CPSA § (b)(1) Cleared
1/14/02
No Mfrs/PrvtLblrs or
Products Identified
Excepted by
Firms Notified,
Comments Processed.

U.S. Consumer Product Safety Commission
LOG OF MEETING

SUBJECT: Meeting of the table saw guarding working group for the standard for stationary and fixed electric tools, UL 987.

DATE OF MEETING: November 29, 2001

LOG ENTRY SOURCE: Caroleene Paul, Engineering Sciences - C.P.

DATE OF LOG ENTRY: December 31, 2001

LOCATION: UL Research Triangle Park Office

CPSC ATTENDEE(S): Caroleene Paul

NON-CPSC ATTENDEE(S): See attached attendance list.

SUMMARY OF MEETING: The following subjects were discussed -- table saw instruction and education video, table saw injury statistics, European and UL table saw standard requirements, table saw blade guards and push sticks, and the latest table saw safety technology introduced by SawStop, Inc.

UL meeting log attached.

1/15/2002
Public notice
not filed
EPC

Subject 987

12 Laboratory Drive
Research Triangle Park, NC 27709
December 6, 2001

TO: **Working Group of UL for the Standard for Stationary and Fixed Electric Tools, UL 987**

SUBJECT: **Report of the Meeting of the Table Saw Guarding Working Group**

The following topic was discussed at the meeting:

Table Saw Guarding Requirements

A meeting of the Table Saw Guarding Working Group of UL for the Standard for Stationary and Fixed Electric Tools, UL 987 was held on November 29, 2001 at Research Triangle Park, NC. The purpose of the meeting was to discuss current issues regarding table saw guarding requirements.

Attached as Appendix A is the report on discussions from the meeting.

Attached as Appendix B are the members of the table saw guarding working group.

UNDERWRITERS LABORATORIES INC.

NEIL DALMAS
Secretary for STP 745
Standards Department
Underwriters Laboratories Inc.
Phone: (919) 549-1879
Fax: (919) 547-6192
E-mail: Neil.S.Dalmas@us.ul.com
http://ulstandardsinfonet.ul.com

SR: JAH

Saw_Guarding_Meeting_Report.doc

REVIEWED BY:

WYATT BRANNAN
Chair for STP 745
Conformity Assessment Services 3013HRTP
Underwriters Laboratories Inc.
Phone: (919) 549-1738
Email: George.W.Brannan@us.ul.com

APPENDIX A

Report of the Meeting of the Table Saw Guarding Working Group for UL 987, the Standard for Stationary and Fixed Electric Tools

The following report is not intended to be a verbatim transcript of the discussions at the meeting, but is intended to record the significant issues of those discussions.

Introduction

The meeting was called to order at 9:00 am on November 29, 2001. Wyatt Brannan, Chair of the Working Group, introduced himself to the group. Wyatt has taken over the position formerly held by Gary Schrempp. Wyatt shared his history with UL, including his previous work with the power tool category and his last 5 years working with Electromagnetic Compatibility (EMC) and Network Equipment-Building System (NEBS) certification programs. The Working Group participants introduced themselves to the rest of the group. Wyatt presented a few housekeeping issues, such as the location of bathrooms, times of breaks and lunch, and the escorting policy at UL.

Purpose of the Working Group

The Table Saw Guarding Working Group is to review current safety requirements and practices as a result of U.S. Consumer Product Safety Commission's (CPSC) request to possibly minimize the number of injuries involved with table saws. Any suggestions or information pertaining to table saw guarding that the Working Group decides to be beneficial for UL 987, the Standard for Stationary and Fixed Electric Tools, will be presented to the Tools Standards Technical Panel (STP) for further consideration and decision-making.

PTI Video

The group reviewed a video featuring the combined effort of the Power Tool Institute (PTI), U.S. CPSC, and Underwriters Laboratories Inc. Afterwards, the group briefly commented on some concerns, such as the operator standing directly behind the workpiece during cuts and the physics of kickback. According to Bob Stoll, PTI representative, the video is ready to be released. UL has approved the video, but CPSC has yet to approve it. PTI noted that the video needs some minor adjustments, such as adding arrows to aid terminology usage.

How will the video be distributed? Members of the tool industry may decide to package the video with new table saws, and the video will be available through the table saw manufacturer. The tool industry is also considering distribution to schools and consumer marketplaces. Other suggestions are welcome. In preparation for the next STP meeting, the group wants to be able to view the video via the PTI website. PTI will research the possibility. However, before the video can be released or publicly viewed, it needs to be approved by the CPSC. Caroleene Paul, U.S. CPSC representative, will assist in the CPSC approval process for the video. Mr. Stoll will present the video to the STP at a future meeting yet to be determined.

Action:

Caroleene Paul – Seek to acquire CPSC Approval for the PTI Video
Bob Stoll – Present PTI Video to the Tools STP at the next meeting

Injury Report

UL distributed a handout regarding injuries (numbers, types, location) from 1993 to 1998. The data is extracted from National Electronic Injury Surveillance System (NEISS) reports. Most accidents occur when the guard has been removed and the hand contacts the blade during normal operation. Usually, distractions to the operator initiate the accident. Initially, it was believed that a decline in injuries had occurred prior to '98, but CPSC reports indicate that more injuries were reported in recent years. It was noted that some saws in the NEISS reports are not specified. Of these unspecified saws, it is assumed that a majority of the saws are table saws. The assumption is that there are more reported table saw accidents in proportion to that of other saws. The group agreed that more real data is needed before these assumptions are determined to be true.

NEISS reports are available at no cost, and 2000 data is available. Contact information:

National Injury Information Clearinghouse
U.S. Consumer Product Safety Commission
4330 East West Highway, Room 504
Washington, D.C. 20207
Telephone: (301) 504-0424

The tool industry believes that the number of table saw accidents are declining, but still want more reduction of injuries. It was noted that CPSC has changed their data collecting over the years, possibly skewing the data. Some injuries aren't reported because they don't involve contact with the blade (kickback, for example). Wyatt stated that more data and analysis is needed before determining the number and types of injuries. Ms. Paul is to seek assistance from CPSC's statistical department for further research on table saw injuries. Ms. Paul indicated that the CPSC can normalize its reporting methods to aid the data collection.

It is believed that since the 1980's, tables saws have doubled – possibly tripled – in sales due to the introduction of the bench type version. A presentation of CPSC injury statistics from the 80's to the early 90's compared to the volume of table saws sales indicated slight changes in the number of injuries. During this period, CPSC changed their data collecting and reporting methods. Ms. Paul pointed out that you could not readily compare one year to the next.

It was noted that it would also be beneficial to know the proportion of table saws to the rest of the population. Mr. Stoll is to collect market data on table saws – number of table saws in the market, including types of table saws and lifespan of the tool). If possible, it may be of interest to get a cost of injuries associated with the injuries. It was mentioned that the PTI video and other education means has immediate impact, but production design changes are not as immediate.

Statistics don't indicate how the injuries are caused. The CPSC can possibly follow-up with the hospital system to interview individuals. Industry will further investigate injuries/accidents from lawsuits and hospitals. Data can also be obtained from media publications and word of mouth. On occasion, CPSC gets letters from unhappy product users, especially through the Internet. This information is not normally reported, but it can be researched to benefit the data collection. For unofficial statistics, www.woodworking.org receives on-line accident reports from tool users, where table saws have considerably more accidents reported than other tools.

The tool industry noted that CPSC's investigating interviews should use industry-approved questions. Peter Domeny, S-B Power Tools Co. representative, and Ms. Paul will jointly work on a questionnaire. Kelly Mehler, self-employed representative, volunteered to distribute a more condensed questionnaire at his classes/presentations to gather more information. Stephen Gass, SawStop representative, volunteered to put the subject questionnaire on his SawStop website.

Action:

Caroleene Paul – Seek assistance from statistical department to further research statistics and probabilities regarding table saw injuries.
Caroleene Paul – Use the hospital system to obtain follow-up interviews with injured individuals
Bob Stoll – Collect market data on table saws, including types of saws and lifespan
Caroleene Paul & Peter Domeny – Jointly develop a follow-up questionnaire
Kelly Mehler, Bob Stoll & Peter Domeny – Develop a condensed questionnaire.

Review Current and European Guarding Requirements

The group briefly discussed differences between European requirements and US requirements. There are currently no UL harmonization efforts to combine the European and US requirements. The group agreed to research other standards and their requirements, and identify discrepancies and deficiencies. It was noted that European guarding requirements cover the tooth of the blade, not the entire blade, allowing a corridor for fingers/hands to reach the blade. Table saw users in the U.S. take the guard off the saws, but European users raise the guard – causing the same concerns. Members of the tool industry present stated that they would consider the use of riving knives in the U.S. for increased guarding protection. This device would be used in conjunction with the current guarding system. This matter too will require further research. It is premature to compare requirements

without effective data, which the group plans to collect. Information pertaining to accidents is the most valuable information in guiding standard requirements.

Comparable Standards:

UL 987
CAN/CSA C22.2 No. 71.2 – M89
IEC 61029-2-1
EN 1870-1-1999
ANSI 01.1
29 CFR Chapter XVII (July 1, 1999 Edition) 1910.212, 1910.213

For standards purchasing information, please contact the following:

comm-2000
1414 Brook Drive
Downers Grove, IL 60515
1-888-853-3503
FAX: 1-888-853-3512
www.comm-2000.com

Action:

Michael Belcher – Develop comparison table based on standards listed. Issues pertaining to guarding are only to be addressed.

Improve Guarding

Why is the guard coming off, how to keep the guard on? A table saw, especially the home version, can create a variety of different cuts. Some of these cuts require the guard to be removed or adjusted. The group briefly discussed differences between industrial-type and home table saws. UL 987 currently doesn't differentiate between the two types. The group decided not to try to differentiate between a home and industrial saw by restricting consumer type saws to certain cutting operations.

The group suggested to revise the standard to add a speed requirement when replacing the guard to the saw. A cycling requirement when replacing the guard, including the entire the system with splitter, should also be required. These requirements are suggested to encourage the ease of adjustment and replacement of the guarding system. This adjustment/replacement of the guards should not require the use of tools, and the adjustment/replacement must be repeatable and performed correctly. UL 745-2-3, the Standard for Particular Requirements for Grinders, Polishers, and Disk-Type Sanders, has requirements that allow the guard to be detached without the use of tools.

The group agreed that riving knives should not be removable without the use of tools. Definitions for riving knives and guarding systems need to be addressed in the standard. Additionally, it needs to be stated that riving knives can only be removed by the use of tools and a guarding system does not. The group stated that a combination of a splitter and riving knife with the guarding system should not yet be considered. It was stated that if a riving knife is introduced in the standard, then it must function correctly at all times.

Action:

Stan Rodrigues & Peter Domeny – Research the removability of the guards without the use of tools, similar to how angle grinders were handled. Develop suggestions to propose to the STP including the use of riving knives, and the ease of guard adjustment/replacement. Address the use kickback fingers/paws.

Pushstick

The use of pushsticks and pushblocks can reduce the potential of injury. These items are vaguely addressed in the current UL standard. The group agreed that user education can sufficiently address pushstick. The manufacturer's instruction manual specify the instructions on making pushsticks and pushblocks. It was the opinion of the group that on-product and instruction manual warnings can assist in reducing accidents by suggesting the use of

pushsticks and pushblocks. The standard may need to be revised to more adequately address the use of pushsticks and pushblocks.

Action:

Ted Gogoll – Research current requirements and practices regarding pushsticks and pushblocks, and suggest a possible update to the standard.

After-Market Guards

The group discussed the validity of addressing after-market guards for table saws and why there is a market for such devices. It was noted that these guards are more applicable to bigger, industrial table saws. They may compromise the safety of the table saws if fixed to smaller table saws. It was noted that the after-market guards are more flexible in that they can be used on more cuts compared to the guards that are included with the saw. Members of the group stated that these guards don't increase safety of the guarding systems, but serve as an added convenience to the user. Also, most after-market guards don't comply with current U.S. requirements. The group decided not to address this issue any further.

User Education

The group agreed that the PTI video is user education tool that can be implemented immediately. PTI created their own video because other videos on table saws were missing some important points. PTI will present the video to the STP once it has been endorsed by CPSC and editorial changes have been fully completed.
It was suggested that coupons can be included in specific tools to order a specific educational video or other industry-approved media. Education can improve the use of the table saw guarding system similar to the seatbelt campaign in the '80's. It was noted that CPSC has been satisfied with the work done so far with the video, but they would like to see more active requirements in the standard to address table saw injuries.

Markings/Manuals

Warning markings on the product and in the instruction manual should also be compared. Warning markings should follow the design the UL 745 series of standards, where the markings are stated with a command first, followed by and explanation, then a consequence of the misuse. It was noted that it is important to prioritize the on-product markings and visuals.
The group suggested that standardized warnings and markings should be included in the standard, and let the STP create a working group to develop a proposal.

Action:

Bob Stoll – Develop wording to present issue of standardized markings and manual requirements to the STP

New Technology – SawStop

Dr. Gass presented a brief description of the product. The product has not yet been evaluated by UL. A handout of CPSC's non-comprehensive evaluation was presented to the group. Dr. Gass emphasized that his product is not an alternative to the guards (analogous to the airbag and seatbelt). Injuries due to blade contact would still occur, but the magnitude of the injury that require hospital visits would decrease. Majority of the group is concerned about the false sense of security the SawStop may promote to its users. The group agrees that the concept of the product has merit, but it needs more research and development. Members of industry noted that some preliminary tests have been performed and the data doesn't support a table saw redesign at this time without modifications to the device. It was suggested that the group generate a list of concerns and benefits of SawStop, but the group was reluctant to pursue this matter without first consulting perspective legal entities. A member of industry noted exposure of their test results could result in additional patents and licensing by SawStop.

The group discussed the various facets of adding requirements for a device like SawStop to the standard. Positive and negative examples of past devices that have quickly been added to UL requirements were discussed. It was mentioned that GFCI devices, though patented, were added to UL standards. UL briefly discussed its policy on patented devices. Generally, a patented device will not be included in a standard, with few exceptions.

Because of economic, technical, and legal concerns, the discussion of SawStop was concluded without resolution. It was suggested that a joint venture between the tool industry as a whole and SawStop take place in the future. CPSC stated that they are not concerned with economics, they just want to provide this new technology to the public. The Working Group should bring the idea and concept of SawStop to the Tools STP at the next meeting. In the meantime, UL, CPSC, and the tool industry will need to contact their legal departments to discuss how to handle this discussion and implementation of SawStop.

Action:

Wyatt Brannan – Research history of adding patented GFCI and emersion detection devices to requirements at UL.
Caroleene Paul – Approach CPSC General Counsel about anti-trust laws regarding new technology with patent pending.
Working Group – Approach legal departments regarding new technology with patent pending.

Timeline/Next meeting

The next meeting of the Table Saw Working Group is scheduled for Wednesday, February 6, 2002. The meeting is tentatively located at UL's Research Triangle Park facility, but no reservations have been confirmed.

A Tools STP Meeting is scheduled for mid to late April 2002. It was noted that a PTI meeting will take place in early April 2002.

Adjournment

The meeting was adjourned at 3:15 pm on November 29, 2001.

APPENDIX B

Members of the Table Saw Guarding Working Group Members for the Standard for Stationary and Fixed Electric Tools, UL 987

Name	Representing	Address	Phone	Email
Michael Belcher	UL	12 Laboratory Drive RTP, NC 27709	(919) 549-1879	Michael.E.Belcher@us.ul.com
Robert Carson	Self	112 Weir Dr Pittsburgh, PA 15215	(412) 782-0829	kcarson572@home.com
Peter Domeny	S-B Power Tool Co.	4300 W. Peterson Ave. Chicago, IL 60646		Peter_Domeny@sbpt.com
Stephen Gass	SawStop	22409 S.W. Newland Rd. Wilsonville, OR 97070	(503) 638-6201	steve@sawstop.com
Ted Gogoll	Black & Decker	701 E. Joppa Rd. Towson, MD 21286	(410) 716-3151	ted.gogoll@bdk.com
Ray Mayginnes	Emerson Tool Co.	8100 W. Florissant – Bldg. T P.O. Box 36902 St. Louis, MO 63136	(314) 553-5060	
Kelly Mehler	Self	325 Chestnut St. Berea, KY 40403	(859) 986-5540	kelly@kellymehler.com
Caroleene Paul	CPSC	4330 East West Hwy Bethesda, MD 20814	(301) 504- 0494, x1292	cpaul@cpsc.gov
Dave Peot	Ryobi Power Tools	P.O. Box 35 Pickens, SC 29671		
Stan Rodrigues	Makita USA Inc.	41850 Christy St. Fremont, CA 94538	(510) 657-9881	srodrigues@makitausa.com
Bob Stoll	PTI	1300 Sumner Ave Cleveland, OH 44115	(216) 241-7333	rstoll@taol.com
Wyatt Brannan	UL – STP Chair	12 Laboratory Drive RTP, NC 27709	(919) 549-1738	George.W.Brannan@us.ul.com
Neil Dalmas	UL – STP Secretary	12 Laboratory Drive RTP, NC 27709	(919) 549-1879	Neil.S.Dalmas@us.ul.com