



United States of America  
**OCCUPATIONAL SAFETY AND HEALTH REVIEW COMMISSION**  
721 19<sup>th</sup> Street, Room 407  
Denver, CO 80202-2517

SECRETARY OF LABOR,

Complainant,

v.

MANSON MOWAT, A JOINT VENTURE,

Respondent.

OSHRC Docket No. 11-1378

Appearances:

Abigail G. Daquiz, Esquire, U.S. Department of Labor, Office of the Solicitor  
Seattle, Washington  
For the Complainant.

Aaron K. Owada, Esquire, AMS LAW, P.C.  
Lacey, Washington  
For the Respondent.

Before: John H. Schumacher  
Administrative Law Judge

**DECISION AND ORDER**

This proceeding is before the Occupational Safety and Health Review Commission (“the Commission”) under section 10(c) of the Occupational Safety and Health Act of 1970, 29 U.S.C. § 651 *et seq.* (“the Act”). The Occupational Safety and Health Administration (“OSHA”) began an inspection of a worksite of Respondent, Manson Mowat, a Joint Venture, on March 5, 2011, after an accident that occurred at the site that day. The accident took place on a barge that was involved in a project to replace the Manette Bridge in Bremerton, Washington. As a result of the inspection, OSHA

issued to Respondent a Citation and Notification of Penalty (“Citation”) alleging a serious violation of 29 C.F.R. § 1926.553(a)(4) and proposing a penalty of \$4,900.00. Respondent filed a timely notice of contest, and the hearing in this case was held in Seattle, Washington, on September 13, 2012. Both parties have filed post-hearing briefs.

### **Jurisdiction**

Respondent admits that, at all relevant times, it was an employer engaged in construction at the Manette Bridge in Bremerton, Washington, that it used materials, machinery and other goods that had traveled in interstate commerce, and that it was engaged in a business affecting commerce within the meaning of section 3(5) of the Act, 29 U.S.C § 652(5). *See Answer*, ¶¶ 1, 2 and 3. I find, therefore, that Respondent was an employer within the meaning of sections 3(3) and 3(5) of the Act and that the Commission has jurisdiction of the parties and subject matter of this proceeding.

### **Background**

Respondent Manson Mowat was engaged to replace the old Manette Bridge, in Bremerton, Washington, with a new bridge. Mowat was the bridge expert, while Manson Construction (“Manson”) was a civil marine contractor that built bridges, docks and other structures. The two companies formed a joint venture to accomplish the project, and Manson began working at the site in October 2010. (Tr. 22, 92, 139-40).

Manson utilized barges at the site to hold equipment and parts, and one of those barges was the “Manson 30.” When it was necessary for the Manson 30 barge (“M-30 barge”) to move, a tugboat would connect to the barge and move it to the new location. The barge was held in place by two legs or pilings called “spuds.” To enable the tugboat to move the barge, the barge operator would use a hoist system with wire ropes that

raised the barge's spuds. Then, once the move had been made, the barge operator used the hoist system to lower the spuds.<sup>1</sup> The hoist system on the barge was a Clyde diesel-powered three-drum hoist. Only two of the drums, the front drum and the middle drum, were utilized, as one hoist was needed for each spud. (Tr. 23-26, 31, 92, 140-42).

On March 5, 2011, a Manson employee named {redacted} was operating the M-30 barge at the site. Just before the accident, an order was given to move the barge, and {redacted} used the barge's hoist system to raise the spuds. After the move, the tugboat captain radioed {redacted} to lower the first spud. Within seconds of the first spud being lowered, the captain heard a loud pop; he then saw {redacted} fall from behind the hoist system containment. The captain called out that a man was down; he then called 911 and went to give aid to {redacted}. {redacted} was taken to the hospital, where he died from his injuries. (Tr. 24-25, 31, 35-36, 138-50).

Edward DeLach, an OSHA compliance officer ("CO"), went to the worksite later in the day on March 5, 2011. He met with officials of Manson, who told him that one of the hoists had blown apart and struck {redacted} in the head. The CO went out to the M-30 barge with the Manson officials, and one of them explained the hoist operation to him. The CO videoed the barge and the hoist system. CO DeLach made a second visit to the site to interview the tugboat captain and members of Manson's crew. On March 9, 2011, the CO again viewed the barge, which had been moved to Manson's yard. He went on the barge, and Shawn Hillis, Manson's vice-president of equipment, demonstrated to him

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<sup>1</sup> The barge is shown in Exhibits R-1 and R-2. The spuds, which are the tall poles on either side of the barge, are 85 to 90 feet long and weigh 13 to 14 tons apiece. Each spud sits in a "spud well" or "collar," and Exhibit R-4 is a close-up of one of the spuds in its collar. Exhibit R-4 also shows the wire rope that goes from the hoist system to the spud; the rope goes down through a sheave and a "sheave pin roller" that is at the end of the spud, and it is by this means that the spud is raised and lowered. (Tr. 100-04).

how the hoist system worked and where the operator would stand when using it. The CO videoed the demonstration. (Tr. 23-31, 34-36; Exhibits C-1, C-2).

In the demonstration, Mr. Hillis showed the CO how the operator would use the clutch and brake of the front hoist so the drum could pull in the wire rope and raise the spud. He also showed him how the operator, once the spud was raised, would push a “pawl,” also called a “dog,” into the ratchet wheel on the drum to lock it in place; to lower the spud, the operator would lift up on the spud to enable the pawl to release automatically, after which the operator would release the brake so the spud could drop. Mr. Hillis additionally showed the CO the middle hoist, which was the one that broke apart.<sup>2</sup> The pawl for that hoist did not have an automatic release, such that the operator would have to take the pawl out of the ratchet wheel and then manually push it back to its disengaged position; the pawl was also somewhat loose, such that when it was pushed forward it could fall onto the rim of the ratchet wheel rather than the wheel itself. The CO noted there was a bungee cord in the area of the middle hoist. When he asked what it was for, Mr. Hillis said that some operators had attached it to the hook on the pawl as it made it easier to pull the pawl off of the ratchet wheel. (Tr. 23-27, 34-36).

CO DeLach asked for the maintenance records and the operator’s manual for the subject hoist. He received a number of purchase orders for parts for the hoist. He also received Exhibit C-3, a pamphlet of general specifications for Clyde hoists. Upon reviewing C-3, he noted that the third page, which set out general specifications for Clyde gasoline and diesel cone friction hoists, described pawls as being “manually engaged” and having “automatic release.” The CO determined that the middle hoist was not being

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<sup>2</sup> The CO saw the half of the middle hoist’s ratchet wheel that had broken off and struck {redacted}; he also saw the bolts that had broken off. (Tr. 26-30).

operated according to the manufacturer's specifications, because the pawl did not have an automatic release and because of the use of the bungee cord. He concluded the pawl had engaged inadvertently with the ratchet wheel as the spud was being lowered and that the weight of the spud caused the wheel to break. He further concluded the violation was serious due to the likelihood of serious injury. The CO noted that the operator stood on a platform next to the hoist system and that Mr. Hillis's head had been right over the ratchet wheel when he had demonstrated the hoist's operation. (Tr. 24, 31-41).

### **The Alleged Violation**

Citation 1, Item 1, alleges a violation of 29 C.F.R. § 1926.553(a)(4) as follows:<sup>3</sup>

29 CFR 1926.553(a)(4): All base-mounted drum hoists in use did not meet the applicable requirements for design, construction, installation, testing, inspection, maintenance, and operations, as prescribed by the manufacturer:

- a) Bremerton, WA., Manette Bridge, Manson Spud Barge M-30, was operated with the dog/pawl of the middle drum not equipped with an "automatic release" as required by the manufacturer.
- b) Bremerton, WA., Manette Bridge, Manson Spud Barge M-30, a rubber bungee cord, which was not authorized by the manufacturer, was used to disengage the dog/pawl from the ratchet wheel.

### **The Secretary's Burden of Proof**

To demonstrate a violation of an OSHA standard, the Secretary must prove that: (1) the cited standard applies, (2) there was a failure to comply with the cited standard, (3) employees had access to the violative condition; and (4) the cited employer either knew or could have known of the condition with the exercise of reasonable diligence.

*Astra Pharm. Prod., Inc.*, 9 BNA OSHC 2126, 2129 (No. 78-6247, 1981).

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<sup>3</sup> As issued, the Citation had only Instance (a), which was identical to Instance (b) above. On October 14, 2011, the Secretary filed a motion to amend the Citation and Complaint to read as set out *supra*. In an order dated December 12, 2011, the undersigned granted the Secretary's motion to amend.

### *Discussion*

There is no dispute that the cited standard applies to the Clyde hoist at issue in this case. *See* R. Brief, p. 8. Rather, the key dispute is whether the Secretary has shown that Respondent failed to comply with the cited standard. The Secretary contends she has met her burden in this regard. Respondent, however, contends that the Secretary has not proved that the hoist was not operated as prescribed by the manufacturer. Both parties refer to Exhibit C-3 in support of their respective positions.

As noted above, C-3 sets out general specifications for Clyde gasoline and diesel cone friction hoists. Shawn Hillis, Manson's vice-president of equipment, provided C-3 during the inspection to give the CO general information about what Clyde hoists look like, how they are built, and how they operate.<sup>4</sup> Mr. Hillis described C-3 as the relevant pages from a Clyde sales manual he had in his office. He testified that the pages he omitted were not relevant, having information such as Clyde's manufacturing facility and how its hoists were made. He also testified that the hoists shown in C-3 are gasoline hoists that are substantially smaller than the hoists on the M-30 barge. He noted that while gasoline and diesel hoists operate similarly, a diesel engine is more robust and applies more power to the hoist. Mr. Hillis believed the information in C-3, including what it stated about pawls, had no specific application to the subject hoist; the hoists in C-3 were smaller and meant for applications such as logging, not for heavy hoisting. Mr. Hillis said the tables on the last page of C-3, which had information such as horsepower, line pull and speed, cable size and capacity, and the weight of each listed hoist, did not

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<sup>4</sup> Although Mr. Hillis and other witnesses at times referred to hoists as winches, the word "hoist" is used in this decision for consistency and because C-3 refers to the equipment as hoists.

correlate to the subject hoist; in that regard, he noted that the diameter of the cable for that hoist was 1.25 inches and that that size cable was not in the C-3 tables. (Tr. 114-21).

The record shows that Clyde is no longer in business and that the three-drum hoist system that was on the M-30 barge dates from the mid-1930's to the early 1940's.<sup>5</sup> (Tr. 47, 70, 117, 197). Mr. Hillis testified that in 2011 Manson had 50 to 60 hoists and that of those about 40 were Clyde hoists; of those 40, less than half had automatic releases. He said that he had worked for Manson for 34 years, that he had worked on barges and operated hoists, including the three-drum system on the M-30 barge, and that he was not aware of the middle hoist in that system ever having an automatic release. He also said that he had been Manson's equipment manager for 15 years before his present position, that he was responsible for maintaining equipment catalogs and manuals, and that he had never seen an instruction, operation or specification manual for the subject hoist system; the only document he had was C-3, the sales manual. Mr. Hillis noted he had technical manuals for some newer Clyde hoists, like air-operated hoists; he believed that Clyde would have prepared a technical manual for the subject hoist system, but Manson had never had one. (Tr. 91-95, 98-99, 117, 121-23, 129-32).

I observed the demeanor of Mr. Hillis on the witness stand, and I found him to be a credible and convincing witness. On this basis, and in view of his testimony, I find that the Secretary has not shown that Exhibit C-3 has any specific application to the hoist involved in the accident. This is particularly true since, according to Mr. Hillis, fewer than half of Manson's other Clyde hoists have automatic releases and the subject hoist, to his knowledge, had never had an automatic release.

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<sup>5</sup> The record also shows that after the accident, Manson replaced the old Clyde hoist system with a newer-model hoist system. (Tr. 41, 101). *See also* Exhibit R-3, a photograph showing the replacement system.

The two experts in this matter, Dale Cavanaugh and Anthony De Sam Lazaro, also testified about Exhibit C-3 and whether the subject hoist was required to have an automatic release.

Dale Cavanaugh is OSHA's Assistant Regional Administrator ("ARA") for the region consisting of Oregon, Washington, Alaska and Idaho. He manages the Office of Technical Support, which provides support to OSHA COs. ARA Cavanaugh has a B.S. degree in mechanical engineering and is a registered engineer, and he worked for MSHA for many years with responsibility for general mechanical systems, including hoist systems. He became the mechanical safety engineer for MSHA's National Office, where much of his time was spent investigating accidents. In 1991, OSHA hired him to be its division chief of construction compliance assistance, and, in 2008, he began his current position. ARA Cavanaugh has testified as an expert in prior OSHA cases, and he was accepted as an expert witness in this proceeding. (Tr. 61-68).

ARA Cavanaugh assisted CO DeLach in this matter. Although he did not go to the worksite or physically inspect the equipment, he reviewed the evidence the CO obtained, including his videos and Exhibit C-3. He described how the subject hoist system worked, based on his understanding of it and his extensive experience with hoists. His opinion was that C-3 contained general specifications for Clyde gasoline and diesel hoists for that era and that C-3 required the subject hoist to have an automatic release.<sup>6</sup> He conceded, however, that there was probably not room in the area of the middle hoist for a counterweight like the front and back hoists had; he explained that the

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<sup>6</sup> Mr. Cavanaugh indicated his belief that there was actually more detailed information regarding Clyde hoists in the sales brochure than was provided in C-3. (Tr. 69-70). However, having credited the testimony of Mr. Hillis, I find that all of the information relevant to the Clyde hoists in this case was in fact provided in C-3. Further, even assuming there might have been additional relevant information in the sales brochure, there is no evidence that OSHA attempted to obtain the entire brochure by subpoena or other means.



counterweights on the front and back hoists were what made the pawls for those hoists release automatically.<sup>7</sup> (Tr. 66-79, 85-88).

Anthony De Sam Lazaro has a B.S. degree in physics, M.S. degrees in math, engineering and marine technology, and a PhD in engineering. He was in the Indian Navy for 20 years, and he retired in 1984 after becoming Rear Admiral. He then taught engineering design and manufacturing in three different universities in the United States, and, in the last university, he was dean of the engineering school for 14 years. He currently works as a forensic engineer in cases which require accident reconstruction based on the facts of the specific case. He has testified as an expert on behalf of Washington State OSHA and on behalf of defendants. Dr. Lazaro described his forensic engineering technique as starting from a clean slate, determining what was physically possible and what was not, and then eliminating the things that were not possible until arriving at a theory as to what happened that is supported by all the facts. (Tr. 160-66).

Dr. Lazaro was retained by Respondent to provide expert testimony in this case. To prepare for this matter, he read the statements of all of the witnesses who were there when the accident occurred, and he took down the facts of those statements. He personally viewed the M-30 barge and also went to Manson's yard in Seattle, where the subject hoist system was being stored. He physically examined the middle hoist and looked at all of its sections. He also reviewed Exhibit C-3, which he considered to be general specifications for Clyde hoists. Dr. Lazaro testified that the manufacturer's specifications, which would be provided after purchase of a hoist, would contain detailed information about that particular hoist, including safety instructions, safe working loads,

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<sup>7</sup> Mr. Hillis testified that Exhibit R-19 showed the counterweight for the front hoist; he indicated that the counterweight was the black rectangular box in the center right of R-19. (Tr. 108).

scheduled maintenance, and parts lists. He also testified that concluding the middle hoist was required to have an automatic release based on C-3 and the fact the other two hoists had them was not accurate.<sup>8</sup> He stated that there was simply not enough room in the area of the middle hoist for a counterweight like the two other hoists had. He further stated that if Clyde had specified for the middle drum to have a counterweight or automatic release, it would have provided the room to actually put one in. (Tr. 166-67, 184-89).

Based on the above, I find that the Secretary has not met her burden of proving that the subject hoist, in not being equipped with an automatic release, did not meet the applicable requirements as prescribed by the manufacturer. ARA Cavanaugh basically agreed with Dr. Lazaro that there was not room in the area of the middle hoist for a counterweight. And Dr. Lazaro's opinion in regard to C-3 is credited over that of ARA Cavanaugh in view of Dr. Lazaro's education, his extensive experience in engineering design and manufacturing, and the fact that he physically examined the subject hoist and all of its components. Instance (a) of Item 1 is VACATED.

As to Instance (b), regarding the alleged use of the bungee cord, the record does not establish that the bungee cord was ever used on the pawl for the subject hoist at the Manette Bridge project. The CO testified that he did not know if the cord was ever used on that project and that Mr. Hillis, in his demonstration, was describing how it had been used at a different project. (Tr. 46-47). Mr. Hillis testified that he told the CO he had learned, after the accident, that an operator at a previous site had used the bungee cord on the pawl of the cited hoist; no one told him why the cord was used at the prior project, but he assumed it was to automatically release the pawl due to the operation the barge was

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<sup>8</sup> Dr. Lazaro said the term "automatic release" was a misnomer in this case; he noted that the pawls for the front and back hoists had to be released by hand, after which their respective counterweights would make the pawls drop back automatically. (Tr. 188).

doing at that time.<sup>9</sup> (Tr. 130-35). In addition, Jeffrey Perez, the tugboat captain who moved the M-30 barge right before the accident, testified he had operated the subject hoist at the site and never saw a bungee cord attached to it. (Tr. 142, 147-50).

Dr. Lazaro testified that, even if the bungee cord was used on the pawl of the cited hoist, doing so would not have violated the manufacturer's specifications. He likened the use of the bungee cord to the use of a rubber stopper to keep a door open. He said that using the bungee cord, if anything, would have kept the pawl from falling back on top of the ratchet wheel. He also said that he and others, after attaching the bungee cord to the pawl for the cited hoist, had tried to lean or pull the pawl forward and that each time the pawl went back to a safe position. Dr. Lazaro described using the bungee cord in that manner as an operative aid or an assist to the operator. (Tr. 190-92).

I find that the evidence does not demonstrate that the bungee cord was used on the pawl of the cited hoist at the subject project, as the Secretary has alleged. Further, if it had been, I credit Dr. Lazaro's opinion that doing so would not have violated the manufacturer's specifications and, if anything, would simply have kept the pawl from falling back on top of the ratchet wheel.<sup>10</sup> On the basis of the evidence of record, the Secretary has not proved the alleged violation. Instance (b) of Item 1 is VACATED.

Although the two instances of Item 1 have been vacated, for completeness of record I turn to the testimony of the two experts in regard to the cause of the accident in this case. ARA Cavanaugh's opinion was that when {redacted} began to lower the spud, he first hoisted it up a little so he could move the pawl out of the ratchet wheel; when he

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<sup>9</sup> Mr. Hillis did not see the bungee cord at the subject site as he never went to that site. (Tr. 125-28, 131).

<sup>10</sup> ARA Cavanaugh did not address using the bungee cord; however, he did say that to keep the pawl from falling forward into the wheel, "at the very least" something like a spring could have been put on the pawl to prevent inadvertent engagement. (Tr. 79). This testimony, as I read it, is akin to that of Dr. Lazaro that using the cord would have been an operative aid by keeping the pawl in a safe position.

did so, the pawl either did not go all the way back or it rested on the wheel or the rim, and, when the spud began to descend, the pawl inadvertently engaged with the ratchet wheel, putting great force on the wheel and making it break apart. He testified that it was an impact force that caused the bolts to shear or fail; he described the impact as an explosion that resulted in pieces of the wheel flying out. (Tr. 75-77).

Dr. Lazaro testified there were two possibilities as to what had occurred: (1) the ratchet wheel was moving and the pawl got into the wheel, or (2) the pawl was already in the wheel when the shear and accident happened. He said that, based on his examination, it was clear the bolts had sheared and the pawl was locked into the ratchet wheel at the time.<sup>11</sup> He reached this conclusion upon finding very little damage to the teeth in the ratchet wheel and the tooth of the pawl; if the pawl had fallen in with the hoist running at full speed, there would have been severe damage to the teeth and the pawl, which was not the case.<sup>12</sup> Dr. Lazaro also calculated the impact force that had occurred, which he described as “very high.” He determined that the only thing that could have caused that impact force and gravitational pull was the spud. He concluded that when the spud attached to the subject hoist was lowered, a stone or other debris was caught in the sheave. When the spud was raised, more weight was put on the motor; the sheave was not turning due to the stone, the hoist was pulling up the spud on only one side of the line, and the other side of the line was going slack, meaning the mechanical advantage of the hoist was lost. The operator then engaged the pawl in the ratchet wheel. At some point, with the spud still raised, the stone or other debris dislodged, causing the sheave

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<sup>11</sup> Dr. Lazaro said only one bolt had sheared; the rest were pulled out or had tensile fractures. (Tr. 174).

<sup>12</sup> During his testimony, Dr. Lazaro referred to Exhibits R-1 through R-20, which are the photographs that Respondent took after the accident; R-6 through R-20 are views of the subject hoist and its various parts.

and spud to fall down full speed until hitting the end. Dr. Lazaro described the result as an “impossible force” on the wheel, causing it to break apart. (Tr. 167-79).

Dr. Lazaro discussed Exhibit R-21, an animated video he had had prepared, as it was shown at the hearing. He first noted that the depiction of the sheave’s location in the exhibit was wrong and that the sheave was actually much lower, being about a foot and a half from the end of the spud; he said the sheave had an error of design in this regard, as it was more susceptible to picking up debris from the bottom. He then noted the part of R-21 that showed how the sheave was not turning when the obstruction was there, causing the hoist to pull up on the spud on only one side of the line, with the other side of the line going slack.<sup>13</sup> Dr. Lazaro testified he was “very definite” about his opinion with respect to what had occurred on the day of the accident. (Tr. 179-83).

For the same reasons set out *supra*, I credit the opinion of Dr. Lazaro as to the cause of the accident; that is, his opinion is credited due to his education, his extensive experience in engineering design and manufacturing, and the fact he physically examined the subject hoist and all of its components. I find, accordingly, that the accident occurred in the way that Dr. Lazaro described. This finding is supported by R-21, which I found particularly persuasive. It is also supported by Mr. Hillis, Manson’s vice-president of equipment, and Mr. Perez, the tugboat captain. Mr. Hillis testified about other instances of rocks or other debris being caught in sheaves of spuds, and Mr. Perez testified about a prior incident at the subject site when a spud on the M-30 was “fouled” with a rock in a manner similar to what happened in this case; on that occasion, the spud had to be lifted up by a crane so the rock could be removed. (Tr. 108-10, 124-25, 146-48).

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<sup>13</sup> Dr. Lazaro indicated that normally an operator would be able to tell something was wrong but that it was possible that, due to the noise of the operation, he did not notice anything was amiss. (Tr. 181-82).

**Findings of Fact and Conclusions of Law**

The foregoing decision constitutes the findings of fact and conclusions of law in accordance with Federal Rule of Civil Procedure 52(a). All proposed findings of fact and conclusions of law inconsistent with this decision are denied. Further, any arguments not addressed above have been considered and rejected.

**ORDER**

Based upon the foregoing findings of fact and conclusions of law, it is ORDERED that:

1. Serious Citation 1, Item 1, alleging a violation of 29 C.F.R. 1926.553(a)(4), is  
VACATED.

/s/ \_\_\_\_\_  
John H. Schumacher  
Judge, OSHRC

Dated: March 25, 2013  
Denver, Colorado