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SECRETARY OF LABOR,	
Complainant,	
v.	OSHRC Docket No. 92-2596
KOKOSING CONSTRUCTION CO., INC.,	
Respondent.	

NOTICE OF COMMISSION DECISION

The attached decision by the Occupational Safety and Health Review Commission was issued on December 20,1996 **ANY PERSON ADVERSELY AFFECTED OR AGGRIEVED WHO WISHES TO OBTAIN REVIEW OF THIS DECISION MUST FILE A NOTICE OF APPEAL WITH THE APPROPRIATE FEDERAL COURT OF APPEALS WITHIN 60 DAYS OF THE DATE OF THIS DECISION.** See Section 11 of the Occupational Safety and Health Act of 1970, 29 U.S.C. § 660.

FOR THE COMMISSION

Date: December 20, 1996

Ray H. Darling, Jr./jw

Ray H. Darling, Jr.
Executive Secretary

92-2596

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SECRETARY OF LABOR, Complainant, v. KOKOSING CONSTRUCTION CO., INC., Respondent.	OSHRC Docket No. 92-2596

DECISION

Before: WEISBERG, Chairman; MONTOYA and GUTTMAN, Commissioners.

BY THE COMMISSION:

On review in this case are two alleged violations of the Occupational Safety and Health Act of 1970, 29 U.S.C. §§ 651-678, involving a worksite of Kokosing Construction Company, Inc., in Columbus, Ohio. In the first item, which Administrative Law Judge John H. Frye, III affirmed, the Secretary of Labor alleged that Kokosing failed to properly guard certain reinforcing steel rods to eliminate impalement hazards. In the second item, which Judge Frye vacated, the Secretary alleged that Kokosing failed to ensure that its employees used fall protection to gain access to their working positions on formwork walls. We affirm the judge's decision regarding both items.

I. Unguarded Rebars

On March 20, 1993, Dwight Holley, a Kokosing carpenter engaged in disassembling a formwork wall, fell approximately 22 feet onto a concrete slab and died after mistakenly detaching the scaffold bracket to which he had tied off his safety belt. The fall occurred near

two rows of upright unguarded reinforcing rods ("rebars"). The Secretary alleges that Kokosing's failure to guard the rebars was a violation of section 1926.701(b), which requires guarding of rebars "onto or into which employees could fall."[1] At issue here is whether the Secretary established that Kokosing's employees could have fallen onto or had access to the unguarded rebars and whether Kokosing had knowledge of the violative condition.[2]

A. Employee Access

Access to unguarded rebars exists if there is a "reasonable predictability" that employees "will be, are, or have been in" the "zone of danger." *See, e.g., Capform, Inc.*, 16 BNA OSHC 2040, 2041, 1993-95 CCH OSHD ¶ 30,589, pp. 42,355-56 (No. 91-1613, 1994). Here, the evidence establishes that Holley was working where he could have fallen into the zone of danger at the unguarded rebars and, indeed, that his body fell into the zone of danger.[3] Immediately prior to his accident, Holley was seen straddling the scaffold bracket which he was assigned to remove and to which his safety belt was tied off. The bracket was approximately 16-18 inches from the end of the formwork wall. Nearly flush with the end of the wall and 22 feet below it were the two upright rows of unguarded rebars to which the Secretary argues Holley was exposed. Obviously, the reach of an ordinary man's arm would

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[1]In full, section 1926.701(b) provides: "All protruding reinforcing steel, onto or into which employees could fall, shall be guarded to eliminate the hazard of impalement."

[2]To establish a violation of a standard, the Secretary must show that the standard applies, that it was not complied with, that employees had access to the violative conditions, and that the employer knew or could have known of the conditions with the exercise of reasonable diligence. *Astra Pharmaceutical Prods., Inc.*, 9 BNA OSHC 2126, 2129, 1981 CCH OSHD ¶ 25,578, pp. 31,899-90 (No. 78-6247, 1981), *aff'd,* 681 F.2d 69 (1st Cir. 1982). This standard does not, as Kokosing argues, require the Secretary to establish a "significant risk" that an employee would be "realistically" exposed to an impalement risk.

[3]We limit our discussion to Holley inasmuch as the record indicates that his assigned work was typical of the work that Kokosing needed to perform in the vicinity of the unguarded rebars on the day of the accident.

cover the short distance of only approximately 16-18 inches from the scaffold bracket to the zone of danger above these unguarded rebars. Moreover, a photograph taken on the day of the accident by Anthony Lowe, the Secretary's compliance officer, shows that Holley's blood on the concrete below almost extended into the front rebar row.

The photograph also shows the scaffold bracket that Holley had detached from the wall immediately prior to his fall. This bracket, which is shaped like an open triangle, became impaled on an unguarded rebar in the front row when Holley fell. Garry V. Curren, Kokosing's safety director, testified that Holley "still was secured to the scaffold bracket with his rebar chain assembly which he had secured himself to" when Curren arrived at the scene. Although other witnesses suggested in their testimony that Holley's body was somewhat farther away, Holley's torso could not have been farther than 18 inches (the length of his rebar chain assembly) from where the scaffold bracket became impaled on an unguarded rebar. Moreover, one or both of Holley's arms or legs could have fallen closer than 18 inches.

To counter this evidence that Holley could have fallen onto or into the unguarded rebars, Kokosing offered the testimony of Douglas Ruth, an engineering consultant with expertise in accident reconstruction, physics and force analysis. Ruth explained that "[i]t is whatever forces [that] are acting on him at the instant he is released that is going to determine his trajectory and where he lands."[4] According to Ruth, Holley "can go straight down, he can go back slightly, and he can go off to one side or the other, depending on how he is pushing with his feet because whatever forces were acting on him at the moment his support let go[]

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[4]We reject Kokosing's claim that the unguarded rebars were "behind" the wall. The photographs show that two rows of unguarded rebars were nearly flush with the end of the wall and only 3-4 inches back from its face. We thus adopt Judge Frye's finding that unguarded rebars were "located within inches of the southern edge of the west wall."

are the only forces that can cause him to move in one direction or another."[5] Ruth testified that Holley could "reach out with his arms" as he fell, yet Ruth did not take into account that Holley's arms could have extended approximately 2-3 feet from his shoulders and Holley's legs could have extended approximately 2-3 feet from his hips. Again, because Holley's torso was only 18 inches away from the scaffold bracket when it fell into the unguarded rebars, a hand or a foot could have been impaled. When the Secretary promulgated section 1926.701(b), he indicated an intent to include instances where only a part of an employee's body is above unguarded rebar and exposed to the impalement hazard. *See* 53 Fed. Reg. 27,612, 22,618 (June 16, 1988). *Compare Early-Massman*, 7 BNA OSHC 1534, 1537-38, 1979 CCH OSHD ¶ 23,732, p. 28,779 (No. 15721, 1979) (violation of § 1926.700(b)(2), predecessor to cited standard, exists if "unprotected rebar was within striking distance of any part of the fallen employee's body"). We therefore find that the Secretary's evidence regarding the distances and dimensions pertinent to Holley's fall establishes that part of Holley's body could have fallen onto or into the rebar in violation of section 1926.701(b).

B. Employer Knowledge

We also find that, with the exercise of reasonable diligence, Kokosing could have known of the violative condition. There is no direct evidence that Kokosing personnel knew that the rebar was uncovered, but Compliance Officer Lowe testified that he observed the

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[5]Curren testified that Holley and the scaffold bracket "were rotating" when Holley "went off the wall with it," that "centrifugal force from his body rotating around" the scaffold bracket caused it to be "swung forward into the rebar," and that Holley's 18-inch chain attached to it "grabbed him and sucked him closer to the rebar than he would have [fallen]." Relying on this testimony, Judge Frye found that Holley could as easily have landed in the rebar as the scaffold bracket did. On review, Kokosing argues that this finding is unsupported by the record as a whole showing that Holley's body would have been the central mass with the scaffold bracket swinging around it. We have been unable to find any such testimony, but we agree that the overall sense of the record is that Holley would have fallen straight down or backward. Therefore, we set aside the Judge's finding that has Holley inevitably rotating toward the wall.

unguarded rebar in plain view when he entered the work area to conduct his inspection and that it would have been in plain view of Kokosing's employees because the work area was "traveled." Eric E. Willey, Kokosing's General Carpenter Foreman testified that various crews were in the general area. David R. Jarvis, a Kokosing carpenter on the same crew as Holley, testified that, at some time during the 4½ hours before Holley's accident, Willey was "in one part" of the disassembly crew's area. The conspicuous location, the readily observable nature of the violative condition, and the presence of Kokosing's crews in the area warrant a finding of constructive knowledge. *See Atlantic Battery Co.*, 16 BNA OSHC 2131, 2166 n.56, 1993-95 CCH OSHD ¶ 30,636, p. 42,482 n.56 (No. 90-1747, 1994). *Compare Capform*, 16 BNA OSHC at 2045, 1993-94 CCH OSHD at p. 42,360 (work on same floor as "readily apparent" violations). Kokosing's failure to instruct its carpenters to report unguarded rebars is also decisive. *Pace Constr. Corp.*, 14 BNA OSHC 2216, 2222, 1991-93 CCH OSHD ¶ 29,333, p. 39,432 (No. 86-758, 1991) (failure to instruct employees not to work on unguarded balcony).[6] Accordingly, we find constructive knowledge and affirm the citation item, as did Judge Frye.

C. Penalty

Judge Frye found that the gravity of the violation was low in view of the relatively low likelihood of falling onto unguarded rebars located at an end of a wall. However, he discounted Kokosing's good faith on the basis that the company failed to ensure correction of an easily discoverable condition. Kokosing was large in size (over 250 persons) and had a prior history (two serious items and one willful item at another jobsite). Judge Frye

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[6]We found no evidence of the daily worksite inspections referred to by Kokosing. The testimony cited by Kokosing only refers to daily inspections of equipment such as safety belts. Foremen had inherent responsibility for day-to-day safety, but General Carpenter Foreman Willey only made systematic safety inspections on a weekly basis. There is also no evidence that Kokosing instructed the crews to examine the work area at the start of each shift and report observable hazards throughout the shift.

assessed $4,250 for a serious violation. The parties do not dispute the judge's assessment, and we find that it is appropriate based on the evidence pertaining to the relevant factors in section 17(j) of the Act, 29 U.S.C. § 666(j). We therefore adopt the judge's assessment.

II. Accessing Formwork Walls Without Fall Protection

The Secretary alleged that Kokosing exposed its carpenters to fall hazards in violation of the general duty clause, section 5(a)(1) of the Act.[7] The exposures took place when the carpenters climbed formwork walls without fall protection, such as lifelines and safety belts, scaffolds or ladders. Kokosing's carpenters climbed the formwork walls by holding onto any available vertical beams attached to the walls and by stepping on any available horizontal beams. Wherever such beams were unavailable, Kokosing's carpenters simply climbed the formwork itself — on the formwork's steel "webs" or "webbing." The formwork at issue here was Symons Steel- Ply, a lightweight variety consisting of steel webbing approximately 1½ to 2 inches deep attached to plywood. The vertical and horizontal beams used to reinforce the Symons Steel-Ply added approximately 2 inches to the depth of the webbing.

To establish a violation of the general duty clause, the Secretary must show that (1) a workplace condition or activity presented a hazard, (2) the employer or industry recognized it, (3) it was likely to cause serious physical harm, and (4) a feasible and useful means of abatement existed by which to materially reduce or eliminate it. *See Waldon Healthcare Center*, 16 BNA OSHC 1052, 1060, 1993-95 CCH OSHD ¶ 30,021, p. 41,151 (No. 89-2804, 1993). Judge Frye found the Secretary's evidence insufficient to establish three of the four elements of proof — the alleged fall hazard's existence, its recognition, and the feasibility

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[7]Section 5(a)(1), 29 U.S.C. § 654(a)(1), provides: "Each employer shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees.

of abating it.[8] We find that the Secretary established all elements of a § 5(a)(1) violation except feasibility of abatement.

A. Existence of a Fall Hazard

There is abundant evidence in this case to establish that the practice of climbing formwork without fall protection posed a hazard.[9] First, there are three different standards that describe the practice of climbing formwork without fall protection as a hazard. A standard published by the American National Standards Institute ("ANSI"), ANSI A10.9-1982, adopted in 1982 and entitled "Construction and Demolition Operations — Concrete and Masonry Work — Safety Requirements," states: "When the forming and stripping operations . . . cannot be done from the floor, ground, or other solid construction, ladders, scaffolds, or other approved means of access shall be used." ANSI A10.9-1982, ¶ 7.4.4.[10] A guideline published by the Scaffold, Shoring and Forming Institute ("SSFI") in a publication entitled "Guide to Safety Procedures for Vertical Concrete Formwork,"[11] states, "Do not use form panels as a ladder." Guide at § 4.13. According to Richard F. King, the Secretary's

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[8]Sufficient proof of the likelihood of serious physical harm was found by Judge Frye and is not at issue on review.

[9]Judge Frye relied on *Kastalon, Inc.*, 12 BNA OSHC 1928, 1932, 1986-87 CCH OSHD ¶ 27,643, p. 35,975 (No. 79-3561, 1986), to fault the Secretary for failing to show that "falls were sufficiently likely to occur so that they should be considered a hazard." We disagree. As we noted in *Waldon*, 16 BNA OSHC at 1060 & n.5, 1993-95 CCH OSHD at p. 41,153 & n.5, the Commission will consider whether or not a condition is hazardous so long as it can occur under "other than a freakish or utterly implausible concurrence of circumstances."

[10]The parties do not dispute that "other solid construction" means something other than the formwork wall itself. At issue is whether "other approved means of access" excludes climbing the webbing of the formwork. ANSI defines "approved" as "[s]anctioned, endorsed, accredited, certified, or accepted by a duly constituted and recognized authority." ANSI A-10.9, ¶ 2.

[11]The photocopy in the record does not show a date of publication, but King testified without rebuttal that it existed in the early 1980's.

expert as to fall protection in use in the concrete construction industry since 1982,[12] the SSFI guideline forbids climbing formwork.[13] These industry provisions were followed in 1986 by a proposed OSHA standard requiring employees "on the face of formwork" to use body belt/harness systems, safety net systems, "*or* positioning device systems." This standard became effective on August 9, 1994. 29 C.F.R. § 1926.501(a)(5) (of "Subpart M — Fall Protection.")[14] In addition, Kokosing's Safety Officer, Joseph Sellers, conceded in his testimony that fall hazards do exist when employees access vertical formwork without fall protection, and Kokosing carpenter Jarvis testified, "as you go along, you learn the kind of work that we do, [that] you have certain hazards." We therefore find that the practice of climbing formwork on its beams and webs without using fall protection presented a hazard.

B. Hazard Recognition

Hazard recognition may be shown by either the actual knowledge of the employer or the standard of knowledge in the employer's industry — an objective test. *Continental Oil Co. v. OSHRC*, 630 F.2d 446, 448 (6th Cir. 1980). *See also Inland Steel*, 12 BNA OSHC

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[12]From February 1982 through June 1993, when he testified in this case, King was Black and Veatch's Manager of Safety and Health on power plant construction projects around the nation involving numerous independent contractors performing concrete construction. Black and Veatch is a large Kansas City engineering-architectural firm with approximately 30 to 50 projects and 100 to 140 independent contractors at any given time.

[13]King believed that § 4.13 must be read with the next section, § 4.14, which states: "If using scaffold bracket walkways is not practical, personnel must be protected against falls by means of safety belts and lanyards attached to components having adequate strength to safely support the imposed loads, or by safety nets or other equivalent protection."

[14]Judge Frye interpreted the "or" in this list of protection systems to mean that the first two, which protect moving/stationary employees, may be omitted in favor of the third one, which only protects stationary employees. However, the standard requires that "[e]ach employee on the face of formwork . . . shall be protected from falling 6 feet or more . . . ." 29 C.F.R. § 1926.501(a)(5). The listed methods of fall protection are ways to comply with the standard's command. Therefore, we reject the judge's interpretation.

1968, 1970, 1971 & n.4, 1986-87 CCH OSHD ¶ 27,647, pp. 35,996, 35,998 & n.4 (No. 79-3286, 1986) (necessity for proof of "a hazard that is recognized as such by the employer" or by "general understanding in the [employer's] industry").[15] Industry standards and guidelines such as those published by ANSI are evidence of industry recognition. *See generally, Cargill, Inc.*, 10 BNA OSHC 1398, 1402, 1982 CCH OSHD ¶ 25,935, p. 32,486 (No. 78-5707, 1982).

The two industry standards adopted prior to the citation in this case and introduced by the Secretary are compelling evidence that Kokosing's industry recognized the hazard of climbing formwork without fall protection. King, the sole witness who was a member of the ANSI committee in charge of providing interpretations of ANSI A10.9-1982, gave unrebutted testimony that climbing formwork without fall protection is not permissible under the 1982 ANSI standard because its language "other approved means of access" only refers to "lifelines, double lanyards, mobile lift devices" or any other device that is "intended to be climbed" or that ensures "a reasonable certainty that you [are] protected against a fall." King also gave unrebutted testimony, based on his 1982-to-1993 experience with numerous independent concrete contractors constructing power plants throughout the nation, that the 1982 ANSI standard is generally known throughout the concrete construction industry and that climbing formwork without fall protection is not acceptable in the industry.

King also testified on the basis of his experience that the concrete construction

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[15]Some court decisions, to which the Secretary refers on review, have held that a fall hazard can be so obvious that it may be deemed recognized without reference to industry practice or actual recognition. *Tri-State Roofing & Sheet Metal, Inc. v. OSHRC,* 685 F.2d 878 (4th Cir. 1982) (unguarded platform 40 feet above concrete floor); *Austin Bldg. Co. v. OSHRC*, 647 F.2d 1063 (10th Cir. 1981) (welder "balancing with each foot on a narrow railing"); *Voegele Co. v. OSHRC*, 625 F.2d 1075 (3d Cir. 1980) (risk of serious injury and no fall protection equipment provided). However, in *Southern Ohio Bldg. Sys., Inc. v. OSHRC,* 649 F.2d 456, 460 (6th Cir. 1981), the court held the general duty clause enforceable for an obvious hazard only where "the particular activity referred to in the evidence" violated "a recognized standard of the industry."

industry knows that the activity is forbidden. Kokosing witnesses asserted that the SSFI guideline only forbids laying a form panel at an angle and climbing it as a ladder, but Judge Frye rejected this view as "implausible" because "the configuration of single formwork panels does not seem to be conducive to use as a short step ladder." We agree, in view of King's testimony that he had observed a variety of fall protection devices in use on several kinds of formwork at power plant construction worksites around the nation. King testified that, instead of climbing the beams and webbing of the formwork walls, the employees used "drop lines, vertical drop[] lines, horizontal lines, retractable lifelines," "double lanyards, double rebar hooks," and in "one application [they] used safety nets."

We also find that the OSHA standard itself, which was proposed prior to the inspection in this case and which advocated protection for all employees on formwork, is evidence that safety officials and other individuals familiar with the industry recognized the hazard at that time. *Cf. General Dynamics Land Sys. Div., Inc.,* 15 BNA OSHC 1275, 1281-82, 1991-93 CCH OSHD ¶ 29, 467, p.39, 753 (No. 83-1293, 1991) (Secretary's draft standard is "instructive in determining the general consensus of what constitutes a confined space"), *aff'd,* 985 F.2d 560 (6th Cir. 1993).[16]

Kokosing did not introduce any industry standards or guidelines to show industry acceptance or approval of climbing vertical formwork without fall protection. Kokosing

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[16]Kokosing was not unfamiliar with the use of fall protection on formwork. Prior to the inspection in this case, Kokosing worked on a project in East Liverpool, Ohio, that required fall protection wherever feasible, including on or at formwork walls. Kokosing was only allowed to work without fall protection on Symons Steel-Ply there because, according to Kokosing witnesses, Symons advised that lifelines could not be installed on this one type of light-weight formwork. Also, Kokosing General Carpenter Foreman Willey's testimony indicates that he or Kokosing did have an informal policy or practice of using feasible fall protection on or at formwork walls prior to the 1992 inspection. Willey testified that "on previous jobs, and in situations where we could, we have implemented it [fall protection such as lifelines and safety belts], yes."

relied instead on witnesses who focused primarily on practices with respect to Symons Steel-Ply in the State of Ohio. For example, Kokosing Safety Director Curren testified that in driving 50,000 to 60,000 miles per year throughout Ohio to various projects he had noticed other contractors accessing Symons Steel-Ply without fall protection. Similarly, carpenter Jarvis testified that his prior employers accessed Steel-Ply without fall protection. This testimony is strong evidence of the industry practice in Ohio when Symons Steel-Ply is used. However, because, as we discuss below, Kokosing argues that the fall protection methods that are otherwise feasible may not be feasible where Symons Steel-Ply is employed, this evidence regarding the absence of fall protection does not necessarily mean that a hazard is not recognized where Symons Steel-Ply is climbed without fall protection. Also, the testimony of Kokosing's witnesses does not address recognition of the hazard on other types of formwork, and it does not provide the nation-wide industry perspective afforded by the safety standards for the industry and by King's testimony. Thus, Kokosing's evidence appears to be more relevant to our examination of the feasibility of fall protection on Symons Steel-Ply than to industry recognition of the hazard. We therefore find that this record, particularly King's testimony of his experience with concrete industry contractors throughout the nation, establishes that Kokosing's industry recognizes that moving around on formwork walls without fall protection is a hazard.[17]

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[17]Also, Compliance Officer Lowe, testified that he visited a carpenters' union training center prior to the 1992 inspection in this case and observed fall protection on formwork used for training in fall protection. We rely on this testimony, as it was unrebutted. Jarvis, who claimed that he never received such training, admitted that he never went to the training center. We do not rely on Compliance Officer Medlock's testimony about a State of Ohio slide presentation showing fall protection on formwork because, insofar as this record shows, it was not available prior to the 1992 inspection in this case. We also give little weight to his other testimony regarding recognition by certain employers because his experience with employers using fall protection was very limited. *See Baker Concrete Constr. Co.*, 17 BNA

(continued...)

C. Feasibility

The Secretary posited that Kokosing should have addressed the fall hazard by use of personal protective equipment for tying off, scaffolds, or ladders.

The feasibility of using personal protective equipment largely turns on whether it was feasible to use Steel-Ply or some other substantial structure at the worksite as an anchor to tie off to. At best, however, the evidence on this point is in sharp conflict. Compliance Officer Medlock's testimony introduced a product report entitled "STEEL-PLY SAFETY EYE" that Symons published in 1979. It suggested that a Symons safety eye could provide a safe method of attaching safety belts and lifelines to Steel-Ply formwork, and Medlock testified that two Symons employees had assured him that the safety eye would support such personal protective equipment on a Steel-Ply wall. However, Kokosing's Safety Director Curren testified that he spoke with officials at Symons who verified that the strength rating in the 1979 report pertained only to the safety eye, not to the Steel-Ply panels to which the eye would be anchored. Curren also said that, because Steel-Ply is so light-weight, "the technology is not there and the engineering is not there" to adapt lifelines to it. Kokosing's Safety Officer Sellers and Kokosing's General Carpenter Foreman Willey, as well as Curren, testified that Symons endorses climbing the Steel-Ply panels and does not recommend lifelines. The Secretary did not introduce anyone from Symons as a witness to clarify the situation. In fact, the judge gave little weight to the product report and related evidence because he found that the varying interpretations attributed to Symons were in conflict and that neither party attempted to resolve the conflict by calling a Symons representative as a witness. We agree with the judge's reasoning. Determining the limits of Symons Steel-Ply

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[17](...continued)
OSHC 1236, 1238 n.5, 1993-95 CCH OSHD ¶ 30,768, p. 42,766 n.5 (No. 93-606, 1995). One company on which he relied, Baker Concrete, actually received a citation for lack of fall protection in 1993. Danis, another company on which he relied, only adopted its fall protection rule in March 1993, after the inspection in this case.

was critical to determining whether tying off might be feasible. The Secretary's failure to resolve the issue severely limits his case.

King did testify that he had seen lifelines and other such personal protective equipment on Steel-Ply at the projects he had supervised around the nation, but it is clear that he had difficulty distinguishing Steel-Ply from other types of formwork that are capable of supporting such personal protective equipment. In short, we cannot credit his assertions that it was Steel-Ply on which he had observed safety belts and lifelines. Compliance Officer Lowe, who had never seen lifelines on any kind of formwork, not to mention Steel-Ply, was unable to add anything substantial in this regard. King and Medlock posited that nearby concrete structures might have served as anchors — but only if they could support 5,400 pounds[18] — and neither of them knew the capacity of the structures. As Curren testified, it could only be done "[i]f the concrete ha[s] the tonnage available and it [is] of substantial strength to hold it." On review, the Secretary claims that this testimony "does not explain why, once the concrete has been poured and cured, the concrete wall would not provide sufficient support." However, inasmuch as the burden was on the Secretary to pursue the concerns Curren raised,[19] we are unable to find that Kokosing could have installed the recommended personal protective equipment on or in the vicinity of the Steel-Ply wall where the violation occurred in this case.

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[18]29 C.F.R. § 1926.104(c) among the Secretary's standards regarding "Safety belts, lifelines, and lanyards" requires that lifelines consist of manila rope or its equivalent having a "minimum breaking strength of 5,400 pounds," indicating that any structures to which lifelines are attached would have to be capable of supporting 5,400 pounds.

[19]The Secretary had the burden of rebutting Kokosing's testimony. Under the general duty clause, if a proposed abatement method creates additional hazards rather than reducing or eliminating the alleged hazard, the citation must be vacated for failure to prove feasibility; it is not the employer's burden to establish an affirmative defense of greater hazard. *Royal Logging Co.*, 7 BNA OSHC 1744, 1751, 1979 CCH OSHD ¶ 23,914, pp. 28,997-98 (No. 15169, 1979), *aff'd*, 645 F.2d 822 (9th Cir. 1981).

The record also fails to show that scaffolds were feasible in the relatively small working space, which was inside of U-shaped formwork. Lowe and Medlock testified that Kokosing could have operated mobile scaffolds in the area that measured 15 feet by 7-10 feet. Curren testified, however, that the working space at the formwork was too obstructed and congested to use either mobile scaffolds or aerial lifts. Willey and Sellers said much same thing.

In proposing ladders as a feasible means of abatement, the Secretary relied on provisions for their use as fall protection in the ANSI and SSFI standards and on the testimony of his compliance officers and his expert witness that ladders have been used in certain instances involving formwork. This evidence is sufficient to establish a prima facie case of feasibility as to ladders. However, we find that Kokosing rebutted this prima facie showing with detailed testimony of the difficulties encountered in using ladders at this worksite. For example, Willey, Kokosing's general carpenter foreman, testified on the basis of his experience as a general carpenter foreman that ladders would be "awkward and cumbersome" and "impossible to use . . . in some cases . . . ." He felt "more secure climbing [the formwork webbing] vertically . . . and work[ing] across [as] opposed to coming up a ladder and having to come around that ladder to get onto the forms." Kokosing Safety Officer Sellers found climbing a ladder less safe than climbing the webbing and beams of a formwork wall because "I can get a firm grip on them. [The formwork wall] is not going to be dislodged by traffic below." *See supra* note 19. Carpenters Union Steward Jarvis testified that he felt "more comfortable if my hands are gripping something than leaning out off a ladder." The Secretary's compliance officers and his expert witness did testify that ladders have certain beneficial features that are lacking on the formwork beams and webbing, such as textured rungs, but their testimony was very general. It did not address the problems with

the use of ladders raised by Kokosing.[20] We therefore find that in this case the Secretary failed to establish a feasible method of fall protection for Kokosing's employees moving around on formwork.

Accordingly, the Secretary having failed to establish the feasibility of abatement, we vacate the item alleging a violation of section 5(a)(1) of the Act.

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[20]We note that it appears ladders play no part in section 1926.501(a)(5), the formwork provision of the Fall Protection standard in Subpart M that was promulgated subsequent to the citation in this case. Ladders are not one of the three abatement methods listed there for formwork. Nor are they mentioned elsewhere in that subpart as an alternate method of protection for use on formwork.

Order

We affirm the citation item alleging a serious violation of 29 C.F.R. § 1926.701(b) and we assess a penalty of $4,250. We vacate the citation item alleging a violation of 29 U.S.C. § 654(a)(1).

Stuart E. Weisberg
Chairman

Velma Montoya
Commissioner

Daniel Guttman
Commissioner

Dated: December 20, 1996

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SECRETARY OF LABOR
Complainant,
v.
KOKOSING CONSTRUCTION CO., INC.
Respondent.

OSHRC DOCKET
NO. 92-2596

NOTICE OF DOCKETING
OF ADMINISTRATIVE LAW JUDGE'S DECISION

The Administrative Law Judge's Report in the above referenced case was docketed with the Commission on September 8, 1994. The decision of the Judge will become a final order of the Commission on October 7, 1994 unless a Commission member directs review of the decision on or before that date. ANY PARTY DESIRING REVIEW OF THE JUDGE'S DECISION BY THE COMMISSION MUST FILE A PETITION FOR DISCRETIONARY REVIEW. Any such petition should be received by the Executive Secretary on or before September 27, 1994 in order to permit sufficient time for its review. See Commission Rule 91, 29 C.F.R. 2200.91.

All further pleadings or communications regarding this case shall be addressed to:

Executive Secretary
Occupational Safety and Health
Review Commission
1120 20th St. N.W., Suite 980
Washington, D.C. 20036-3419

Petitioning parties shall also mail a copy to:

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If a Direction for Review is issued by the Commission, then the Counsel for Regional Trial Litigation will represent the Department of Labor. Any party having questions about review rights may contact the Commission's Executive Secretary or call (202) 606-5400.

FOR THE COMMISSION

Ray H. Darling, Jr.

Date: September 8, 1994

Ray H. Darling, Jr.
Executive Secretary

DOCKET NO. 92-2596

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UNITED STATES OF AMERICA
OCCUPATIONAL SAFETY AND HEALTH REVIEW COMMISSION

SECRETARY OF LABOR,	:	
Complainant,	:	
v.	:	Docket No. 92-2596
KOKOSING CONSTRUCTION CO. INC.,	:	
Respondent.	:	

Appearances:

Christopher J. Carney, Esquire
Office of the Solicitor
U.S. Department of Labor
Cleveland, Ohio

For Complainant

Michael S. Holman, Esquire
Sarah J. DeBruin, Esquire
Bricker & Eckler
Columbus, Ohio

For Respondent

BEFORE: ADMINISTRATIVE LAW JUDGE JOHN H FRYE, III

DECISION AND ORDER

INTRODUCTION

This matter is before the Commission pursuant to § 10(c) of the Occupational Safety and Health Act of 1970 (29 C.F.R. § 651 et seq.), hereinafter referred to as the Act. Respondent is an employer engaged in a business affecting interstate commerce as defined by § 3(5) of the Act and has employees as defined by § 3(6) of the Act (Answer ¶ 2).

Between March 20 and April 10, 1992, Occupational Safety and Health Administration (OSHA) compliance officer Anthony Lowe conducted an inspection at Respondent's Jackson Pike Wastewater Treatment worksite in Columbus, Ohio. Mr. Lowe

began his inspection of the Jackson Pike site in response to a report of the death of a Kokosing employee, Dwight Holley. On the morning of March 20, 1993, Mr. Holley fell to his death while removing a scaffold bracket from the face of the Symons Steel-Ply panel[1] (Tr. 74, 76, 183-84, 190-91) to which he had tied his safety belt (Tr. 195).[2] As a result of the inspection, Respondent was issued two citations:

1. Serious Citation No. 1, Item 1, alleges a violation of 29 C.F.R. § 1926.20(b)(1) in that Kokosing did not maintain an adequate accident prevention program with respect to employees' activities on Symons Steel-Ply concrete formwork;

2. Willful Citation No. 2,[3] Item 1, alleges a violation of 29 C.F.R. § 1926.701(b) in that Kokosing failed to guard protruding concrete reinforcing bars (rebars) onto which employees might fall; and

3. Willful Citation No. 2, Item 2, alleges a violation of 29 C.F.R. § 1926.1051(a), or alternatively § 5(a)(1) of the Act, the General Duty Clause,[4] in that Kokosing failed to provide fall protection systems in lieu of stairways or ladders on the Symons Steel-Ply concrete formwork.

On April 6, 1993, I granted Respondent's Motion for Partial Summary Judgment with respect to the alleged violations of § 1926.20(b)(1) set forth in Citation 1, Item 1, and §

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[1]Mr. Holley was later found to have had used marijuana shortly before his accident (Tr. 586).

[2]The wall of the Symons Steel-ply form panel upon which Mr. Holley was working was approximately twenty-four to twenty-six feet high (Tr. 190), and the scaffold bracket was located about twenty-two feet off the ground and approximately sixteen to eighteen inches in from the edge of the formwork (Tr. 190, 194).

[3]By Motion dated December 28, 1992, the Secretary amended his Complaint to allege, in the alternative, that Citation No. 2 was a Serious Citation within the meaning of § 17(k) of the Act.

[4]The § 5(a)(1) allegation was also added by the December 28 motion.

1926.1051(a) set forth in Citation 2, Item 2. I held a hearing on Citation 2, Item 1, and the alleged violation of § 5(a)(1)[5] set forth in Citation 2, Item 2, in Columbus, Ohio on June 28-30, 1993.

BACKGROUND

Respondent, Kokosing Construction Company, Inc., is a large general construction contractor headquartered in Fredericktown, Ohio (Tr. 33-35, 458). In March, 1992, Kokosing was engaged in renovation work at the Jackson Pike Wastewater Treatment Facility in Columbus, Ohio (Tr. 34-35). The work involved the construction of concrete walls, tanks and decking (Tr. 35). Concrete formwork was used in the wall construction process in order to retain and shape the concrete walls being poured (Tr. 36). Among others, Kokosing employed Symons Steel-Ply formwork, Symons Versi-Form formwork and a plate girder system of formwork at this worksite (Tr. 37).[6] Concrete forms used in this construction ranged from six inches to between 38 and 40 feet high (Tr. 37). Most of the forms were 26.5 feet high (Tr. 36).

Symons Steel-Ply formwork is a common type of formwork employed in the concrete construction industry (Tr. 336-337). Symons Steel-Ply formwork consists of individual plywood panels surrounded by steel "webbing." The steel webbing, which protrudes out approximately one and three-quarter inches from each panel, provides support to the

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[5]On June 16, 1993, the Secretary moved to amend the alleged violation of the general duty clause by suggesting ladders as an additional means of abating the alleged fall hazard.

[6]There are a number of concrete formwork manufacturers, including Symons, Redi-Radius and Efco (Tr. 55). A plate girder system is composed of parts from different formwork manufacturers (Tr. 37).

formwork panels (Tr. 53). Forms are constructed on the ground by connecting individual panels together into so-called "gangs" with pins and wedges. Further support and rigidity for a formwork gang is provided by "walers" and "strongbacks" (also referred to as "stiffbacks"). Walers are horizontal members consisting of two by four or two by six lumber that run the length of a formwork section (Tr. 39). Strongbacks are steel members that run vertically the height of a formwork section (Tr. 40). Once a gang of panels is connected together, it is set in place by a crane (Tr. 42-43).[7]

Although a substantial number of pins and wedges are used to connect the plywood panels together on the ground, once a gang section is placed, it is necessary to insert more pins and wedges for added support (Tr. 44-45). This process is commonly referred to as "pinning" (Tr. 44, 48). Once the concrete is poured and set, the formwork sections are removed from the poured wall. The process of removing the concrete formwork is commonly referred to as "stripping" (Tr. 45). The stripping process necessitates the removal of many of the pins and wedges on the formwork section prior to the removal of the section from the poured concrete wall (*Id*). Pinning and stripping operations are performed by carpenters.

Concrete is poured to form a wall only after the formwork sections are flown into place and sufficiently secured. Laborers, as opposed to carpenters, perform the task of pouring the concrete from scaffolding affixed to the top of the formwork (Tr. 48). The scaffolding is constructed and removed by the carpenters during the pinning and stripping operations (Tr. 48-50).

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[7]For each wall that is poured, two individual gangs are required. These are connected by wall ties (Tr. 47-48).

Respondent's carpenters routinely climb the formwork during pinning and stripping operations (Tr. 45). Typically, they climb the formwork in the vicinity of strongbacks and move across the formwork section to install or remove pins, wedges, and scaffolding (Tr. 52). While climbing, the carpenters hold onto the strongbacks, where possible, and position their feet on the webs or walers (Tr. 116). In the absence of a strongback, the carpenters hold onto the webs (Tr. 117).

As a method of fall protection, Kokosing provides carpenters with a safety belt equipped with an 18 inch rebar chain assembly and a hook positioning device (Tr. 51). However, Kokosing requires the use of this equipment only when employees are in stationary work positions on the face of the formwork *Id.* While climbing and while moving from point to point on the formwork, employees are not protected against falls (Tr. 50-51).[8] Depending upon the height of the wall being formed at the Jackson Pike site, employees were routinely exposed to falls of between ten feet and thirty feet (Tr. 45, 134-135).

On the morning of the accident, a crew consisting of Dave Jarvis, Gary Logan, and Dwight Holley, was stripping the north and west walls from 7:00 a.m until 11:30 a.m., the approximate time of the accident (Tr. 186). Mr. Lowe's investigation revealed that a

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[8]Apparently, OSHA has recognized that such positioning devices are not suitable for use while moving about on the formwork. In its Notice of Proposed Rule Making, "Safety Standards for Fall Protection in the Construction Industry," 51 Fed. Reg. 42718 Nov. 25, 1986, OSHA defined a "positioning device system" as a "body belt or body harness system rigged to allow an employee to be supported on an elevated vertical surface, such as a wall, and work with both hands free while leaning backwards." Proposed § 1926.500, 51 Fed. Reg. at 42737. The comment on this definition states that it is a new term intended to "identif[y] a piece of equipment used in construction which allows an employee to work with both hands free while ... standing in such a way (such as leaning backward) that a fall could result." 51 Fed. Reg. at 42721. The comment on proposed § 1926.501(b)(5), which would require the use of safety nets, body belt/harness systems, or positioning device systems, states that "positioning devices are essentially body belts which are attached by short lanyards to the work surface, and which allow the worker to perform a job with both hands free." This comment notes that the lanyard varies in length from nine to 18 inches. 51 Fed. Reg. at 42722.

section of unprotected reinforced steel (commonly referred to as rebar) was located within inches of the southern edge of the west wall of the formwork section (G-2). Prior to falling, Holley had been in the process of removing a scaffold bracket that was located within 18 inches of the southern edge of the west wall, about 24 feet from ground level (Tr. 184). Holley landed in the immediate vicinity of the exposed rebar (Tr. 201). Although Holley was not impaled by the unprotected rebar, the scaffold bracket that was attached to Holley's safety belt at the time of the fall, ended up in the unguarded section of rebar (Tr. 246-247, G-2).

DECISION

I. Alleged Violation of § 5(a)(1) -- Fall Protection

In order to establish a 5(a)(1) violation, the Secretary must prove that: 1) the employer failed to render its workplace free of a hazard, 2) the hazard was recognized by the employer or generally within the employer's industry, 3) the hazard was causing or likely to cause death or serious physical harm, and 4) there was a feasible means by which the employer could have eliminated or materially reduced the hazard. *Secretary v. Waldon Healthcare Center*, 16 BNA OSHC 1052, 1058 (Rev. Comm. 1993).

A. Existence of a Recognized Hazard

The Secretary has addressed the first two elements - existence of a hazard at the worksite and recognition of that hazard by either the employer or the industry - together. He maintains that the existence of a fall hazard while moving about on the vertical face of formwork is clearly recognized by the industry. Thus his presentation on the existence of

a hazard at the worksite is subsumed within his presentation on industry recognition of that hazard. In support of his position, the Secretary makes the following points.

1. The Compliance Officer's Testimony

The Compliance Officer, Mr. Lowe, contacted Symons, the manufacturer of the formwork, and was told by the director of product development, Bob Flathau, that climbing the formwork as if it were a ladder was not a safe or recommended practice (Tr. 262-263). According to Mr. Lowe, the product literature for Symons Steel-Ply formwork recommended the use of work platforms as the preferred method of fall protection (Tr. 261-62).

Mr. Lowe testified that at the local carpenters' union training center, he found that the union trained its members to use scaffolds and/or ladders to access above ground work locations on formwork (Tr. 261). According to Mr. Lowe, the training center had a Symons Steel-Ply formwork training demonstration on site with scaffolds and ladders being used as the method to access above the ground points on the face of the formwork (Tr. 260).

Mr. Lowe cited § 7.4.4 of the American National Standards Institute (ANSI) A.10.9 (1983) in support of the conclusion that Respondent's work practice was inconsistent with safe industry practice (Tr. 256-257, G-7). Section 7.4.4 provides:

> When the forming and stripping operations of formwork cannot be done from the floor, ground, or other solid construction, ladders, scaffolds, or other approved means of access shall be used.

However, it does not elaborate on the term "other approved means of access." At the hearing, only Mr. King offered his opinion that climbing is not included in the term. (Tr.

345-47.) While the standard clearly prefers access to the face of the formwork by means of ladders and scaffolds, it does not affirmatively demonstrate that climbing the face of formwork is hazardous.[9]

Mr. Lowe's testimony concerning his contact with Symons and the carpenters' union is hearsay and was admitted over Respondent's objection. (Tr. 261, 262.) It is appropriate to admit a compliance officer's hearsay testimony concerning what he or she learned from employees and the employer in the course of an inspection of the latter's worksite. Indeed, if compliance officers were not permitted to so testify, it would be very difficult for them to defend decisions to issue citations. Because its representative accompanies the compliance officer on the inspection and is privy to many if not all conversations, the employer is in a position to protect its interests and to correct any misinformation.

However, the admissibility of a compliance officer's hearsay testimony concerning what he or she learned privately at a union training center and from the manufacturer of equipment is questionable. In such a situation, in order to protect its interest, the employer is forced to conduct discovery and call as a witness an entity which is not a party to the litigation, may be located at some distance, and may not be interested in furnishing information. Nonetheless, because Mr. Lowe's testimony does illuminate his reasons for issuing the citations, it is admissible. The circumstances surrounding Mr. Lowe's acquisition of the information he related and the fact that his testimony is hearsay dictate

[9]While Mr. King, testifying for the Secretary, indicated that the phrase "other approved means of access" does not include climbing, his conclusion was based on his assumption that, to be approved, a means of access must incorporate fall protection. (Tr. 345.) Thus, Mr. King justifies his interpretation by assuming the ultimate issue, that a hazard exists for which fall protection is necessary.

that this information cannot be accorded the same weight normally given a compliance officer's testimony concerning what he or she learned in the conduct of an inspection.

2. The Secretary's Expert Testimony

An industry expert, Richard King, and an agency expert, Steven Medlock, testified that allowing employees to climb and move from point to point on the face of vertical concrete formwork was against industry practice.

Mr. King is manager of safety and health for Black & Veatch and a member of the ANSI A.10 committee (Tr. 329-30). King audits construction sites on a weekly basis throughout the country (Tr. 319-324) and is familiar with the fall protection devices and mechanisms used while performing pinning and stripping operations on vertical concrete formwork (Tr. 331-332). He testified that safe work practice dictates the use of 100% fall protection when working on vertical concrete formwork (Tr. 337). Citing his work experience, ANSI A.10.9 (Tr. 345), and Rule 4.13 of the safety guidelines for vertical concrete formwork published by the Scaffold, Shoring and Forming Institute (SSFI), King concluded that Respondent's work practice of allowing employees to climb the formwork without fall protection was contrary to safe industry practice (Tr. 335).[10]

Kokosing asserts that the substance of Mr. King's testimony does not support the Secretary's conclusion that a recognized fall hazard exists when carpenters climb Symons

[10]King opined that Kokosing could have used a number of different fall protection methods such as double safety belts and lanyards (or double hooks), vertical lifelines, horizontal lifelines, retractable lifelines, rope grabs, scaffolds, mobile lift equipment, ladders and man baskets in conjunction with aerial lifts to ensure that carpenters were not exposed to fall hazards (Id). King's opinion was based on having personally observed all of these methods at one time or another in use on vertical concrete formwork, including Symons Steel-Ply, throughout the country (Tr. 331-32).

Steel-Ply panels. Kokosing is correct in that the bulk of Mr. King's testimony assumes that a fall hazard exists and addresses means to abate it. (See Tr. 334-47.) Mr. King addresses the question of the existence of a hazard only when comparing climbing formwork to climbing a ladder. (Tr. 344-45.) In that discussion, he states why he views the danger of slipping to be much greater on formwork than on a ladder.[11] Nowhere in his testimony does he address the question of whether falls have occurred from formwork with sufficient frequency to dictate the conclusion that a hazard exists.

Kokosing attacks Mr. King's reliance on Rule 4.13 of the safety guideline published by SSFI. That provision states: "Do not use form panels as a ladder." Mr. King interpreted this to mean that workers should not climb up and down vertical concrete formwork (Tr. 341, 344). Kokosing maintains that its Director of Safety, Mr. Curren, offered a more plausible interpretation of this standard: that the standard prohibits the use of single

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[11]In contrast, Mr. Willey, an experienced carpenter and foreman, stated that, given the choice, he preferred to climb Symons Steel-Ply formwork rather than a ladder to reach his work:

> Q [By Mr. Holman] As a carpenter, have you climbed ladders?
> A Yes.
> Q Have you climbed the face of the Symons Steel-Ply formwork?
> A Yes.
> Q If you compare your sense of safety and well being in climbing a ladder with climbing the Symons Steel-Ply form, which do you fell safer on?
> A I feel safer on the panels than I would a ladder because of its movement, or its flexibility and things.
> Q Could you be more specific with respect to why you feel safer?
> A When we're working, we carry our safety belt and our tool belt which may weigh 25, 30 pounds. If you are working on a ladder, and any extension ladder, if you've been up them, you'll know how they bounce and move around.
> If you go up the ladder and was to step off to the side or try to move, if there is no secure place for that ladder to sit, it wants to slip and slide. Our job is climbing form, I mean that's what we're accustomed to, I feel more comfortable on them.
> Q Which is more stable, and by that I mean more secure, solid when you climb it, the ladder of the formwork?
> A The formwork.

Tr. 100-01. Mr. Sellers, Kokosing's safety officer, expressed a similar opinion (Tr. 139), as did Mr. Jarvis, an experienced carpenter (Tr. 209-10).

formwork panels, propped up against an object, as a short step ladder to gain access to a higher elevation (Tr. 144-45).[12] Kokosing points to Mr. King's concession that, if the true meaning was that the face of the formwork should not be climbed, a clearer wording of the standard would be: "Do not climb formwork panels" (Tr. 378).

In addition, Kokosing asserts that Mr. King is not a credible expert because he:

had not observed the work practices of other contractors with respect to climbing and moving from point to point on Symons Steel-Ply formwork or any other type of vertical concrete formwork (Tr. 369);

could not identify Symons Steel-Ply formwork in a photograph (Tr. 383);

had never climbed concrete vertical formwork (Tr. 365);

had no training or knowledge in how to attach anchorage points to support a fall arrest system to Symons Steel-Ply formwork, or any other type of vertical concrete formwork (Tr. 354-55);

could not name the different types of vertical concrete formwork in use in the construction industry,[13] let alone describe the technical feasibility of the alternative fall protection methods suggested by the Secretary (Tr. 368);[14] and

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[12]Given that the configuration of single formwork panels does not seem to be conducive to use as a short step ladder, this does not appear to be a plausible interpretation.

[13] Mr. King's description of Symons steel formwork was only as extensive as stating that it "comes in a variety of sizes and different widths and different lengths" (Tr. 368). He admitted that he did not know the difference between a Symons Steel-Ply form, a Symons Maxi-form, and a Symons Versi-form (Tr. 383).

[14] While Mr. King has testified as an expert in construction management, he has never before been called upon to give an opinion in how to attach and rig fall protection systems to vertical concrete formwork (Tr. 371).

misrepresented his own credentials on his resume by stating that he had written several articles which were written by others and in which he was quoted (Tr. 362-65).[15]

While I do not believe that Mr. King's error in describing several of the articles as having been written by him as serious, his unfamiliarity with the details of various types of formwork, in particular Symons Steel-Ply formwork, substantially impairs his credibility as expert.

Mr. Medlock, like King, was qualified as an expert in fall protection (Tr. 405) and testified that Respondent's work practice ran counter to safe industry practice. Medlock stated that he had inspected two competitors of Respondent who were engaged in vertical concrete formwork, Shook Construction and Baker Concrete.[16] According to Mr. Medlock, the former's employees were working on the face of the formwork to which they gained access by ladders. They tied off by means of "... a safety belt with a lanyard, or rebar hooks, or Symons hooks once they got to that position from the ladder ...." The latter was building

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[15]Counsel for the Secretary points out that while three of the thirty-seven articles King identified on his resume were not written by him, he provided the technical information and paperwork for the authors and was quoted extensively.

[16]Mr. Medlock also referred to the safety manual of another competitor of Respondent, B.G. Danis (G-11, Tr. 418), and a front page photograph of the June 3, 1993 Cincinnati Enquirer (G-10) depicting an employee of Baker Concrete properly protected while working on the face of concrete formwork to support his opinion that Respondent's work practice was inconsistent with industry practice. (Tr. 409.) However, not only is the photograph hearsay, the copy of it in the record is not of sufficiently good quality to reveal the details of which Mr. Medlock spoke. Finally, Medlock noted that the state of Ohio provides fall protection training to contractors, free of charge, and that a portion of the training includes a slide presentation depicting employees working from vertical concrete formwork (although not Symons Steel-Ply) with proper fall protection (Tr. 423-25).

the formwork in place and using scaffolding to provide a platform from which workers had access rather than gang forming as Kokosing did in this case (Tr. 403-404).

Despite the fact that he had recently cited Baker Concrete for permitting its employees to climb formwork, Mr. Medlock represented that Baker Concrete does not permit vertical concrete formwork to be climbed.[17] Mr. Medlock conducted an inspection of Baker Concrete's worksite at the Northgate Mall in Cincinnati, Ohio, in January, 1993. (Tr. 405.) Because Mr. Medlock observed employees gaining access to scaffolding located on Symons formwork by climbing the formwork, he cited Baker Concrete for a violation of 29 C.F.R. § 1926.451(a) for failure to provide an access ladder. Following the filing of a complaint, a hearing was held and a decision issued by Judge Loye affirming this citation.[18] Baker Concrete defended, in part, on the ground that "... industry practice does not require the use of ladders on scaffolding which is being dismantled."[19] Judge Loye found that "*[w]ith management's tacit approval*, employees dismantling the scaffold ... climbed formwork webbing without fall protection."[20]

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[17] "Q [By Mr. Carney] Do you know what Baker Concrete's fall protection philosophy is with regard respect to vertical concrete formwork?

"A [Mr. Medlock] Most definitely. Their policy and procedure is that they do not allow vertical concrete formwork to be climbed, period." Tr.413.

[18] *Secretary v. Baker Concrete Construction Co.*, Docket No. 93-0606, January 14, 1994. The *Baker Concrete* decision was forwarded to me by counsel for the Secretary with the comment that the issues decided in that case are similar to the issues in this case. This prompted counsel for Kokosing to file a "Motion to Exclude from Consideration and the Record Communications to the Commission and Supplemental Authority That Were Not Presented on the Record or, in the Alternative, Motion for Leave to File Brief on New Arguments of Fact and Law Raised by the Secretary in Off-The-Record Communication to the Commission." Counsel's motion is based on the proposition that the communication of this decision to me was both off-the-record and *ex parte*. That communication was neither. The motion is denied.

[19] Decision, p.4.

[20] Decision, p.5, emphasis supplied.

Kokosing attacks the testimony of Mr. Medlock that both Baker Concrete and Shook Construction Company do not permit carpenters to climb the face of formwork without fall protection. Kokosing relies on the testimony of Mr. Willey, its foreman, who stated that he has worked for Baker Concrete and also that he observed the work practices of Danis-Shook[21] on the Jackson Pike site with respect to Symons Steel-Ply formwork (Tr. 88-90). He stated that these contractors' employees ascend and descend the formwork in the same manner and use positioning devices of a lesser quality than those used by Kokosing (Tr. 89-90).

Kokosing's safety director, Mr. Curren, stated that he also observed the contractors identified by Mr. Medlock, as well as many others, using positioning devices and safety belts on Symons Steel-Ply formwork in the same manner as Kokosing employees (Tr. 477-82).[22]

Mr. Jarvis, who has been employed as a journeyman carpenter since 1977, and who has worked for contractors such as Shook, Danis-Shook, B.G. Danis, and Dugan & Meyers (Tr. 179, 215-16), stated that every company for which he has worked performs vertical concrete formwork in the same manner as Kokosing and uses positioning devices with Symons Steel-Ply forms (Tr. 207, 220). The testimony of these witnesses is corroborated by Judge Loye's decision in *Baker Concrete, supra.* Mr. Medlock is not a credible witness.

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21 Danis-Shook is a joint venture between B.G. Danis and Shook Construction Company.

22 Specifically, Mr. Curren testified that he observed the practices of Mayhan, a large highway construction contractor, Rhulin, Great Lakes, Independence Construction Co., Danis and Shook, Valetta, and Baker Concrete, who all employed safety belts with positioning devices for working on Symons Steel-ply formwork (Tr. 477-82).

Even if deemed credible, like Mr. King's testimony, the bulk of Mr. Medlock's testimony does not support the Secretary's conclusion that a recognized fall hazard exists when carpenters climb Symons Steel-Ply panels. Rather, the bulk of Mr. Medlock's testimony assumes that a fall hazard exists and addresses means to abate it. (See Tr. 403-29). Mr. Medlock addresses the question of the existence of a hazard only when discussing the practical difficulties of climbing formwork (Tr. 413-15.)[23] Nowhere in his testimony does he address the question of whether falls have occurred from formwork with sufficient frequency to dictate the conclusion that a hazard exists.[24]

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[23]As noted in footnote 11, Kokosing introduced evidence to the contrary.

[24]Mr. Medlock did relate some statistical data, but the information he provided is not helpful. His testimony is as follows.

> Q [By Mr. Carney] Do you know of any statistics that have been compiled by the Occupational Safety and Health Administration to support that position?
> A I know statistics from two methods, one an article that I published, I don't know the correct terminology, I wrote it, I am the author, which referenced statistics of fatalities in construction related falls and there is the OSHA Occupational Database for falls.
> Portions of it deal with construction and its fall fatalities from 1985 to 1989. It is a published document of OSHA fatality information.
> Q Would that be entitled "Analysis of Construction Fatalities, the OSHA Database 1985 through 1989?"
> A Yes, thank you.
> Q Do you recall the statistics that relate to fall protection in the construction industry?
> A Yes.
> Q Would you care to relate those statistics to the Court?
> A 34 percent.
> MR. HOLMAN: I am going to object unless they relate to falls from vertical concrete formwork. In effect, we're talking apples against oranges. I am going to give you some examples if I need to go further.
> JUDGE FRYE: No, I don't think you need to go further. Do they relate to vertical concrete formwork?
> MR. CARNEY: There are some statistics that relate to concrete formwork.
> JUDGE FRYE: All right, well, let's confine ourselves to that then.
> MR. CARNEY: Your Honor, for the record, we're talking about fall hazards in the construction industry. It is not the Secretary's intention to have this limited to vertical concrete formwork.
> The fall protection devices that are out there, the hazards associated with falls in the vertical concrete formwork, they are no different than working --
> JUDGE FRYE: All that is before me is a vertical concrete form, a Symons form and I am not particularly interested in hearing statistics that apply to other sorts of hazards such as falls from
> (continued...)

The Secretary suggests that Kokosing's safety audit records suggest that it recognized that its work practice did not comply with industry standards. A March 16, 1992, safety check of Mr. Willey's operation at the Jackson Pike worksite noted that forms were not to be used as ladders and that shorter ladders for better access to work areas were needed (G-5). Mr. Sellers, who performed the safety check, testified that the need for shorter ladders was not related to access to the vertical formwork (Tr. 142).

3. Discussion

The Secretary's case for the existence and recognition of a hazard is overshadowed by the fact that, at least in 1986, OSHA recognized that the use of positioning devices for fall protection was a suitable and accepted practice in the vertical concrete formwork industry. The 1986 Proposed Rule regarding fall protection would require employers to protect employees "on the face of formwork" by a body belt/harness system,

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[24](...continued)
scaffolds and things of that nature.
We're concerned here about a Symons form that was climbed without any fall protection. I think you had better limit your presentation to falls from vertical concrete formwork.
BY MR. CARNEY:
Q Mr. Medlock, are you familiar with the statistics as they relate to the concrete formwork industry?
A Yes.
Q How many -- do you have a percentage of the falls in the construction industry for the time period 1985 through 1989 in the concrete formwork industry?
A That relate to what?
Q Falls and deaths?
A Fall fatalities is three percent.
Q Of all --
A Fatalities from falls from concrete formwork.
JUDGE FRYE: Is three percent of what?
THE WITNESS: Three percent of the fatalities from 1985 to 1989, three percent of the fatalities relating to falls were in concrete formwork --
JUDGE FRYE: All right, three percent of all of the fatalities from falls are related to falls from concrete formwork?
THE WITNESS: Yes, sir.
JUDGE FRYE: All right.
MR. CARNEY: I have no further questions, Your Honor.

safety net system, or positioning device system. Proposed § 1926.501(b)(5), 51 Fed. Reg. No. 227, 42718, 42737 (Nov. 25, 1986).

Proposed § 1926.502(c) and (d) would set criteria for safety nets and body belt/harness systems and proposed § 1926.502(e) would set criteria for positioning device systems. These criteria make it clear that the first two systems are designed to protect workers in all circumstances, while the last is designed to protect workers only when they are in a stationary position, not while they are moving across the face of formwork.[25] The Statement of Considerations accompanying the proposed rule confirms this. It notes that

> Positioning devices are essentially body belts which are attached by short lanyards to the work surface, and which allow the worker to perform a job with both hands free. Because of the short length of the lanyard, ... OSHA believes there is no significant fall hazard when positioning devices are used.

51 Fed. Reg. No. 227, at 42722 (Nov. 25, 1986). Given that the proposed standard requires the use of nets, body belt/harnesses, *or* positioning devices by employees who are on the face of formwork, it appears that in 1986 OSHA did not recognize that a hazard was posed by moving about on vertical formwork without fall protection.

This case is governed by *Southern Ohio Building Systems, Inc., v. OSHRC*, 649 F.2d 456, 458-59 (6th Cir. 1981):

> Both witnesses for the Department of Labor appear to have treated the burden of the Secretary as requiring only a showing that the hazard of falling

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[25]Proposed § 1926.502(c)(1) requires that safety nets be installed as close as possible beneath the walking/working surface on which employees are working. Proposed § 1926.502(d)(13) and (14) indicate that body belt/harness systems are designed to be attached to vertical or horizontal lifelines. Proposed § 1926.502(d)(4) indicates that no more than six feet of free fall (the distance an employee may fall before the system begins to arrest the fall - proposed § 1926.500) may be allowed by a body belt/harness, thus providing sufficient slack to move about on formwork. In contrast, proposed § 1926.502(e)(1) limits the free fall permitted by a positioning device to two feet, thus severely limiting the employee's ability to move about on the face of the formwork.

> from an elevated workplace is likely to cause death or serious injury. There was no attempt to show that the particular activity referred to in the evidence and found by the administrative law judge to be a violation "working at an eave of the roof without any fall protection" is a recognized hazard. Southern Ohio's witnesses disclaimed any knowledge that such a hazard was recognized by it or others in the roof construction industry. The Department of Labor introduced no proof which could be held to satisfy the objective test of whether such a hazard is recognized in the industry. All that was offered was testimony by the two compliance officers that they had seen various protective devices used in "similar construction" on several occasions. Careful examination of the transcript reveals that "similar construction" referred to steel structures generally without reference to the actual height and slope of roof and other dimensions of the Southern Ohio building. The testimony of these witnesses about serious fall accidents, lacking any details as to conditions surrounding the incidents or their frequency, was not sufficient to support a finding that a hazard should have been recognized. This testimony fell far short of establishing that the roof construction industry recognized a hazard to employees working on the eaves of a roof having a 1 inch in 12 slope, sixteen feet above the ground, without "any fall protection."

Here, the Secretary's two expert witnesses "... treated the burden of the Secretary as requiring only a showing that the hazard of falling from an elevated workplace is likely to cause death or serious injury."[26] With one exception, their testimony that a hazard exists was based solely on the uncontested proposition that a fall from the places on the formwork at which Kokosing's employees were moving would cause death or serious injury. It did not address whether such falls were sufficiently likely to occur so that they should be considered a hazard.[27] Using the approach taken by these witnesses, one would

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[26]*See also Secretary v. Kastalon Inc. and Conap Inc.*, 12 BNA OSHC 1928, 1932 (Rev. Com. 1986) ("... in order to prove the existence of a hazard within the meaning of the general duty clause, the Secretary cannot merely show that there may be some degree of risk to employees. He must show, at a minimum, that employees are exposed to a significant risk of harm.") *Cf. Industrial Union Department, AFL-CIO v. American Petroleum Institute,* 448 U.S. 607, 644, 100 Sup Ct. 2844, 2865 (1980) ("... Congress intended, at a bare minimum, that the Secretary find a significant risk of harm and therefore a probability of significant benefits before establishing a new standard.")

[27]Certain limited statistical data were tabulated and presented by Mr. Curren. These data tend to support the conclusion that employees are not exposed to a significant fall hazard when climbing and moving

(continued...)

conclude that fall protection is required for employees using ladders to reach their work stations on the formwork because a fall from a ladder would also result in death or serious injury. However, the Secretary urges that ladders are a feasible means to abate the fall hazard.

The exception concerns these witness' testimony that the construction of the forms is such that adequate hand and footholds are not available. The webbing which the carpenters must grasp with their hands[28] and feet protrudes only one and three-quarters inches from the plywood panel which retains the poured concrete. Consequently, these witnesses' concluded that climbing the formwork is more hazardous than climbing a ladder. However, this conclusion is not entitled to much weight for the following reasons. First, aside from other considerations bearing on credibility, while both witnesses were qualified as experts in fall protection which arguably might include the hazards of climbing formwork, neither had ever climbed any kind of formwork and one, Mr. King, could not identify Symons Steel-Ply formwork. Nothing in their qualifications indicates that they have sufficient familiarity with Symons Steel-Ply formwork that would enable them to discuss the hazards of climbing it knowledgeably.

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[27](...continued)
horizontally on vertical concrete formwork (Tr. 505-11). Based upon 662,678 man-hours of vertical concrete formwork, these data show that Kokosing has a lost-time incident rate of 1.5, compared to a national average of 5.0, due to falls from the formwork (Tr. 506-07). Further, the accidents investigated by Mr. Curren involving Kokosing employees were typically due to either human error or disability or equipment failure (Tr. 508-10), not to climbing or moving horizontally on the formwork.

[28]As noted above, the carpenters generally ascend the formwork along a stiffback which affords a good hand grip. However, when moving laterally, the carpenters must grip the webbing with their hands.

Second, Kokosing's carpenters testified that they preferred to climb the formwork rather than a ladder. They based their conclusion on the facts that the ladder tends to be less stable and that it is difficult to move from the ladder to the formwork.[29] These facts are undoubtedly true. The Secretary's witnesses lacked sufficient familiarity with the nature of the carpenters' work on the formwork to address these facts intelligently. (See Tr. 346-47, 413-15.)

The Secretary's evidence supporting recognition of the hazard involved in climbing Symons Steel-Ply formwork is equivocal. Clearly, Kokosing does not recognize that climbing the formwork constitutes a hazard. The evidence supporting industry recognition comes from Mr. Lowe, Mr. King, and Mr. Medlock. Mr. Lowe's testimony concerning what he was told by Symons and union training officials is hearsay and entitled to little weight. Mr. King could not identify Symons Steel-Ply formwork, and as a result his testimony that other firms employ total fall protection for their employees working on it must be discounted. Mr. Medlock is not a credible witness. Thus, "[t]he testimony of these witnesses about serious fall accidents, lacking any details as to conditions surrounding the incidents or their frequency, was not sufficient to support a finding that a hazard should have been recognized." 649 F.2d at 459. Moreover, Judge Loye, in his decision in *Baker Concrete, supra,* recognized that at least Baker Concrete followed the same practice as Kokosing.

While the ANSI Standard and the SSFI Rule tend to support the Secretary's position that a recognized hazard exist, they are insufficient by themselves to satisfy the Secretary's burden. The ANSI Standard does not definitively address the question because

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[29]They were concerned with stability because they must carry 25 to 30 pounds of tools and equipment around their waists which causes the ladder to bounce and move around (Tr. 101, 163-64, 209-10).

it refers to the use of "ladders, scaffolds, or other approved means of access..." without elaborating on what is included within the phrase "other approved means of access." Only Mr. King testified that climbing the formwork was not an approved means of access. As noted in footnote 9, Mr. King justified his position on the assumption that, to be approved, a means of access must include fall protection. Mr. King assumed an affirmative answer to the ultimate issue, does a fall hazard exist, without providing any support for that assumption. Consequently, his testimony on this point is of little value.

The SSFI Rule addresses the issue more directly in that it states a prohibition on the use of form panels as a ladder. However, this statement does not resolve the issue. First, as noted above, there is a dispute between the parties over whether this prohibition applies to climbing formwork to reach a work station on it. Second, assuming that it does apply to that practice, it must be noted that the prohibition is contained in the section dealing with scaffolds attached to formwork. It is conceivable that the accessing of scaffolds by climbing the formwork might be hazardous because of considerations which are different from those entailed in climbing the formwork.[30] Third, the Secretary provided very little background with regard to this Rule or the Institute which promulgated it.[31] Therefore, in addition to inadequately addressing the exact meaning of the Rule, the record does not indicate to what extent the Rule is currently followed in the industry.

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[30]For instance, given that scaffolds are attached to stiffbacks and may well run the length of the formwork, it might not be possible to access the scaffold from the formwork unless an opening were provided. Whether such an opening could be provided would appear to be problematical.

[31]Mr. King testified that the Scaffolding, Shoring, and Forming Institute is a member of the ANSI A-10 committee, that Rule 4.13 has been in existence since the early 1980s, and that the document which contains the Rule is generally known within the industry. Tr. 340-41.

In light of the foregoing, I conclude that the Secretary has not met his burden of establishing that a recognized hazard exists.

B. The Hazard Was Causing or Likely to Cause Death or Serious Physical Harm

The evidence established that Kokosing's employees moved about on the formwork at heights between 10 and 30 feet without fall protection (Tr.45, 50-51, 134-35). The Secretary states that it cannot be seriously disputed that a fall from a height of more than 10 feet can cause death or serious physical injury. Indeed, in its post trial brief, Kokosing did not contest this fact. The Secretary has demonstrated that if the hazard - a fall - were to occur, it would likely cause death or serious physical harm.

C. There Was a Feasible Means by Which Kokosing Could Have Eliminated or Materially Reduced the Hazard - The Parties' Positions

The Secretary maintains that feasible means to materially reduce or eliminate the fall hazard existed. King testified that Kokosing could have employed double safety belts and lanyards (or double hooks), vertical lifelines, horizontal lifelines, retractable lifelines, rope grabs, scaffolds, mobile lift equipment, ladders, or man baskets in conjunction with aerial lifts, and that he had observed all of these applications utilized in the field (Tr. 331-32). The Secretary produced the product report for the Symons Steel-Ply safety eye (G-12; Tr. 636-638) which states that the safety eye was field tested and exceeded OSHA's 5400 pound load bearing requirements. The Secretary urges that the product report corroborates

the testimony of Mr. King and discredits Mr. Curren's testimony that it is not feasible to anchor lifelines to Symons Steel-Ply formwork.

Kokosing maintains that the Secretary has not presented any evidence that supports his position that the fall protection methods he identified were technically feasible for use with Symons Steel-Ply formwork under the conditions existing at the Jackson Pike site. Kokosing attacks the Secretary's testimony on the grounds that neither the Compliance Officer nor Mr. King had climbed vertical concrete formwork, and neither could describe the unique characteristics of Symons Steel-Ply formwork or how these methods feasibly could be used. Kokosing asserts that the evidence clearly demonstrates that the only feasible method of fall protection -- the safety belt and positioning device -- was in use by Kokosing employees.

Kokosing believes that ladders were not a feasible means of fall protection for use with Symons Steel-Ply formwork under the cited conditions, and actually would present a greater hazard to employees.[32] Kokosing's foreman stated that ladders are cumbersome and awkward, and that he has never used ladders when pinning or stripping vertical concrete formwork (Tr. 61-62).

Mobile scaffolds, scissor lifts, articulating or rotating boom work platforms were not feasible because the work area was congested, with only ten to fifteen feet between

[32]Kokosing's Director of Safety, Mr. Curren, testified that the use of ladders would require employees to be "... constantly going up and down these ladders and readjusting them at every tie elevation, and also, the reaching around the ladder ...." With respect to the last point, he testified that the OSHA standard (29 CFR § 1926.1053(b)(5)(i)) that requires that the horizontal distance between the top support and the foot of the ladder equal approximately one-quarter of the working length of the ladder would place the working surface 33 inches from an employee working three feet from the top of the ladder. It would, however, place that surface only nine inches away. See Tr. 512-13.

the west and east walls. Kokosing's foreman also testified that he has never used or observed the use of scissor lifts or other mobile lift equipment during pinning and stripping operations on vertical concrete formwork (Tr. 61). Indeed, Mr. Curren stated that, because this particular site was congested, it was impossible to use a rotating or articulating boom work platform (Tr. 513).[33] Additionally, he stated that, while mobile scaffolds could have been built in the work area, they could not be moved more than six inches without becoming obstructed by the superstructure of the formwork, the turnbuckles, or the adjacent wall (Tr. 514).

Lanyards and vertical, retractable, or horizontal lifelines were not feasible because no anchorage points existed on Symons Steel-Ply panels for attaching them (Tr. 65), nor were there useable anchorage points on the surrounding structures.[34] Kokosing's safety director stated that there is no engineered system or technology for attaching a lifeline system to Symons Steel-Ply formwork (Tr. 513). Further, he stated that lifeline systems could not be used by anchoring the system to the stiffbacks, which would not support the 5400-pound safe working load required under OSHA regulations (Tr. 519). Kokosing's foreman stated that the use of such devices with Symons Steel-Ply formwork is dependent upon the existence of suitable anchorage points in surrounding structures (Tr. 72-73).

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[33]Mr. Curren stated that the only way to use an elevated work platform in the area in question would have been to swing in a work platform on a crane; however, the area was so congested that the work platform could not be moved around to the necessary work locations (Tr. 513-14).

[34]Mr. Curren determined that independent anchorage points could not be placed in the concrete decking on the other side of the formwork wall (Tr. 587-88). Retractable lifelines would not be adequately supported by running them up the stiffbacks and over the wall before the concrete is in place (Tr. 587-88). Most likely, such a method is technically infeasible even after the pouring of the concrete (Tr. 587-88).

In response to the Symons Product Report on the Safety Eye (G-12), Mr. Curren stated that he had telephoned Symons and verified that the 5400 pound tensile strength applied to the clip only, not of the Symons Steel-Ply formwork to which the clip would be anchored (Tr. 589, 652). Mr. Curren explained that while the Symons clip may meet or exceed the 5400 pound standard, the lifeline system of which it is a part is only as strong and secure as the weakest portion of the form system to which it is attached (Tr. 519-22, 589). Kokosing believes that the Symons Steel-Ply formwork, comprised of plywood and ten-gauge steel, will not withstand the 5400 pound load required by OSHA standards (Tr. 489-93).

The Secretary has failed to demonstrate that there was a feasible means of providing fall protection to carpenters climbing Symons Steel-Ply formwork at Kokosing's worksite. The evidence produced by the Secretary did not establish that ladders or elevated work platforms could be used at this congested site, nor did it demonstrate that there were suitable anchorage points for fall arrest systems.[35]

For the foregoing reasons, Citation 2, Item 2, is vacated.

II. Alleged Violation of 29 C.F.R. § 1926.701(b) -- Failure to Guard Protruding Concrete Reinforcing Bars

The standard in question, 29 C.F.R. § 1926.701(b), provides that:

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[35]The parties' evidence on the last point, to the extent that it pertained to anchorage points on the formwork itself, is directly conflicting. These conflicts have come about in part because both parties have cited Symons for their positions without having produced a representative of Symons to testify directly. It is entirely possible that the parties' conflicting positions are the result of their different interpretation of the same information. These conflicts might have been avoided had the source of the information been presented. In any event, because it is hearsay, this evidence is entitled to little weight.

> All protruding reinforcing steel, onto and into which employees could fall, shall be guarded to eliminate the hazard of impalement.

The parties disagree with regard to whether an employee could have fallen onto the protruding rebars and, if so, whether Kokosing reasonably should have been aware of that fact.

A. The Secretary's Position

In the Secretary's view, the facts demonstrate employee exposure to the cited condition. The exposed rebar in question was within inches of the southern edge of the west wall formwork that was in the process of being stripped on the morning of the accident (Tr. 81, 172, 199; G-2). In the process of stripping, Holley, Jarvis and Logan climbed over the formwork (Tr.185-87). The scaffold bracket that Holley was in the process of removing at the time of his fall was 16 to 18 inches from the south edge of the west wall of the formwork section (Tr. 194). Although he himself was not impaled on the unprotected rebar, the scaffold bracket that was attached to Holley's positioning device was. (Tr. 246-47, 518.) Jarvis testified that Holley came within four feet of the exposed rebar. (Tr. 200-01.)

The Secretary argues that common sense dictates that a person working within 12 to 18 inches from the south edge of the west wall at a height of 24 feet above ground could have fallen, at least partially, onto the exposed rebar adjacent to the edge of the wall. Under these circumstances, the Secretary maintains that Kokosing violated 29 C.F.R. § 1926.701(b).

The Secretary also argues that, with the exercise of reasonable diligence, Kokosing should have known of the cited condition. First, the condition was in plain view. Second, the condition existed the whole of the morning of the accident. Third, the crew

exposed to the condition had been observed less than six weeks earlier working above exposed rebar. The Secretary believes that a prudent foreman exercising reasonable diligence would have known of the exposed rebar and corrected the situation.

B. Kokosing's Position

Kokosing concedes that the rebar adjacent to and behind the west wall was unguarded on the morning of March 20, 1992. It further admits that, under Kokosing's aggressive rebar policy, the protruding rebar behind the west wall would have been covered if observed. Kokosing takes the position that the standard requires employers to guard rebar to eliminate the hazard of impalement when employees realistically could fall into the protruding rebar, and argues that there was no possibility of any employees falling into the rebar in question.

Kokosing correctly points out that the Secretary offered no evidence of employees working directly over the protruding rebar or immediately adjacent to it. Kokosing maintains that the Secretary's contention that its employees were exposed to a hazard of impalement is based only upon inferences and speculation as to where employees might have been while working on the west wall (Tr. 240-42). It points out that the conclusion that employees working toward the edge of the formwork were exposed to an impalement hazard is based upon Mr. Lowe's unsubstantiated and unmeasured observation that "it is obvious by looking at [the rebar]" (Tr. 245)[36] and is inferred from the spot where Mr. Holley landed (Tr. 240).

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[36]Mr. Lowe has a degree in biology and chemistry and, by his own admission, has no understanding or background in the field of physics, statics, dynamics, or force analysis, or the formwork operations being conducted by Kokosing employees (Tr. 275, 284, 300).

Kokosing presented two experts in physics, who opined that no employees working on the wall could have fallen into the rebar, and that no impalement hazard existed. Mr. Douglas Ruth, opined that, even if an employee had fallen from a position "very close to the southern edge of the western wall," he would not have fallen into and been impaled upon the rebar because gravity would pull him straight down, and other forces would push him back out from the wall (Tr. 621-22). Mr. Ruth testified that Mr. Holley could not have fallen into the rebar from the location he occupied immediately before his fall, because the forces operating on his body would have caused him to fall straight down or back slightly:

> depending on how he is pushing with his feet because whatever forces were acting on him at the moment his support let go, are the only forces that can cause him to move in one direction or another. There are no forces that can cause him to go backwards--through the wall, or around the wall (Tr. 613).[37]

In Kokosing's view, Mr. Curren, the other physics expert, offered a plausible explanation as to how Mr. Holley could have landed approximately four feet from the rebar. Mr. Curren opined that the scaffold bracket, which was still attached to Mr. Holley's eighteen-inch rebar chain assembly, and Mr. Holley were rotating as they fell (Tr. 518). Mr. Curren believes the scaffold bracket grabbed the rebar and pulled Mr. Holley closer to the rebar (Tr. 518).

Kokosing makes the following argument with respect to whether it knew or should have known about the protruding rebar. It maintains that the undisputed facts demonstrate

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[37]Mr. Garry Curren, another expert in physics, confirmed Mr. Ruth's opinion that Mr. Holley could not have fallen into the rebar. Mr. Curren explained,

> Based on mechanics, when a body is in motion, it tends to stay in that same direction of motion unless an opposite force vector is acting upon it. So, what I am say there is, if he fell from the wall, he either would have fell [sic] straight down, or back (Tr. 518).

that Mr. Willey, the foreman, was not present in the immediate work area on the morning of March 20, 1992, and did not observe the uncovered rebar standing behind the west formwork wall. Further, Mr. Jarvis stated that, other than Mr. Willey's crew, no employees were in the work area to observe the fact that the rebar was uncovered. Moreover, Kokosing urges that the rebar was not in plain view, as evinced by the fact that no one noted that it was uncovered prior to Mr. Holley's accident.

Further, Kokosing asserts that the Secretary offered no evidence suggesting that it did not exercise reasonable diligence with respect to the cited condition. It points to its aggressive safety policy requiring the covering of all rebar, even in circumstances where employees are not in a position to fall into or onto protruding rebar. Kokosing maintains that its rebar policy ensures that rebar will be covered whenever it is anticipated that work will move toward an area where rebar is located.

Finally, Kokosing believes that the fact that its safety officer observed this crew working over uncovered rebar six weeks earlier evinces a conscientious attitude on its part. The earlier observation of Mr. Willey's crew working over rebar does not, in Kokosing's view, indicate that it knew that the protruding rebar at issue here posed any hazard to its employees. Kokosing points out that construction sites are fast-changing environments, and an employer cannot be deemed to have knowledge of a cited condition based upon an observation six weeks earlier.

C. Discussion

The Secretary has established that Kokosing violated 29 C.F.R. § 1926.701(b). Kokosing's position that an employee could not have fallen into or onto the protruding rebar fails to take into account the fact that there are many variables which potentially can affect the trajectory of a falling employee. Mr. Ruth took only two into account. The fact that the scaffold bracket to which Mr. Holley's positioning device was attached ended up in the rebar illustrates that there are more variables than those considered by Mr. Ruth. (See Ex. G-2.) It must be assumed that the forces acting on the bracket were essentially the same as those acting on Mr. Holley. Yet despite Mr. Ruth's opinion that there are no forces which would cause a body to move around the wall and onto the rebar, the bracket obviously did. If Mr. Curren's opinion that the bracket and Mr. Holley were rotating as they fell is correct, it would seem fortuitous that the bracket, rather than Mr. Holley, was impaled on the rebar.

Moreover, Kokosing's position notwithstanding, the photographic exhibits show that the rebar was in plain view. (See Ex. G-2 and G-3.) In the rapidly changing environment of a major construction project such as this, it is incumbent on employers to check current work areas for hazards such as this at least once daily. The fact that the protruding rebar went undetected indicates that Kokosing was not adequately performing such checks.

D. Willfulness

The Secretary maintains that the violation of 29 C.F.R. § 1926.701(b) was willful. He points out that the Review Commission has consistently held that a violation is willful if "it was committed voluntarily with either an intentional disregard for the requirements of the Act or with plain indifference to employee safety." *Calang Corp.*, 1990 CCH OSHD ¶

29,080 (No. 85-319, 1990). A showing of evil or malicious intent or motive is not necessary to establish a willful violation. *Empire Detroit Steel Division v. OSHRC,* 599 F.2d 378 (6th Cir. 1978). A willful violation is differentiated from other types of violations by a "heightened awareness...of the illegality of the conduct or conditions....and by a state of mind...conscious disregard or plain indifference..." (*Id*).

The Secretary regards the failure to protect against unguarded rebar was willful since Kokosing knew there was an OSHA standard that addressed the violative condition, had a work rule that called for the guarding of all protruding rebar, empowered and expected its employees to take corrective action when conditions such as exposed rebar were present, yet allowed employees to work above protruding rebar. He cites the fact that on February 5, 1992, six weeks prior to Mr. Lowe's inspection, Kokosing's safety officer observed Eric Willey's crew working above unguarded, protruding rebar. Notwithstanding Kokosing's policy of progressively disciplining employees for violating company safety rules, nobody was disciplined for the February 5, 1992 incident. Likewise, even though Kokosing acknowledged that the rebar Holley fell near should have been guarded, nobody was disciplined for not ensuring that it was. The Secretary believes that the record reflects a plain indifference to employee safety on the part of Kokosing which rises to the level of a willful violation of 29 C.F.R. § 1926.701(b).

The Secretary has not shown that the violation was committed "... voluntarily with either an intentional disregard for the requirements of the Act or with plain indifference to employee safety." *Calang Corp., supra.* In essence, the Secretary's position rests entirely on Kokosing's failure to discipline employees following the two instances reflected in this record

in which protruding rebar was discovered. This is insufficient evidence to support such a characterization of this violation. However, because a fall into or onto the protruding rebar clearly would cause death or serious injury, the violation is serious.

E. Penalty Assessment

In computing the penalty, Mr. Lowe rated the violation high severity, greater probability because of the fact that a fall into the rebar would result in death or very serious injury and because he regarded a fall from the formwork to be probable. This resulted in a gravity-based penalty of $5,000. Mr Lowe gave no credit for size because Kokosing employs over 250 persons, no credit for history because Kokosing had been cited for two serious and one willful violation at a job site in Smithfield, Ohio, in February, 1990, and no credit for good faith because he regarded the violation as willful. He multiplied the $5,000 by seven to account for the willful nature of the violation. (Tr. 249-52.)

Although Mr. Lowe did not elaborate on them, gravity includes a number of factors. These include

> ... the number of employees exposed to the hazard, the duration of their exposure, the precautions taken to prevent injury, and the degree of probability that an injury would occur. *Turner Co.*, 4 BNA OSHC 1554, 1567, 1976-77 CCH OSHD ¶ 21,023 (No. 3635, 1976), *rev'd on other grounds*, 561 F.2d 82 (7th Cir. 1977).

Secretary v. S.G. Loewendick & Sons, Inc., 16 BNA OSHC ____ (Rev. Com. August 9, 1994). Here three employees were exposed for one-half day. No precautions were taken to prevent injury. Given the evidence that industry practice is to climb Symons Steel-Ply formwork without fall protection and the lack of evidence that falls from it have occurred

as a result, as well as the fact that the rebar was located in a place where an employee was unlikely to fall, I conclude that the probability of a fall onto the protruding rebar was low.

Although I have concluded that there is no evidence that Kokosing's conduct was willful, I also conclude that no credit should be given for good faith. The violation is one that would not have occurred had Kokosing's safety check procedure functioned properly. Moreover, this crew was found to be working over protruding rebar six weeks earlier. Consequently, credit for good faith is not appropriate. Mr. Lowe indicated that Kokosing's size and past history were such as to make credit for those factors inappropriate, and his testimony is uncontradicted. I conclude that a penalty of $4,250 is appropriate.

III. Conclusions of Law

A. Respondent Kokosing Construction Co., Inc., was at all times pertinent hereto an employer within the meaning of Section 3(5) of the Occupational Safety & Health Act of 1970, 29 U.S.C. Section 651-678 (1970).

B. The Occupational Safety & Health Review Commission has jurisdiction of the parties and the subject matter.

C. Respondent Kokosing Construction Co., Inc., was not in violation of § 5(a)(1) of the Occupational Safety and Health Act of 1970, 29 U.S.C. §§ 651-678, as amended, as charged in Citation 2, Item 2.

D. Respondent Kokosing Construction Co., Inc., was in serious violation of the standard set out at 29 CFR § 1926.701(b) as charged in Citation 2, Item 1. A penalty of $4,250 is appropriate.

IV. ORDER

Citation 2, Item 1, is affirmed as a serious violation of the Occupational Safety and Health Act of 1970, 29 U.S.C. §§ 651-678, as amended. Citation 2, Item 2 is vacated. A total civil penalty of $4,250 is assessed.

JOHN H FRYE, III
Judge, OSHRC

Dated: SEP - 8 1994
Washington, D.C.