliability, and system capability requirements through innovative design guidelines and materials selection in order to meet form, fit, and function requirements. Elimination of external component packaging not only reduces CCA size, weight, and electrical and thermal parasitics, but it enables the 3D assembly of multiple components facilitating the design integration of key subsystems, i.e. multiple CCAs, into a single high-density module.

Imbedded Component/Die Technology involves the use of unpackaged integrated circuit components that are imbedded within a laminate substrate to an integrated thermally conductive core. The imbedded core adds mechanical stability and provides passive cooling, thus eliminating the need for additional thermal management materials. Flexible electrical interconnects, such as wire bonds, provide a reliable means of connecting circuit components. An electronically insulating coating covers the exposed surfaces, provides rigidity to the wire bonds, and prevents moisture and contamination ingress. In addition, a thermally conductive encapsulating material encases the circuit components providing additional mechanical support, a second environmental barrier, and a thermal sink for the dissipation of heat. This process improves the performance and rigidity of electronics assemblies under extreme conditions such as temperature, vibration and g-force.

For further information on this or other IC/DT design efforts, contact Casey Cooper at (256) 705-5511 or ccooper@stielectronicsinc.com.



STI Electronics: Looking back



Sales & Distribution: 2007 and Kester Enviromark Lead-Free Solder Paste EM919G

By: Sissie Eckstein, Sales Manager



Sissie Eckstein

The Sales and Distribution Division of STI has had its shares of challenges in 2007 but continue to move forward and are looking forward to working with all of our customers in 2008 and beyond. Look for us to expand our sales force next year. We've already taken a step in that direction by hiring Jason Speelman to support our Florida customers. Jason is making his rounds and will be getting around to seeing each of you in the next few weeks. Also, in 2008 we will be releasing the update to our existing catalog. We have added many new lines at customers requests and these have been included in the catalog. If you have ever been involved in a catalog production effort you know how much blood, sweat and tears goes into the process but we believe you will be pleased with the results.



Jason Speelman

As always we appreciate your business and looking forward to working with you in 2008. Best Wishes for a Happy Holiday and a healthy and prosperous New Year!



(Back Row) Brandon Champion, Julia Adamczyk, Kelli Smith
(Front Row) Sissie Eckstein, David Raby



Enviromark Lead-Free Solder Paste EM919G – Continued Innovation



Kester's new EM919G lead-free solder paste contains state-of-the-art advantages for high reliability and low defect assembly. EM919G solidifies Kester's commitment to be the global benchmark in no-clean lead-free solder paste. EM919G is 100% halide and halogen-free, representing a critical innovation in soldering materials chemistry.

Lead-free reflow soldering is more challenging than leaded operations due to the higher processing temperatures. This can adversely affect voiding behavior, wetting properties and residue color and penetrability. Thermal stability in lead-free no-clean solder pastes is therefore critical.

This product offers advantages over the already successful EM907 solder paste such as reduced voiding, lighter flux residue color and easier residue penetration, combined with improved print behavior.

Key attributes of the EM919G Lead-Free No-Clean Solder Paste

- Ultra-low voiding characteristics
- Residue easily penetrated in all SMT applications
- Shiny joints and excellent solderability on all typical component and board finishes
- Light residue color
- Superior print robustness with respect to varying relative humidity and temperature
- Excellent print definition down to 0.4 mm (16 mil) pitch
- Capable of print speeds to 150 mm/sec (6 in/sec) and idle times of up to 60 minutes
- 8+ hour stencil life and stable tack

Reliability information:

- 100% halogen-free and halide-free chemistry
- IPC ROL0 flux classification
- Bellcore GR-78-CORE compliant

Training Materials: 2007 and Lead Free Solder

By: Mel Parrish, Director of Training Materials



Mel Parrish

2007 has been an unusual year to be sure for our industry with the continuing significant transition of ROHS and Lead Free and related issues placed upon our industry. Lead Free is arguably the most significant happening since the advent of

Surface Mount and Acquisition Reform for those of us that were around for those forays.

As the progress toward Lead Free production processes and materials has occurred the availability of previously designed and developed Tin Lead component types has become extremely limited. Component producers, anticipating the need to change, have fully transitioned to ROHS compliant and are not willing to maintain tin lead production runs for obvious economic reasons. The situation continues to complicate production as well as production training issues for products requiring or desiring to not use lead free materials. For Training Materials, the challenge has been to maintain adequate tin lead resources to insure uninterrupted availability for traditional components types. Looking to the future, this situation can only get worse - but STI is up to the challenge.

We do expect nontraditional component attachment technologies and designs to emerge in future/state of the art production as a result of the lead free variables for production reliability. The outcome should help to minimize the limitations while optimizing production windows. This should eventually improve characteristic limitations related to lead free processes.



(Left to Right) David Raby, Sam Hunnicutt, Mel Parrish, Phyllis Parrish, Chuck Callahan, Diana Bradford

Customer purchasing trends for training materials used to conduct training for production operations can often provide us a vision for future production trends since they reflect anticipated production needs/trends. Surprisingly current trends for training materials reflect a slow transition toward lead free. The demand for tin lead training materials still exceed that of lead free. Typically this would suggest future production of tin lead rather than lead free products within much of the production world that accomplishes solder operation training. Should be interesting to watch & see if this trend changes in 2008.

We also continue to experience a significant upturn in training material sales (also a good indicator of production trends) and along with all of you, we here at STI Training Materials look forward to a successful New Year for 2008.

May the holidays be filled with good friends, family and comfort of a blessed season.



Surplus Inventory Sale

STI Electronics, as one of the largest distributors of electronic assembly and solder supplies, occasionally has overstock on some items. We have created a surplus inventory list with prices drastically reduced. The surplus inventory list is available at our website, www.stielectronicsinc.com, and is updated monthly. Please call (256) 705-5545 and ask for Sales or (800) 858-0604. Quantities are limited so don't delay.





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Engineering Services, and Product Distribution.
Visit www.stielectronicsinc.com

Jim's Corner

By: Jim D. Raby, PE, Technical Director



It is exciting times these days, to watch the people go about their work. I try to stay out of their way. It is difficult to do, they move so fast. The work load looks very good for the long term and some of it requires new technology. Some will be IC/DT which is leading edge technology not used by anyone else. At age 73, it is great to see how the industry is changing, and the needed skills. It is sort of difficult here in Huntsville where we have a very low unemployment rate and everyone with the skill set that one needs is gainfully employed already. The only way to hire someone now is right out of school. It would be great to be young again.

I assume that you have all learned about IC/DT and how it was patented by STI and how just last month the Navy fired a missile that contained a board employing the use of this leading technology with total success. That was a brand new high for me. Better than a glass of "Opus One" (well maybe not). You do however,

understand that having that success this late in life was "very big" for me. I wish to thank Mark McMeen, Casey Cooper, David Robinson and Jonnie Johnson for all of their efforts in making that a total success and for seeing my dream function as perfectly as I had dreamed it. The above named people, without exception, carried out my dream and that successful test flight was my reward. Now to watch it take off within the industry, as I know it will, is another reward worth waiting for. It will be the way electronics is manufactured in the future, especially for High Reliability programs.

Now it is time to look forward toward the holiday season. The turkey is all gone and now its time to trim trees and do those things that bring us down to our real purpose in life, honoring our family and remembering both who and Who's we are.

Merry Christmas to each of you, and don't forget to keep Christ in Christmas.

May Our God Richly Bless You and Your Family.

Jim D. Raby
[jraby@stielectronicsinc.com](mailto:jruby@stielectronicsinc.com)

