

## APPENDIX B\*

### EXTRACTS FROM BUREAU OF LABOR STATISTICS (BLS) WORK INJURY REPORTS FOR DISCERNING REAL/POSSIBLE GAPS IN JOB SAFETY/HEALTH TRAINING

Data Base-Sample Surveyed (Period of survey)	Limitations in Extent/Nature of Training					Follow-up Actions/Needs
	Form/Source of Trng.	Training Content	Workforce Coverage	Date of Last Trng.	Age/Job Experience	
1400 respondents to survey of 2000 workers with reportable injuries from ladder mishaps. (Winter, 1978)	73% not provided written instructions on safe use of ladders. 78% trained on-the-job.	66% lacked training in how to inspect ladders.	59% lacked training on use of ladders.	Of those noting training, 50% indicated it took place over 1 year ago.	Most injuries in 25- 34-year old group (25%).	
803 respondents to survey of 1230 workers with reportable injuries from scaffold mishaps. (Summer,) 1978	On-the-job training noted by 62%–71% in learning different safety requirements; over 50% by just watching others	Safety requirements covered for scaffold assembly, planking, inspection, weight limits, guard rails; no more than 71% noted training in any topic.	26%–35% of respondents indicated no training in any of the topics noted in the content column.	71% indicated training received more than 1 year ago; 71% from other than the current employer.	Highest % of injured in 25–34 year old group (24%); next was 20–24 year olds group (18%).	
1364 respondents to survey of 2300 workers with injuries from welding/cutting operations (July-November, 1978)	Both on-the-job and classroom training noted, but not more than 37% received either form of such training.	81% believed subject coverage adequate but coverage of different topics ranged from 40% to 83%.	30% indicated they learned welding/cutting safety on their own through job experience. 11% never had any safety training.	69% of those receiving training noted the date of more than 1 year ago.	26% had less than 1 year of work experience; 16% less than 6 months. 25–34 year old group had greatest % of injuries (32%).	
1746 respondents to survey of 2300 workers with reportable injuries from power saw use. (September–November, 1978)	On-the-job and classroom instruction were main forms of training, but each noted for no more than 39% of the worker respondents.	For those receiving training, coverage of various topics drew response rates varying from 32% to 59%.	39% learned power-saw safety through their own job experience. 17% never had any safety training.		44% working with saw less than 1 year; 19% less than 1 month.  20–24 year old group and 25–34 year old group tied for highest % of injuries (25%).	

\*The shaded entries in the tables are meant to suggest major training deficits for sizeable percentages of the afflicted workers. See Pages 35–37 of the main text for a discussion of these findings.

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1033 respondents to survey of 1881 workers with reportable head injuries at work (July-September, 1979)	Information on "hard hat" protection mainly from supervisor or safety officer (81%), but co-worker (19%) and printed material (25%) also noted.	Instruction emphasized when and where to use (61%); other topics such as how to adjust, maintain, and types available drew less than a 35% response.	32% received no information or instruction on "hard hats."		20-24 year old group had highest % of head injuries (32%).	In head injury cases, 41% of the respondents did not know of any action employers took to prevent recurrence. Where noted, accident investigation and issuance of warnings were main (33%) follow-up actions. Training noted at 1%.
1251 respondents to survey of 2005 workers with reportable foot injuries at work (July-August, 1979)	Given information on safety shoes from supervisor or safety officer (92%).	Information stresses where/when to wear (41%); coverage of features available, maintenance, and advantages ranged from 6% to 17%.			Most foot injuries in 25-34 year old group (26%) followed by 20-24 year old group (23%).	Fewer than 25% wearing safety shoes at time of accident though 72% aware of company policy on wearing shoes in specific areas and jobs. 21% indicated employer took no follow-up actions after injury; 28% did not know of any.
1052 respondents to survey of 2118 workers with reportable eye injuries at work (July-August, 1979)	Main instruction on eye protection from supervisor or safety officer (91%); co-workers (14%) and classroom session (14%) also noted.	Subjects of where and when to wear drew a 72% response; followed by type to wear (39%). Care and limitations had a 16% response.	20% of respondents had no instruction in use of protective eye-wear.		25-34 yr group had highest % of eye injuries (32%). Next was 20-24 year old group (25%).	Though over 70% of workers indicated company policy on wearing eye protection, more than 20% noted enforcement came after injury. Common response to nonuse was impractical or not required.

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774 respondents to survey of 1323 workers with reportable facial injuries (struck by object/contact with chemicals) received at work (July–November, 1979)	Instructions on face protection came from supervisor or safety officer (79%); classroom instruction noted at 33% and co-worker at 22%.	Topics of when and where (39%) and type to wear (23%) drew most response. Fitting (14%), care (16%), and limitations (17%) also noted.	Nearly 60% of respondents indicated no instruction in use of face shields or welding helmet.		25–34 year old group had highest % of facial injury (32%); the 20–24 year old group was next (26%).	Company policy on required face protection noted by 50% of respondents. When asked why no face protection worn at time of mishap, 56% indicated impractical.
833 respondents to survey of 1285 workers with reportable injuries from servicing jobs (August–November, 1980)	What training was noted was on-the-job (32%).	Responses to training in various facets of lock-out procedures ranged from 87% (when to lockout) to 9% (clearing area).	61% indicated no training in lockout procedures.	32% indicated training in lockout occurred over 1 year before injury; 45% upon hiring. 8% had instruction after the accident.	38% had job duties for a year or less; 22% less than 1 month.	74% did not know of any company policy on lockout requirements.
906 respondents to survey of 1900 workers with reportable back injuries while engaged in lifting tasks (November–December, 1980)	48% noted information on lifting gained from posters; 35% indicated on-the-job training. Response to lecture, demonstration, and film were 21%–32%. Supervisor or safety officer was source of information for 81%; co-worker for 16%.	44% noted information received on how to lift to avoid injury. Other means for reducing risk (use of hoists/carts, rest breaks) showed no more than 13% response.	51% of respondents indicated no information given on proper lifting or moving procedures.	34% indicated training offered within past 6 months of accident occurrence; 55% within the past year.	25–34 year old group showed highest % of injuries (33%); 20–24 year old group was next (21%).	50% of respondents believed training insufficient to prevent injury. 40% of workers indicated that employer took no action and 42% knew of no action to prevent recurrence. Training on how to lift was noted by 6%. Equipment, job redesign alternatives drew less than a 5% response.

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Two surveys reported. (Survey I) involved 944 respondents from sample of 1865 workers with reportable hand injuries for the period (January–April, 1981; (Survey II) involved 861 cases of hand/arm/finger amputations from a sample of 1528 workers for the period December 1980–May 1981.	<b>Survey I:</b> 67% indicated information on hand protection given by supervisor; 31% by co-worker, 21% by safety officer.	<b>Survey I:</b> Topics were when and where to use gloves, specific type to wear, and merits of wearing, but no response greater than 23%; 27% of workers did not know or believe information sufficient to choose proper hand protection.	<b>Survey I:</b> 59% of respondents indicated no information received on use of safety gloves or other arm/hand protection. 11% indicated instruction was insufficient.  <b>Survey II:</b> 59% indicated no safety training on task where amputation occurred.	<b>Survey II:</b> 27% of workers with less than 1 year of experience had any safety training; 51% with more than 1 year experience lacked for safety training.	<b>Survey I:</b> 25–34 year old group had highest % of injury (30%); 20–24 year old group next at 21%. <b>Survey II:</b> 25–34 year old group had highest % of injuries (26%); 10% of those injured engaged in work for the first time; 14% noted they seldom do this work.	<b>Survey I:</b> Regarding training issues: workers believed changes in work procedures (7%), lack of task instructions (8%), and unfamiliarity with tools (5%) contributed to mishaps.  <b>In Survey II,</b> 11% of injured indicated employers conducted safety training and reviewed procedures as follow-up to injury event. <b>Survey I &amp; II:</b> Almost half of the workers believed no action was taken or knew of none.
1041 respondents to a survey of 2313 workers with reportable injuries from oil/gas drilling work (May–August, 1982)	On-the job training was most common (80%), followed by safety meetings (50%), printed materials (31%), and class instruction (24%). 51% of workers noted training from previous supervisor and 28% from co-workers.	75% noted training in use of personal protective equipment; training on respirators received least response (28%).	21% indicated training did not cover safety procedures for job worker was doing when injured.		25–34 year old group showed highest % of injuries (38%); 20–24 year old group next with 30%.	Among factors contributing to accidents re training issues, workers noted incorrect instructions (2%), recent change in work routines (6%), and unaware of hazards (15%).

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1086 respondents to a survey of 1810 workers in the logging industry with reportable injuries (April-June, 1982)	Loggers noted supervisor source of training (29%); followed by a relative (16%) and co-worker (11%).		51% of injured loggers indicated no safety training.		13% of loggers had less than 6 months experience; 22% no more than 1 year in such work.  25-34 year old group with highest % of injuries (38%).	Regarding training: loggers noted factors contributing to injury such as wrong cutting method (6%), unaware of certain hazards (14%), and misjudgements (15%).
774 respondents to a survey of 1433 workers with reportable injuries resulting from falls from elevations (December 1981-June 1982)	75% indicated that training on how and when to use fall protection not provided by company.				25-34 year old group had highest % of injuries (31%).	Regarding training issues in injury occurrence: 22% of workers noted lack of hazard awareness. Others were: Need for more/better safety training (10%), use of safer work procedures (43%), and better company enforcement of such actions (21%).

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658 respondents to a survey of 1241 construction laborers with reportable injuries (October, 1983)	34% received training from present supervisor, 28% from prior one, and 21% from co-worker. On-the-job training noted for 51% of laborers; 49% indicated vocational/technical courses in school on job safety/health topics.	Information on health hazards (e.g., asbestos) given to only 22%–23% of workers.  Vocational /technical courses covering topics such as use of protective equipment or recognition of unsafe/toxic conditions were noted by from 25% to 69% of the workers.	26% of workers noted that they never received any training for the work done at the injury event. 33% indicated they never received safety instructions of any kind. 77%–78% indicated no information given on exposures to hazardous materials such as asbestos.		74% of the injured laborers had less than 1 year's experience. More than one half of the injured workers had been at a particular jobsite for less than 6 months. 12% suffered injury on the first day at the site.  25–34 year old group had the highest % of injuries (36%); the 20–24 year old group was next (32%).	Regarding training factors of consequence to injury event or its avoidance: Workers noted gaps in hazard recognition (14%), improper job instruction (3%), use of safer job procedures (21%), better safety training (8%), and company enforcement of safe work practices (11%).

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424 respondents to a survey of 770 workers with reportable injuries from warehousing type jobs (September, 1984)	On-the-job training noted by 32% of injured workers; printed materials (22%), safety meetings (20%), and films (18%) also checked as modes for receiving safety training. 30% also noted a labor-management committee on safety issues.	Safety training received by injured workers covered use of forklift trucks (23%), other powered equipment (13%), manual lifting techniques (28%), and housekeeping (29%). Written safe job procedures for the work done when injured was noted by 4% of respondents.	46% indicated no training for the job being performed when injured. 48% noted they never received safety training of any kind.		21% of those injured had been in warehousing work for no more than 1 year, and 43% of these workers had been with the employer for no more than 1 year at time of injury.	Regarding training factors of consequence to the injury or its prevention: workers noted correcting job instructions (2%), enhanced use of safe work practices (19%), better enforcement of rules (8%), greater use of lifting/handling equipment (5%). 41% of worker noted that no employer actions were taken after the injury event.

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381 respondents to a survey of 582 workers with reportable injuries in longshoring work. (October 1985; April 1986)	50% indicated company as source of training; other sources were union (44%), gang foremen (16%), superintendent (9%).	Training topics covered safe operation of trucks and forklifts (24%), cargo handling (20%), crane/winch use (10%), and union-management responsibilities (17%).		59% indicated that they have not had training in the past 3 years.	Bulk of injured workers (82%) had 5 years or more service in job category where event occurred; 75% with 10 years or more in longshoring work. Age group 35-44 years had highest % of injured (29%); 45-54 year old group next (27%).	94% of workers believed safety training could have avoided accidents.  Workers rated enforcement of safety rules as usually-62%; sometimes-21%; hardly ever-8% and not at all-9%.  Regarding training factors for accident prevention: workers noted need for co-worker receiving better training (10%), personally using safer work procedures (9%), and better house-keeping (5%).



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199 respondents to a survey of 395 workers with chemical burn injuries experienced on the job (May–August, 1985)	Supervisor, employer, or safety officer noted as source of hazard information (28%); the next sources were product label (9%) and co-worker (5%). Written instructions on use of chemical-resistant equipment noted by 7% of afflicted.	Main topic was where/when to wear protective equipment (28%). Fewer workers noted training on topics of types of protective equipment (5%), or their limits or advantages (7%).	67% did not receive any kind of information on wearing protective equipment. 61% indicated no written or printed instructions from employer on safe work practices in handling chemicals in use.		25–34 year old group had highest % of injuries (37%); next was the 20–24 year old group with 28%.	Regarding training factors of consequence to injury occurrence or prevention: Workers noted lack of hazard awareness (17%), wearing wrong type of equipment (12%), no job instructions (3%), needs for using safer procedures (34%), better safety training (15%), and improved company enforcement of safe work procedures (18%).  <b>Note:</b> This survey was before enactment of the Hazard Communication Standard requiring employers to transmit information to workers through labels, material safety data sheets, and special training.

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256 respondents to a survey of 474 workers with reportable heat burn injuries (from contacts with hot objects/materials) on the job (May–August, 1985)	Supervisor, employer, or safety supervisor, was information source on use of burn protective equipment for 82% of afflicted; co-worker (18%) and printed instructions on protective gear (17%) also noted as sources.	19% of afflicted did not know if company had policy on wearing protective equipment. 17% indicated equipment being used was not designed to protect against heat burns.	55% of afflicted workers indicated no information provided on wearing protective equipment.		35% of injured workers had no more than 1 year service with employer; 19% had six months or less.  25–34 year old group had greatest % of injuries (37%), next was 35–44 year old group with 24% followed by the 20–24 year old group with 16%.	Regarding training: workers believed injuries could have been averted through use of safer work procedures (25%), better hazard warnings (7%), and effective company enforcing safe work practices (10%).