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SOL (MSHA) V. CONSOLIDATION COAL
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Federal Mine Safety and Health Review Commission (F.M.S.H.R.C.)
Office of Administrative Law Judges

SECRETARY OF LABOR, MINE SAFETY AND HEALTH ADMINISTRATION (MSHA), PETITIONER	CIVIL PENALTY PROCEEDING Docket No. WEVA 89-52 A.C. No. 46-01318-03850
v.	Robinson Run No. 95 Mine
CONSOLIDATION COAL COMPANY, RESPONDENT	

DECISION

Appearances: Ronald Gurka, Esq., Office of the Solicitor, U. S. Department of Labor, Arlington, Virginia, for the Secretary;
Michael R. Peelish, Esq., Consolidation Coal Company, Pittsburgh, Pennsylvania, for Respondent.

Before: Judge Weisberger

Statement of the Case

On December 30, 1988, the Secretary (Petitioner) filed a petition for assessment of civil penalty, alleging a violation by the Operator (Respondent) of 30 C.F.R. 75.1725(a). Respondent filed an Answer on January 30, 1989. On April 7, 1989, this case was reassigned to the undersigned and pursuant to notice, the case was heard on August 9 - 10, 1989, in Morgantown, West Virginia. Bretzel W. Allen and Stephen G. Sawyer testified for Petitioner. Bernard W. Koleck, Kenny Henline, and Larry D. Patts testified for Respondent. Post Hearing Briefs were filed by Respondent and Petitioner, respectively, on October 16, and 18, 1989.

Stipulations

1. The Parties have stipulated that Consolidation Coal Company is a large coal mine operator.

2. The Parties have stipulated that Robinson Run No. 95 Mine is a large mine.

3. The Parties have stipulated that the history of previous violations reveals a total of 997 assessed violations and 1,016 inspection days in a 24-month period preceding the order at issue in this case for a ratio of .98 violations per inspection day.

4. Parties stipulate that assessment of a civil penalty in this case would not affect Consolidation Coal Company's ability to continue in business.

5. The Parties stipulate that a withdrawal order pursuant to section 104(d) of the Mine Act had been issued within the 90-day period preceding the issuance of the order at issue in this case.

Findings of Fact and Conclusions of Law

On August 29, 1988, Bretzel W. Allen, an MSHA Inspector, observed "excessive wear" on both ends of a wheel axle on a belt tension unit. He issued a section 104(2)(d) Order (Order No. 3117715) alleging a violation of 30 C.F.R. 75.1725(a).

The belt tension unit in question has two axles, each of which has two wheels, which ride on tracks or I beams. The unit is attached to the belt line and controls the pressure on the belt line. The tension on the belt line is adjusted by an hydraulic jack which is attached to the belt tension unit by a tension rope. This rope allows the tension unit to ride back and forth on the I beams, thus adjusting the tension on the belt line to which it is connected. The belt tension unit is equipped with vertical guide rollers to prevent the wheels and carriage from moving in a lateral direction.(FOONOTE 1)

Section 75.1752(a), in essence, requires that mobile and stationary equipment and machinery shall be maintained in "safe" operating condition and if, "in unsafe condition," the equipment shall be removed from service immediately. The axle in question had been, according to the uncontradicted testimony of Allen, worn at both ends. At one end (Exhibit J-3, J-5) it had been worn from an original diameter of 30.5 millimeters to a diameter of 21 millimeters. Allen opined that the axle was unsafe due to the amount of wear, and its color observed by him to be a shiny silver to deep blue, which indicated that it was over-heated and

that its temper had changed.(FOOTNOTE 2) According to Allen, the amount of wear on the axle and the color, which indicated that the temper had changed, led him to conclude that the axle could fail at any time.

Respondent's witnesses did not deny the amount of wear on the axle, as testified to by Allen, but opined that it nonetheless was safe. Larry D. Patts, Respondent's Assistant Vice President in charge of safety, opined that the axle, made out of 1020 steel, is ductile, and that accordingly, with continued wear, would bend before it would break. Not much weight was accorded his opinion as he indicated on cross-examination that ductile material can fail in a brittle fashion.

Koleck presented mathematical calculations as to the maximal principal stress (or actual applied load) to which the axle in question is subjected. He indicated that this figure takes into account shear stress, which is based on the weight of the cart and tension of the belt, and the bending stress, which is based on the weight of the carriage and the force of the belt. By dividing the minimum strength of the material of the axle (as set forth by manufacturers of the steel) by the maximal principal stress, he arrived at a safety factor of 1.27. Essentially, according to Koleck, a safety factor of 1.27 indicates that the axle was safe, as bending would occur if the safety factor was less than 1.

Petitioner presented a rebuttal witness, Stephen G. Sawyer, who did not contradict Koleck's calculations. However, Sawyer indicated that Koleck's calculations did not take into account the effect of fatigue, i.e., the stress on the axle caused by repeated loading and unloading the belt, which would be between 40 and 60 percent of the manufacturer's figure for tensile strength.(FOOTNOTE 3)

Sawyer opined that, in essence, should the axle fail, fatigue strength would be the governing mode, not yielding strength, and it would fail from fatigue in a sudden and brittle fashion. Also, Sawyer explained that, due to galling (see the ridges and bumps on Exhibit J-5), caused by two metals rubbing together, the fatigue strength can be reduced by up to 90 percent. According to Sawyer, the effect of the abrupt change in the diameter of the axle due to its wear (see the parallel lines in Exhibit J-5), was ignored by Koleck. Although this change was compensated for by Koleck, the effect of the change "is very critical" in estimating fatigue strength (Tr. 399). Sawyer also indicated that, according to current prudent engineering practice. A safety factor should not be less than 1.5.

Although Patts and Koleck are engineers, and the former has a Bachelor's degree in metallurgy and has expertise in failure analysis, I find Sawyer, who is a professional engineer, to be the more reliable expert witness. In this connection, I place considerable weight on Sawyer's educational background which includes Masters and Doctorate Degrees, with a specialty in fracture mechanics. I found his testimony to be well reasoned. For these reasons I accept his testimony.

The Order in question alleges a violation herein of 30 C.F.R. 75.1725(a), which, in essence, requires that equipment be maintained in a safe condition, and that unsafe equipment shall be immediately removed. Webster's Third New International Dictionary, 1986 Edition, (Webster's) defines "safe" as "1. free from damage, danger, or injury, secure. . . . " Webster's defines "free from" as "(a) lacking; without." "Danger" is defined in Webster's as "3. liability to injury, pain, or loss: PERIL, RISK. . . . " I find that the axle in question had worn from a diameter of 38.5 to 31 millimeter (Joint Exhibit 3). Considering this degree of wear, as well as the effect of galling, the abrupt change in the axle diameter caused by the wear, as well as the impact of fatigue stress, as set forth in Sawyer's testimony that I accept, I find that there was a risk of the axle failing. As such, applying the common uses of the the term "safe," as defined in Webster's, infra, I conclude that the axle was not safe. Thus, I find that Respondent herein violated section 75.1725(a), supra.

II.

According to Allen, the axle had overheated as evidenced by its blue color, and was "a definite ignition source for coal dust (Tr. 61). Essentially he indicated that there was a "possibility" (Tr. 61) of a fire, as it is normal to have some coal dust on carriage parts and the coal dust on the carriage was not wet. He indicated that should-a fire occur, it would be

dangerous to the miner who normally works approximately 22 feet from the carriage. He also indicated that if the axle would break, it would cause a sudden stopping of the belt which would cause the belt to break. According to Allen, in that event a person could be injured, from the whipping action of the belt or from material flying off the belt. In such an event a person walking alongside the belt, such as a preshift examiner or a belt cleaner, could be injured seriously or killed. In essence, Allen opined that in the event of the axle breaking, the belt would lockup. According to Allen, the excessive wear on the top of the axle, which he observed, indicates that pressure was being applied in an upward fashion. Thus, he indicated that if the axle would break, the carriage would be lifted upward. Allen indicated that he was "sure" that if the axle would break, the carriage would lockup (Tr. 149). In essence, according to Allen, if the rollers and belt locked up, it would "definitely" break the belt (Tr. 150). He explained that this would occur based on the fact that the belt was "relatively large, long, heavy," and was driven by two 250 horsepower motors. He also stated that if the axle would break, the carriage could drop, as it would be supported by only one axle at that point, and it could get wedged in the broken axle so as to cause the belt to lockup. He also stated that if the axle would break, a wheel could get stuck between two frames, also causing the belt to lockup. He opined that at a minimum, in the event of an axle breaking, there would be friction between two pieces of metal, and that it would be impossible for the belt to operate. He indicated, essentially, that in the event of a lockup, extra stress or tension would be created on the belt, which could cause the motor to overload, creating heat which could create a fire hazard.

In essence, he opined that with additional wear the axle would break, and not bend. He said that in the event that it would bend, it would apply more tension to the carriage, which could possibly cause the system to overload allowing the carriage to loosen the belt, which would then slip into drive, creating heat which could create a fire hazard.

The record does not indicate that the testimony of Allen, with regard to the likelihood of a hazard occurring as a consequence of the worn axle, was based upon either his observation or investigation of incidences where similar axles have failed. Indeed he indicated on cross-examination that he did not know of any situation where a broken axle has lead to a belt being broken. In evaluating the likelihood as to whether there was a reasonable likelihood of the worn axle contributing to the hazard of an injury, I relied more on the opinions of the engineers who testified, due to their expertise based on their educational background and work experience.

Joint Exhibit 4, as explained by Respondent's witnesses, indicates that the carriage wheels of the tension unit rolled on I beams, and that movement of the wheel upward and downward was

limited by a frame, shaped as a reverse C, and whose lower horizontal member over-lapped the lip of the I beam. Accordingly, should the axle break, due to excessive wear, as explained by Respondent's witnesses, downward movement of the axle and wheel would be limited by a maximum of 5/8 of an inch, which is the distance the diagonally opposite axle and wheel would rise, until it would be caught by the upper horizontal member of the over-lapping frame.(FOOTNOTE 4)

Koleck opined that if the axle would bend and not break, pressure would force the wheel upward to rub against the frame, but would not have any effect upon the operation of the carriage. Patts indicated that in such a situation, there would be an increase in friction which would "slightly" effect its efficiency, "but not the operation" (Tr. 345). In contrast, Allen opined that with bending, there would be friction of such a degree as to possibly create fire due to the presence of dust. However, his testimony did not establish the amount of such dust, and specifically its precise location in relation to the wheel and axle. Also, although the testimony of Allen was to the effect that the wear on the axle occurred in the area facing down, which would indicate that the axle was subject to pressure from above, all other expert witnesses, including Petitioner's expert Sawyer, indicated that the axle, while in normal operation, is subject to an upward pressure. Due to their expertise, and well-reasoned opinions, I accept their testimony in this regard. Thus, if the axle would bend, it would be pushed upward against the underside of the frame. The record does not establish specifically that coal dust

was present in that area. Also, I find it significant that, as established by the uncontradicted testimony of Kenny Henline, Respondent's maintenance foreman, approximately 4 months after the belt tension unit in question was installed in July 1985, the axle, which was not welded to the frame, came loose, and a wheel dropped off. He indicated on cross-examination that there would have been more friction to the belt and it would have slowed down, but it is most significant to note that according to his testimony, the belt operated normally and nothing locked up or jammed.

Taking into account all the above, I conclude that it is possible, as outlined by Allen, that in the event of the axle bending, there could be friction to such a degree as to cause a fire which could cause a hazard to an employee working 22 feet away. Also, it is clear that there was a possibility of the axle breaking, which could cause the belt to stop, causing injury as a result of material on the belt or the belt itself being thrown at persons in the vicinity and injuring them. However, due to the presence of vertical rollers, and especially, the maximum of 5/8 of an inch clearance between the I beam and the frame, I find that it has not been established by the weight of the evidence that there was a reasonable likelihood that the hazard of the axle breaking or bending would result in an injury of a reasonably serious nature. As such, it has not been established that the violation herein was significant and substantial. (See, Mathies Coal Company, 6 FMSHRC 1 (January 1984).

III

According Allen, it is difficult to determine the amount of time it took to wear the axle down to the point where it was observed by him. He indicated, however, that a representative of the miners, Nelson Starcher, told him that the condition had been in existence for 30 days. Allen said that Starcher said that the Company did not want to shut down the longwall to repair it. He said that Starcher and another miner, Richard Moats, had asked the Company to repair it. Henline, who was responsible for the operation of the belt line, indicated that about a week to 10 days prior to the issuance of the Order in question, a greaser, who has the responsibility for weekly greasing the unit, in essence, informed him of the wear. Henline indicated essentially that he could only see "very slight" wear of the axle before taking off the washer, but with the washer off, he had observed that it was "worn" (Tr. 272), but he did not feel it would cause any safety problems. He indicated that he did not feel at that time that it was necessary to shut down production to replace the axle. Henline then ordered a new axle, two wheels, washers, and cotter pins which were delivered 2 days later, and were placed near the belt tension unit.

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In order to establish that the violation herein was the result of Respondent's unwarrantable failure, Petitioner must establish the existence of "aggravated conduct." (See, Emery Mining Corporation, 9 FMSHRC 1997 (1987)). In this connection, it is significant to note, as discussed above, infra, that Henline already had the experience of having a wheel fall off the unit in question, with the result that the belt had continued to operate in a normal fashion. Further, the existence of the vertical guide rollers, as well as the frame which overlapped the I beam, would tend to mitigate to a significant degree, the consequences of a broken axle. Given these circumstances, I conclude that it has not been established that the violation herein was as a result of Respondent's unwarrantable failure.

IV

Respondent had on hand, in close proximity to the belt tension unit, replacement parts for a wheel and axle, for approximately a week prior to the issuance of the Order in question. I conclude that it acted with a moderately high degree of negligence in not replacing the worn axle which it had known about for at least a week prior to the Order. Primarily due to the presence of the vertical guard rollers, and the effect of the overlapping frame on the amount of movement that could reasonably be expected from the carriage in the event of an axle breaking, I conclude that the gravity of the violation herein was only moderately serious. Taking into account the other statutory factor, as stipulated to by the Parties, I conclude that a penalty herein of $800 is appropriate for the violation found herein.

ORDER

It is ORDERED that Order No. 3117715 issued August 29, 1988, be amended to a section 104(a) Citation, and be further amended to reflect the fact that the violation therein is not significant and substantial. It is further ORDERED that Respondent shall, within 30 days of the Decision, pay a civil penalty of $800 for the violation found herein.

Avram Weisberger
Administrative Law Judge

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FOOTNOTES START HERE
~FOOTNOTE_ONE

1. Petitioner's evidence is insufficient to establish that the subject unit did not have such rollers as depicted in Joint Exhibit 4, Section E-B. Allen's statement, that he did not recall seeing these vertical guide rollers when he issued the Order in question, does not negate their existence.

~FOONOTE-TWO

2. Although the axle was covered by a wheel and washer, that protruded from the wheel approximately a quarter of an inch, and extended from the axle approximately 1 inch, Allen indicated that he observed the the color of the axle which he indicated was not

entirely covered by the wheel. In this regard, Bernard W. Koleck, Respondent's Senior Maintenance Engineer, indicated that some wear could be seen without taking off the wheel. Further, no witnesses contradicted Allen's description of the color of the axle at the time of the citation. I thus accept his testimony.

~FOOTNOTE_THREE
3. Although on cross-examination it was elicited that when calculated, 60 percent of tensile strength approximates the figure that Koleck arrived at for maximum principle stress. I can not conclude that Koleck took into account the fatigue or yield stress, as that is not explicitly referred to in his testimony or in his calculations (Respondent's Exhibit R-1). Nor was Koleck recalled to rebut Sawyer's testimony, although Respondent was given the opportunity to call rebuttal witnesses.

~FOOTNOTE_FOUR
4. Sawyer opined that the carriage could possibly go higher than 5/8 of an inch if the overlap would be compromised by the movement of other parts in the system or other conditions. However, Sawyer indicated that he did not make a close inspection of belt tension units. He conceded that, with regard to "how the components work and shift together," he does not know the tension unit as well as Patts, Koleck or Henline (Tr. 402). Thus, his opinion with regard to the functioning of the unit is not accorded sufficient weight to offset the testimony of Respondent's witnesses.

Similarly, the effect of the I beam in preventing further movement of the carriage, depends upon the distance the frame overlaps the I beam. Patts indicated on cross-examination that this distance is "approximately" 1 1/2 to 2 inch (Tr. 347), and guessed that the minimum distance may be 1/2 inch. I find that there is insufficient evidence to conclude that there was a likelihood, in the event of the axle breaking, of the amount of the overlap being as small as a 1/2 inch. Also, there is insufficient evidence to establish that a 1/2 inch overlap would not suffice to capture the frame and prevent its further movement.