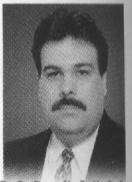


# From The Lab



BY BOB NEVES

## They're Taking my 'Woobie' (MIL-S-13949) Away

**W**hen I was a young boy I had a "security blanket" or, as I called it, my "woobie." Similar security options have been called "bankee," "teddy," or "dolly." I'm sure most of us have had an experience with a small child who has depended upon one of a number of security and/or comfort-giving options like this. When physical manifestations of security are not enough, magical entities like the Tooth Fairy, Fairy Godparents (politically correct), the Easter Bunny, and Santa Claus, take their place.

Even when I really didn't believe in the tooth fairy any more, I still faked it in the hope of getting a buck under my pillow. Believing that Santa could actually fit through our chimney always seemed to buy me a couple of extra gifts under the tree. Eventually my parents caught on, and the dollars and gifts disappeared. The unfortunate part of having a woobie is that some day, when the authority figures decide its time for you to grow up, it gets taken away. I remember the day my woobie finally "disappeared" never to return. I experienced several emotions in a generally accepted progression. First there was sadness, then fear of what I would do without it, then anger at the fact it got "taken" away, and finally adjustment to my "new life" without the woobie.

Over the years in our industry we have had a base-materials security blanket called MIL-S-13949. During those years,

we became comfortable with the fact that someone somewhere was watching over the base-material suppliers. That group of Santa Clauses or Tooth Fairies was based in Ohio, and they continued the tradition of keeping "the list," checking it twice, and finding out which base-material manufacturers were naughty or nice. Well, with peace breaking out everywhere, global warming issues facing us, and the snow pack beginning to melt, it appears that our belief in the need for Santa Claus and his like is waning.

People have become very comfortable for a variety of reasons with the QPL program to MIL-S-13949 (their woobie), and will tend to go through the progression of strong emotions when they finally realize it has been taken away. To survive this emotional period it will be important to have developed a plan of action. . . a kind of "bait and switch" which may soft-

en the emotional curve both customers and suppliers will face.

There has been a lot of history and political wrangling that has gone into the slow, painful removal of MIL-S-13949 from our lives. For those of you who have not heard, MIL-S-13949 will be canceled on November 15, 1998. As of the date I'm writing this column (45 days ago) MIL-S-13949 is scheduled to be canceled without replacement. I say that with some trepidation, as this may change before the cancellation date (you never know with the government). Along with it will go the Qualified Products List (QPL-13949 a.k.a., Santa's List) which many companies use for buying PWB materials. When this cancellation happens, it will be as though MIL-S-13949 never existed. I remember the scene from *The Ten Commandments* where the Pharaoh asks for the name of "Moses" to be stricken from every building, tablet, obelisk-you get the picture. This document cancellation is akin to the government saying to us, "May the name of MIL-S-13949 be stricken from the contracts, and never be spoken or heard of again" (or something like that). I like the Pharaoh analogy, but I hope it stops before the plagues hit.

If MIL-S-13949 is to be stricken from our memory without replacement or recommendation, there are a number of potential issues that will be raised, and they must be addressed:



**1** What are the differences between MIL-S-13949 and IPC-4101?

**2** What will the material suppliers certify their material to?

**3** How will this certification program be monitored and by whom?

**A** How will a manufacturer of PWBs handle the situation where his customer requires that he use material certified to MIL-S-13949?

The IPC-4101 has many similarities to MIL-S-13949 as it was developed to be

the next revision of MIL-S-13949. The specification sheets and material properties are almost identical to MIL-S-13949 with the exception that UL flammability testing results are used instead of the obscure "MIL" requirements. IPC-4101 does have some significant differences with MIL-S-13949:

Both prepreg and laminate are on the same specification sheet

Specification sheets are organized by "families" with slots open for new materials which fit the same family designation

**3** All English measurements are gone and the document is totally metric (no mils, feet, yards, inches, etc.).

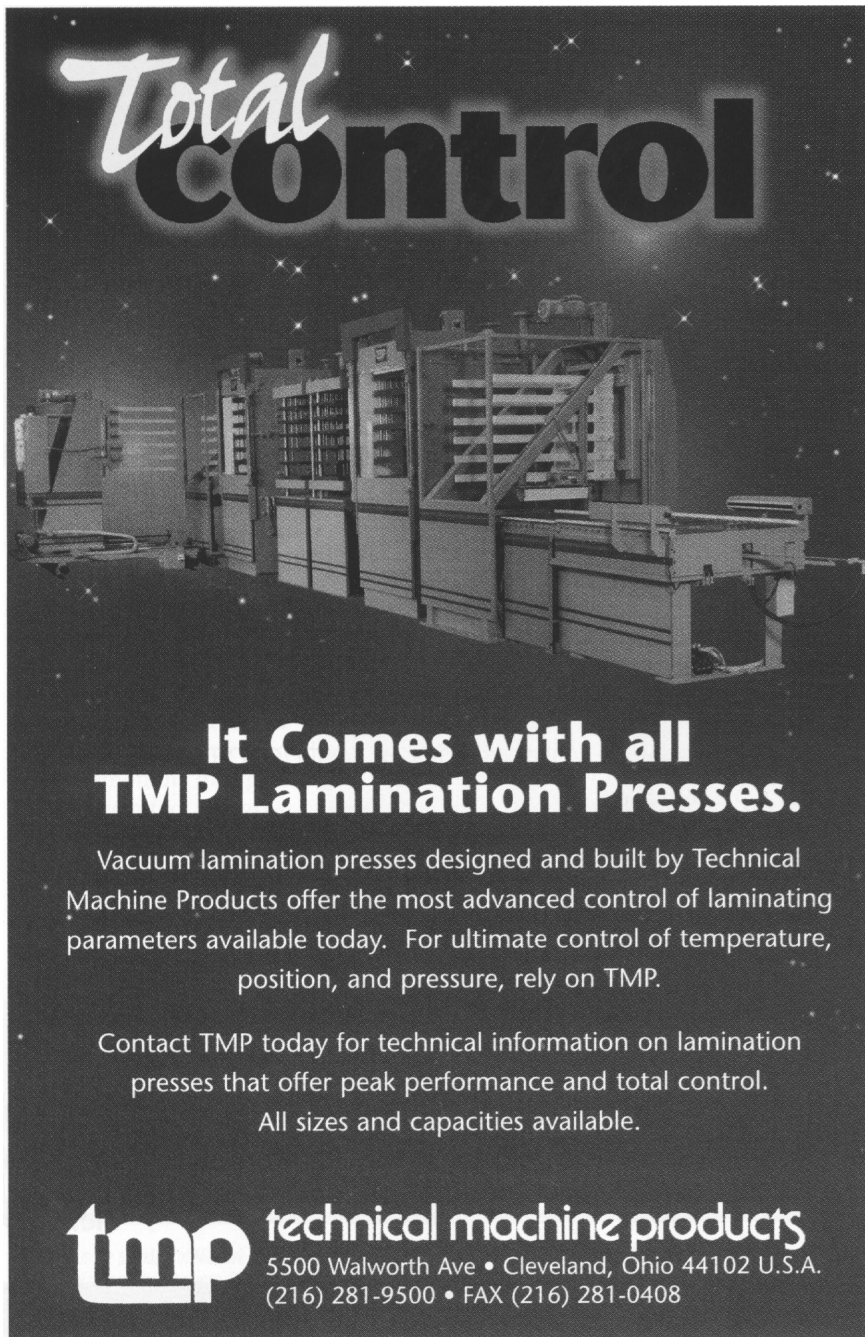
For a detailed listing of other less significant differences, please visit our website ([www.TheTestLab.com](http://www.TheTestLab.com)).

I believe that there will come a date (near the end of the year) when the laminate manufacturers will not certify their product to MIL-S-13949 anymore. It appears from my discussions with the laminators that the majority will be adopting the IPC-4101, which was written to replace MILS-13949 (why it officially hasn't yet is another long, political story best saved for a Cecil B. DeMille movie). IPC-4101 is the latest document the IPC has published for rigid base materials and combines/replaces the requirements of IPC-L-108, IPC-L-109, IPC-L-112, IPC-L-115, and IPC-AM-361.

Someone once said "Nature abhors a vacuum," and I think that saying is very applicable in this instance. It is my understanding that the British Standards Institute (BSI) will be offering to become a substitute "hall monitor" for IPC-4101, thereby replacing the function of our friends in Ohio. Representatives from BSI have stated that they will be offering a service that will allow them to come in and audit the material suppliers for compliance to IPC-4101. Once compliance is verified, they would issue a certificate and an "authorized" mark (similar to the ISO 9000 mark) indicating compliance with the document. For those material suppliers who choose not to use a certifying body, the customer will be responsible for monitoring compliance to whatever program the base-material supplier is using.

I expect that the conversion process from QPL program to a customer-monitored program will be quite chaotic, and that emotions on the issue will run high for a while. The IPC is putting together a "road show" across the country in September to publicize the IPC-4101 and to help industry make the transition to this commercial standard (striking MIL-S-13949 from the tablets). Please see the IPC's website ([www.ipc.org](http://www.ipc.org)) for more details.

Our base-material woobie is being taken away and it is time for our industry to "grow up." It is now your responsibility to monitor your material supplier and to come up with a plan to get MIL-S-13949 out of your drawings and specifications. Don't delay because none of the stomping, crying, yelling, or threatening will bring this woobie back.



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