

December 2001



SMTA

Surface Mount Technology Association
Los Angeles / Orange County Chapter



Warmest Holiday Wishes

"The Surface Mount Technology Association membership is a network of professionals who build skills, share practical experiences develop solutions in electronic assembly technologies and related business operations."

LA/OC ANNUAL CHRISTMAS PARTY

Come join us for our Annual Christmas Party. This year we are trying something different. We are taking a cruise of the LA Harbor on a 90 ft. sailing ship US Spirit out of Ports O'Call in San Pedro. Those who would like to arrive early can meet next door at the Ports O'Call Restaurant Bar. We will have Door Prizes for most of the guests and there will music for your listening pleasure or dancing. This is an open sailing ship with a small Salon below decks so dress warmly. The open deck will

be covered if it rains so have no fear. The cruise will be in the harbor so it will be smooth sailing all night.

We will not have a meeting in January due to APEX and we will be planning the year with our new board.

We wish to thank all our vendors for their tremendous support for this year. We hope you will thank them by giving them our patronage. ♦

DATE

- ♦ FRIDAY - DECEMBER 7, 2001

AGENDA

- ♦ 8 PM, Ship Sails for a 2 1/2 Hour Cruise

MEETING FEES

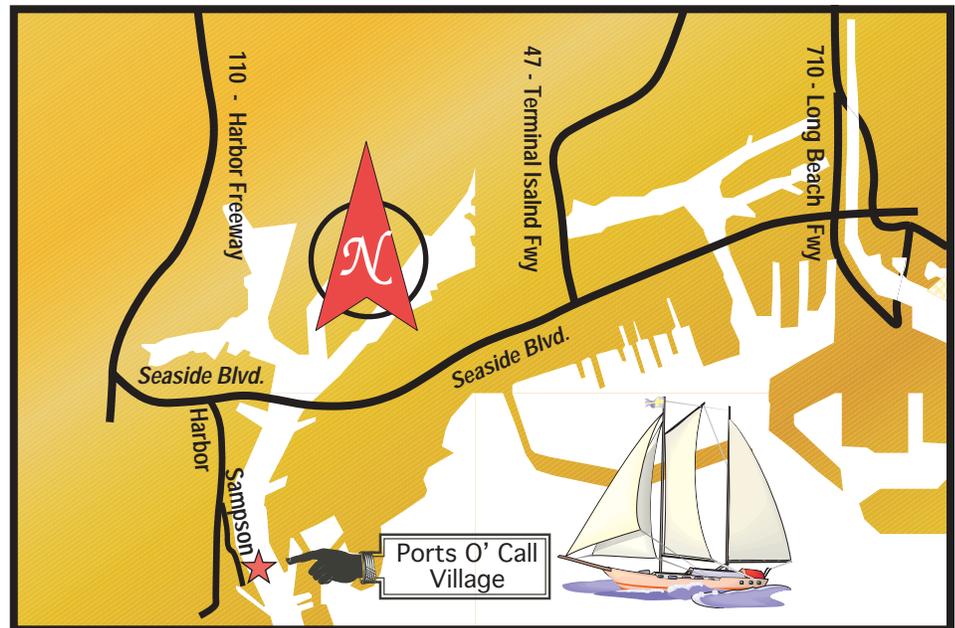
- ♦ \$25, Members
- ♦ \$30, Nonmembers & Guest

MENU

- ♦ Captains' BBQ, Steak Kabobs, Fish Fillets

LOCATION

- ♦ US Spirit 90' Sailing Ship
Berth 77 Ports O'Call
San Pedro, CA



RESERVATIONS

- ♦ Call: Production Technology (714) 895-0016
- ♦ NO SHOWS WILL BE INVOICED. If you can not attend, please cancel your reservation by 12 Noon on Wednesday, prior to the meeting. See you there!

Take the Harbor Fwy 110 South and Exit at Harbor Blvd.

Turn Right onto Harbor Blvd. and drive down 3 signals turn left at Sixth St. Flow to the right following the entry signs to Ports O'Call parking lot. Drive about 1/2 of the way through the parking lot and park at Berth 77. The Spirit Cruises office is located on the waters edge between the Ports O'Call Restaurant and Haagen Dazs Ice Cream.



Message From the President

by Joanne DeBlis

I wanted to take this opportunity to thank you for the experience of serving on your Board of Directors for the past three years. This is a wonderful Chapter to work with, and our tremendous success has been evident in the recognition we've received from National. We were awarded "Chapter of the Year" for both 2001 and 1999, and runner up in 2000. Your support and participation was most recently reflected by the number of members who attended the November meeting (over 60). We have had a terrific vendor base that has helped to underwrite a number of events including sponsoring our upcoming Christmas party. The chapter could not function without them.

I'd also like to thank a Board Member who has dedicated a great deal of time and effort to the organization. Many of you know Ken Moore in his capacity as a principal at Omni Training. He has also served as our Chapter Treasurer and done an excellent job. Ken has a strong sense of commitment to the SMTA, great organizational skills, and a sense of humor that I've particularly enjoyed. Due to additional responsibilities at Omni, Ken is unable to continue in his position next year. I hope you will join me in encouraging Ken to participate on the Board again if the opportunity presents itself.

This has been one our most challenging years. . .as an industry and a nation. I hope the holidays bring you peace and the sense of prosperity that comes from spending time with our families and reflecting on all the gifts we've been given. *God bless you in the coming year.*

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by Arline Ruh

Member Profile on... Arnon Tuval

Arnon Tuval works for Orbotech as the Regional Sales Manager Electronics Assembly Western Region. He has worked for Orbotech for 13 years.

Arnon's degree is in Computer Science from North Eastern University in Boston and he also has an MBA from University of Phoenix.

Arnon is originally from Israel where he worked for Orbotech selling Optical Inspection Equipment. He was brought to Richmond, VA through Orbotech 13 years ago. Arnon then moved to Boston for 2 years and then off to Sunny California where he presently lives with his family when not traveling for the company.

Arnon is married with 3 children. Arnon's Wife is Ora and they have 2 sons and a daughter: Adam, Ben and Guya. For enjoyment he rides his motorcycle. For vacations the family enjoys traveling to all the nature places in the US.

Let's welcome Arnon in to the SMTA, Orange County Chapter!

November 2001 Meeting Summary

By Atul Mehta

LA/OC Chapter SMTA meeting for the month of November was held on the 15th, at Embassy Suites in Anaheim.

The topic was "0201 TECHNOLOGY." Mei Wang from Flextronics Corp conducted the presentation.

With the growth in demand for smaller and lighter products, a need for smaller and lighter components are rapidly increasing. As the real estate on a Printed Circuit Board (PCB) is getting more scarce high density interconnects also becoming the main stream technology.

Passive components in the form of the 0201 package are making inroads into new designs.

Typical area reduction of approximately 80% can be achieved in board real estate with the use of 0201 components as compared to 0402 components. Some of the challenges faced in using 0201 components are –

- Availability from multiple sources
- Lead time
- PCB design
- Solder paste printing
- Placement
- Reflow

Although more and more passive component manufacturers are fabricating 0201 components, the lead-time is still anywhere from 4 to 12 weeks. As the demand increases, manufacturers' capacity will increase resulting in shorter lead times.

Flextronics designed and assembled four different types of test boards, 0.030 inch thick with 6 layers for their design of experiments using 0201 and other SMT components. Boards were populated on both sides.

Both solder mask defined (SMD) and non solder mask defined (NSMD) pads were incorporated each with three different types of pad shapes. Printer parameters were varied to determine optimum process parameters.

Placement of 0201 was carried out using standard chip shooters with special 0201 nozzles. Placement pressure was varied to determine if it affected the solder joint quality. Varying reflow ramp rate, soak time and peak temperature, set reflow process parameters.

Following is the summary of the results obtained during the experiments.

- Solder paste release with electropolished stencil was more uniform compared to that released with laser fab



stencil.

- Regardless of different process parameters, the solder ball defect more widely exists on SMD pads as compared to NSMD pads,
- NSMD has wider process window as regards to the solder ball defects.
- For rectangular pads small size pads have lower solder volume and has lower number of solder ball defects.

Recommended pad size for 0201

- Low mounting pressure and high reflow peak temperature tend to reduce solder ball defects.
- Low mounting pressure reduces tombstone and missing component occurrences.
- Low soak time and low peak temperature will help to reduce off pad/skewing.
- Small gap between pads (less than 0.27mm) will reduce the defects of solder ball, tombstone and missing component.

Conclusions drawn from the design of experiments are:

Solder ball - Solder ball defect was identified as the No. 1 defect. To solve this problem, more experiment on stencil design, solder paste selection/comparison is required.

Printing - Due to the existence of overwhelming number of solder ball, over-print on most of the 0201 pads is not recommended.

Pick and Place Alignment - Pick and place alignment consistency is the second issue observed during data analysis.

Future Works - Component spacing test need to be added into future experiment.

Overall, the presentation provided an excellent insight into the design and assembly aspects of boards utilizing 0201 package. The chapter thanks Mei Wang for a thorough in-depth presentation. ●



SMTA

Surface Mount Technology Association

MEMBERSHIP APPLICATION

APPLICANT INFORMATION

Name (print or type)	City
Job Title	State/Country
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Mail Stop/Dept.	Fax
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Please check your primary job function:

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Number of employees at your location:

- 1-50 51-250 251-1000 1000+

Primary end product manufactured or service performed at this location is:

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 My company is a **USER** of surface mount equipment and materials (includes contract manufacturers and consultants).
 My company is a **SUPPLIER** of surface mount equipment and materials.

I supply materials/equipment/chemistry in these categories:

- Adhesives/Dispensing
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 Components/Substrates
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 Soldering Equipment/Solders/Fluxes
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My company provides these services:

- Component Packaging
 Consulting
 Contract Assembly
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 OEM
 PCB Fabrication
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 Test Services
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MISSION OF THE SMTA

The SMTA membership is a network of professionals who build skills, share practical experience and develop solutions in electronic assembly technologies and related business operations.

I want to get involved. My areas of interest are:

- Awards Committee
 Chapter Officer
 Editorial Committee
 International Chapter Development Committee
 Marketing Committee
 Membership Committee
 National Officer/Director
 Speaker
 Student Membership Committee
 Technical Committee
 Test Committee

Where did you hear about the SMTA?

- Chapter Meeting
 Circuits Assembly magazine
 Colleague
 Electronic Packaging & Production
 Trade Shows
 SMT magazine
 SMTA Bookstore
 SMTA International
 Vendor Day sponsored by SMTA
 Web site
 Other: _____

Please check the local chapter you wish to be associated with. You will automatically receive their meeting notices and be a voting member of that chapter.

- AL (Huntsville)
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 Participating, \$35 (employees at sites which already have a corporate membership)
 Individual, \$60
 Associate/Student, \$5

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Payment type:

- Check enclosed (made payable in US dollars to SMTA)
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 Card # _____

Exp. Date _____

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Multi-year membership payments accepted:

- 1 2 3 years

Return application to:



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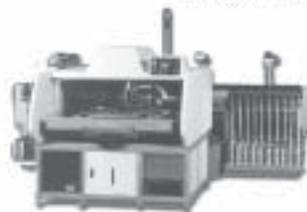
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It greatly helps to lower our distribution costs!

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1/2 Year (5 Issues)	225.00	400.00	750.00
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SUBMISSION GUIDELINES

Preferred Format Aldus PageMaker 6.5

(Remember to include fonts)

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Graphic Formats EPS, TIFF preferred, JPEG, GIF, BMP or Camera-Ready Artwork.

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Ads should be submitted at least one week prior to the end of the month preceding the first month of desired publication.

Vendor Tables

Display your products and literature at a Chapter Meeting. Price \$ 100.00, with a bonus of a free 1/4 page ad for one month.

Contact: RIKI BROWN

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Chapter Christmas Party

December 7, 2001

US Spirit 90' Sailing Ship

Berth 77 Ports O'Call

San Pedro, CA

Ship Sails at 8:00 PM