

SCHIPPERS & Crew, Inc.

Volume 14, Issue 2
May 2004

E L E C T R O N I C S M A N U F A C T U R I N G S E R V I C E S

An Overview of the Lead-Free Movement

Solders composed of a mixture of Tin and Lead have been used on planet earth for thousands of years. The most common alloy in use today is SN63 (63% Tin and 37% Lead). Adding lead to the tin reduces its melting temperature, increases its strength and ductility, and increases its thermal fatigue resistance. The tin/lead alloy has been tested and proved as a workable formula since the ancient Egyptians. The new lead-free alloys have only been tested for about 10 years primarily in a lab environment, not real-world. There currently isn't a consensus on a standard lead-free alloy. Some obvious problems remain unresolved, and yet the industry is being required to move in this direction.

So why is there a lead-free movement away from the known into the unknown? It is primarily the result of EU Legislation (see our website for links to the Directives). Another large factor is market competition among global companies - it is "green" to go lead-free. Beyond this there is no complete logical or scientific explanation. Lead is toxic and needs to be handled appropriately. However, the soldering process itself does not present immediate exposure problems, by-products are easily recycled and there is no real evidence that lead leaches from electronic products disposed of in landfills. (Of course, old electronics should be recycled rather than thrown away!)

Though a large majority of manufacturers who use lead solder are still hoping that this issue will just go away, lead-free appears to be here to stay. We believe that most companies are waiting for the "industry" to lead the way. However, we all ARE the industry and the legislated deadline is July 1, 2006 for products sold in the European Union. (We are hoping the US deadline will never materialize.) So



PCB passing over solder wave.

the real question is, do your products end up being sold in the EU, and if so, what needs to be done to comply? Volumes can and have been written on this subject so far, but unfortunately there are many questions that still need answering. We recommend educating yourself as much as possible - read about the directives, do research, evaluate your company's position, and get all departments of your company, including top management, involved! Then establish a lead-free roadmap to follow. We are currently on the education step, and are working on putting together our roadmap.

Stay tuned for further updates in future newsletters.

Thank you,
Bert Schippers
CEO

PS - see our website (<http://www.schippers.com/leadfree.htm>) for links to information resources; and please fill out our quick survey!

Tech Support Humor

- I walked into the English department's computer lab one day and saw two English teachers staring blankly at a computer screen that contained the message, "Non-system disk error; Remove and press any key." One of them confidently said, "It's got to be a virus — those darn kids are always putting those things on our network."

- A friend of mine once found a boot sector virus in one of his computers. He was getting frustrated because the virus kept reappearing, so he tried to repair it by changing the motherboard. Of course, a virus is in the hard drive...

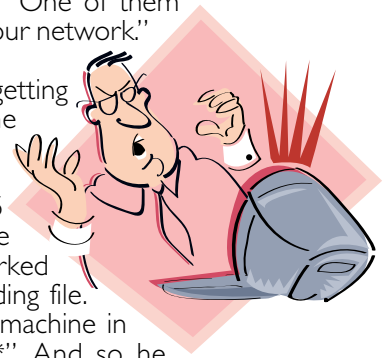
- I had a guy in my office who decided he didn't like his wallpaper. He was a Windows 95 user and he couldn't figure out how every time the machine restarted, the same wallpaper came back. His first step was to blame the person that worked on the opposite shift from him, and the second was to remove the offending file. Being a not so experienced user of four years, he decided to restart the machine in DOS, change to the Windows directory, and type in "del *.*". And so he deleted the entire contents of his hard drive.



- While working in tech support, I received a call from a user who asked me to install some piece of software on her machine. While installing, there was a bit of a wait so I tried to make small talk. I said, "This machine is slow, isn't it?" She replied, "Well, I have a friend who has Quicken on her machine. If I install it on this machine, will it run faster?"

- I work as a lab proctor in a computer lab on campus. One day a gentleman was having trouble editing his document, so I went over to his computer to see what the problem was. He was trying to type his paper in at the DOS prompt.

- I had a call from a user with a problem with his spell checker. I walked him through fixing the problem and later sent a follow up email, asking if the problem was gone. I got this back: Thanks for inquiring, the spell chicker works fine.



Meet Abdul

Perhaps you have already had a call from Abdul, the new Sales & Marketing Assistant here at Schippers & Crew, asking if we could do anything for you such as providing quotes on your assemblies or a tour of our facility.

You may have wondered who this new person is, so we thought we'd introduce him.

Abdul has an Electronics Technician Degree from Lake Washington Technical College. He has worked in the electronics field for about four years, two of them in the



New Sales & Marketing Assistant, Abdul Sharif

Surface Mount area here at Schippers and Crew. When the new opening came up in Sales, his bubbly personality made him the leading candidate for the job. He is now working with Paul on various marketing projects. You can always expect a call from Abdul to be friendly

and cheerful, and now you will have a face to place with the name.

Abdul welcomes your questions concerning your assemblies so please feel free to contact him at: (206) 782-2325 or abdul@schippers.com

● ● ● Bulletin Board Bloopers ● ● ●

These notices actually appeared in church bulletins or were announced in church services:

1. Bertha Belch, a missionary from Africa, will be speaking tonight at Calvary Methodist. Come hear Bertha Belch all the way from Africa.
2. The sermon this morning: "Jesus Walks on the Water." The sermon tonight: "Searching for Jesus."
3. Our youth basketball team is back in action Wednesday at 8 PM in the recreation hall. Come out and watch us kill Christ the King.
4. Miss Charlene Mason sang "I will not pass this way again," giving obvious pleasure to the congregation.
5. Next Thursday there will be tryouts for the choir. They need all the help they can get.
6. The Rector will preach his farewell message after which the choir will sing "Break Forth into Joy."
7. A bean supper will be held on Tuesday evening in the church hall. Music will follow.
8. At the evening service tonight, the sermon topic will be "What is Hell?" Come early and listen to our choir practice.

X-Ray Inspection Services

Schippers & Crew is on a program to evaluate adding X-ray inspection to our services. This process is used to inspect assemblies with BGAs or similar components.

Answer the following survey and...
collect a prize

1. Does your company use an X-ray inspection service?
2. Does your company use BGAs in its products?
3. Is your company likely to use components like BGAs in the future?

Fax your answers to Paul @ 206-782-2363, or fill out the survey online at: www.schippers.com/survey.htm

Bring ALL of Your Assemblies to...

Schippers & Crew, Inc.

CALL For information or quotes on the following services:

- SMT and Thru-hole Assembly
- Turnkey and Consigned Services
- BGA Assembly and Rework
- DFM Assistance
- Cable Assembly
- Gold Finger Repair
- Box Build & Mechanical Assembly
- Test and Test Dev. (HP3070 Platform)

Phone: 206-782-2325 Fax: 206-782-2363
 Email: paul@schippers.com
 See our website for more info: www.schippers.com

**Free pick up and delivery
 in the greater
 Puget Sound area!**



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**Meet
Abdul!
See inside . . .**

How people from India came to live in the Fiji Islands.

The story of the Fijian Indians

by Abdul and Lynne

People from all over India were brought to Fiji in the nineteenth century as indentured workers on the sugar cane plantations. They were told that there was a great island close by, and they only had to travel for a couple of days and they would come back rich. But when they got on the ships they were shanghaied. Arriving in Fiji, thousands of miles from home, in a place where they had no idea where they were, they had to work on the sugar plantations or die. Since Fiji had cannibals at the time, there was probably a period of hard adjustment, perhaps even battles for survival. But slowly the Indians started mixing with the native Fijians and became farmers, businessmen, and fishermen, with jobs evolving

as the country evolved, until now the biggest business is tourism (people come thousands of miles again!) After so many generations of industrious work, the Fijian Indians have become wealthy, living with a rich mixture of heritages. They still haven't forgotten their cultural background as Indians and have carried on the customs and traditions such as food, dress, weddings, and remnants of original languages and religions. But they drive cars like typical Americans, speak British English, and are as friendly as the average Polynesian. And they emigrate all over the world, mostly to Australia or New Zealand, and even to the U.S.!! That's how Seattle got Abdul.